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The Standards Liaison Officer
Australia New Zealand Food Authority
Macquarie House
55 Blackall Street
Barton ACT 2600

Dear Sir

AUSTRALIA NEW ZEALAND FOOD AUTHORITY ACT 1991

Roundup Ready® gene by Monsanto
in Corn, Line NK603

Please find enclosed two recent studies that may assist in the review of the above product.

- ✓ George, B. *et al.* 2001 Comparison of Broiler Performance When Fed Diets Containing Event NK603, Parental Line or commercial corn. Monsanto Technical Report MSL17107, St Louis, MO.
- ✓ Taylor, M. *et al.* 2001 Pesticide Profile, Mycotoxin and Compositional Analysis of Corn Event MON853 and NK603, Parental Control Events and Reference Lines Produced in the US. Monsanto Technical Report MSL16799, St Louis, MO.

The second study was conducted to ensure that the diets created for the first study were of sufficient quality. It discusses MON853 and various pesticides which may or may not be applicable to the application. The second study was provided as it has additional compositional analysis for the NK603 Line which may be of assistance in the safety assessment.

These two studies **do not** contain any confidential information.

Yours Sincerely
MONSANTO AUSTRALIA LIMITED

Megan Shaw
Regulatory Product Manager
05 April 2001

CQR FINAL REPORT

Comparison of Broiler Performance When Fed Diets Containing Event NK 603, Parental Line or Commercial Corn

Project No. MN-00-3
(Monsanto Study No. 2000-01-39-02)

SPONSOR

MONSANTO COMPANY
700 Chesterfield Parkway North
St. Louis, Missouri 63198

STUDY DIRECTOR

COLORADO QUALITY RESEARCH, INC.
400 East County Road 72
Wellington, Colorado 80549

January 2001

Received 9 April 2001.
See later submission MSL-17458 received 24 Dec 2001.

Signatures of Approval

MSL Number: MSL-17107

Title: Sponsor Summary of Report for Study #2000-01-39-02 (Comparison of Broiler Performance When Fed Diets Containing Event NK603, Parental Line, or Commercial Corn)

Facilities

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**Colorado Quality Research (CQR), Inc.
400 East County Road 72
Wellington, Colorado 80549

***Department of Math/Statistics
University of South Alabama
Mobile, AL 36688

Study Director: Beverly George**

Contributors: Mary L. Taylor*, Gary F. Hartnell*, Susan G. Riordan*, Margaret A. Nemeth*, David M. Carpenter (statistician for Trilogy Consulting Corporation)***, and Wayne McWard (former Director of Nutrition and Research, Continental Grain Company, formulation of diets)

Signatures of Approval:

Mary L. Taylor — Author — Feb 23, 2001 — Date

Product Safety Center Representative — Feb. 23, 2001 — Date

Table of Contents

Section **Page**

1.0 Purpose

Traits such as herbicide tolerance are being introduced into corn to provide efficacious, environmentally compatible methods of weed control. The Roundup Ready® corn line NK603 expresses the CP4 EPSP synthase protein, which confers commercial level tolerance to glyphosate, the active ingredient in Roundup® herbicide. The study 2000-01-39-02 was undertaken to compare the wholesomeness of NK603 Roundup Ready corn to other commercial corn varieties including the parental line when fed to rapidly growing Ross x Ross broilers. This document summarizes the events and conclusions from the complete final report for 2000-01-39-02 (Appendix 1) and additional background information.

2.0 Methods

Grain of the Roundup Ready corn event NK603 and the non-transgenic parental control line (B73HT x LH82) was produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03. Grain from five reference lines produced in other locations during the 1999/2000 growing seasons were included in the study 2000-01-39-02 for purposes of comparison to the test event. The five non-transgenic, commercially available reference varieties were: RX826 (St. Joseph, IL, Champaign County), LH235 x LH185 (Production Plan #00-01-46-03 in Kaunakakai, Hawaii), RX770 (Production Plan #99-01-39-13 in Monmouth, IL), DK493 (Yuma County, CO) and MON 847 which is commercially known as RX670 (Production Plan #99-01-39-13 in Monmouth, IL). RX826 and DK493 were commercially produced and not grown under a production plan, and background information was documented in Monsanto study 00-01-50-04. An additional test event, unrelated to NK603, was initially included in the study 2000-01-39-02 but was subsequently excluded from the study by amendment due to a decision not to commercialize that event. All data generated for that particular test event was archived with the study file for 2000-01-39-02.

Mycotoxin and pesticide screens and nutrient analyses of the corn grain used for study 2000-01-39-02 were conducted prior to the study start. No unusual values were reported from these analyses. The pesticide levels were below the limits of detection and the mycotoxin levels were below or slightly above the limits of detection. The diets were formulated based on the individual nutrient analyses for the grain from each test, control, and reference substance tested. The only source of dietary protein used in the study 2000-01-39-02 was from the test lines of corn, supplemented with commercial soybean meal. Methionine and lysine were added as needed to conform to industry standards. All diets were formulated to meet nutritional recommendations (National Research Council (NRC), 1994). Diets were formulated such that the protein levels were as close as possible to NRC values to align them with traditional broiler industry uses. From days 1-20, chickens were fed a starter diet containing approximately 55% w/w corn (crude

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protein ranging from 20.7%-21.9%). From days 20-42, chickens were fed a grower/finisher diet containing approximately 60% w/w corn (crude protein ranging from 19.5%-20.5%). These dietary corn concentrations are within the range used by commercial poultry growers in the United States.

The formulated poultry diets were analyzed for crude protein, amino acids, moisture, fat, crude fiber, neutral detergent fiber, acid detergent fiber, carbohydrates, ash, calcium, phosphorus, potassium, sodium, chloride, magnesium, sulfur, zinc, iron, manganese, and copper. A coccidiostat, salinomycin, was mixed into test diets at a level of 60 g/ton. No growth promotants or other medications were added to test diets. Diets were prepared at the CQR feed mill. Feed was provided *ad libitum;* each pen had its own feeder. During the first six days, a chick feeder tray was added to each pen. Water was provided *ad libitum* by an automatic water drinker in each pen.

3.0 Test Animals

Rapidly growing broiler chickens were used to compare the broiler performance and processing parameters with diets containing Roundup Ready corn event NK603, the parental corn line, and five commercially available reference corn lines. As a consequence of genetic selection, commercial broilers reach a market weight of approximately 2 kg in approximately 42 days. In the study 2000-01-39-02, an approximately 50-fold increase in body weight was observed. The rapidly growing broiler is sensitive to changes in nutrient quality in diets, and therefore is a useful model to evaluate the wholesomeness of protein/amino acid sources.

A high yielding commercial strain of broiler chickens (Ross x Ross 508) were purchased from Hoover's Hatchery in Rudd, IA. The birds were one day of age at receipt and randomly assigned to treatments the same day. Chicks were separated by gender and only healthy birds were assigned. Birds were vaccinated for Mareks disease at the hatchery and for Newcastle and Infectious Bronchitis at CQR at 7 days of age. The birds were examined twice daily for general health, and any abnormal health symptoms were recorded. Any birds sacrificed were weighed, and any birds found dead were necropsied to determine the possible cause of death.

4.0 Experimental Design and Analysis

A randomized complete block design was used, and there were eight treatments corresponding to the eight corn lines evaluated. Treatments were assigned to pens using a randomized complete block design with 80 males and 80 females per each of five blocks. Only personnel involved in feed manufacturing were aware of treatment identification. As much as possible, the intent was to simulate commercial conditions for raising broilers. Birds were housed in concrete floor pens containing clean wood shavings.

The poultry room where the study 2000-01-39-02 was conducted was environmentally controlled for light and temperature. The environmental conditions (floor space, temperature, lighting, bird density, feeder and water space) were similar for all experimental treatments. All treatments were represented in each block consisting of 16 pens (8 male and 8 female) with 10 birds/pen for a total of 80 pens and 800 birds. For each treatment group, there were 100 birds in 10 pens, 5 pens of males (10 birds/pen) and 5 pens of females (10 birds/pen). At study start, there were an additional 2 birds added to each pen to compensate for possible losses due to mortality from starveouts (birds refusing feed) and dehydration which occurs normally during the first few days in a chicken feeding study. At study day 7, the group size was culled to a maximum of 10 birds/pen. The extra birds removed included unhealthy birds first, and any remaining birds still needed to be removed were selected randomly. Birds culled at day 7 were sacrificed and weighed.

Birds were weighed by pen at day 0 (study start) and day 42 (feed removed) and individually at study termination (day 43 for males and day 44 for females). The average body weight/pen and body weight/bird for each treatment group by sex was calculated. The average feed conversion per pen was calculated for the entire duration of the study by using the total feed consumption during the study divided by the total body weight of the surviving birds in the pen. This was averaged for each treatment group by sex. Adjusted feed conversion was calculated by using the total feed consumption/pen divided by the total body weight of the surviving birds and body weight of birds that died or were removed from the pen. At study termination, carcass measurements were taken including those for fat pads which were collected from each bird and weighed. Meat quality assays on breast and thigh meat samples were conducted after in-life study termination.

Statistical analyses were performed on starting and final live weights, feed consumption, feed efficiency, adjusted feed efficiency, chill weight, percent chill weight (chill weight/live weight), breast weight, percent breast weight (breast weight/chill weight), wing weight, percent wing weight (wing weight/chill weight), thigh weight, percent thigh weight (thigh weight/chill weight), drum weight, percent drum weight (drum weight/chill weight), fat pad weight, fat pad as a percentage of live weight, and moisture, protein, and fat for breast and thigh meat. Since the pens were set up as a randomized complete block design with the diet treatments in each of five replicated blocks of pens, the standard randomized block analysis of variance (ANOVA) statistical model was used to analyze the data. Means were compared to each other at the 5% level of significance. An additional analysis was done to compare the fit of Roundup Ready corn event NK603 to the population of responses from the reference varieties. The test was to determine if the responses obtained from animals in the Roundup Ready corn event NK603 treatment group consistent with the expected variation of responses of animals fed the other corn

varieties. This analysis was carried out using a linear mixed model procedure ($P<0.05$) from SAS Institute, Cary, NC.

Colorado Quality Research (CQR) provided Quality Assurance oversight for the in-life phase of the study. Monsanto provided Quality Assurance oversight for the statistical analyses. Discussion on meeting the GLP requirements was in the CQR final report

5.0 Results

The nutrient assay results for the starter and finisher diets met industry standards. A few assay values were slightly above or below NRC values, but this was attributed to assay method variability and the different moisture level of the various diets and not to the corn lines specifically.

Expected chick mortality related to starveouts, dehydration, etc. was observed during the first 7 days of the study. This mortality was randomly distributed across all treatments without any relationship to treatment and occurs commonly in chicks in commercial feeding trials. During the remainder of the study, pen sizes were normalized to a maximum of 10 birds/pen. The distribution of the birds that died from day 7 to study termination was random across treatments (deaths per treatments averaged 1.14% and ranged from 0% to 3% across all treatments). Most of the apparent causes of death were identified at necropsy and occur commonly in chickens (sudden death syndrome and ascites). The birds in all treatments were in good health based on twice daily pen observations. The starting and final body weights of the chicks were normal and the average pen body weights were comparable between treatments (Table 1).

All performance parameters measured were similar across the broilers fed diets of NK603 corn, parental corn, and reference lines of corn in study 2000-01-39-02 and comparable to literature values for Ross broiler strains (Table 1). Live weight at day 0 (g/bird or kg/pen), live weight at day 42 (g/bird or kg/pen), total feed intake (kg/bird or kg/pen) and feed efficiency (kg/kg) were similar across all treatments. Broilers fed diets containing NK603 corn had similar adjusted feed efficiency with its parental (B73HT x LH82) and one of the five reference lines (LH235 x LH185). Diets containing the other four reference corn lines had slightly poorer adjusted feed efficiencies (2.3% poorer than NK603).

Carcass measurements of live weight (kg), chill weight (kg or % of live weight), breast meat (% of chill wt.), thighs (kg or % of chill wt.), drums (kg or % of chill wt.), and wings (kg or % of chill wt.) were similar across treatments ($P>0.05$) and comparable to literature values for Ross broiler strains (Table 1). Expressed on a weight basis or percent chill weight, fat pad weights of the NK603 fed birds were not different from fat pad weights of birds fed the RX826 reference line. However, fat pad weight of the NK603

birds was slightly less than the parental line (34 vs. 37 g; 1.5 vs. 1.7% of chill weight for NK603 and the parental line, respectively) and four reference lines. These differences were within the range of literature values (24.2-63.2 g fat pad and 1.14-3.60% abdominal fat yield on a percent weight basis) reported in studies using Ross x Ross broiler strains (Smith, et al., 1998, Lei and Van Beek, 1997, Farran, et al., 2000, Esteve-Garcia and Llaurado, 1997, Kidd and Kerr, 1997, and Peak, et al., 2000). Breast meat weight of the birds fed the NK603 corn was not different between the parental or the five reference lines. However, the amount of breast meat weight from the birds fed the parental line was significantly less than birds fed diets containing three of the reference lines. However, all values fell within the reported literature ranges reported for breast meat yield of 0.225-0.551 kg using Ross x Ross broiler strains (Smith, et al., 1998, Lei and Van Beek, 1997, Esteve-Garcia and Llaurado, 1997, and Kidd and Kerr, 1997).

No differences were observed in the percentage of moisture, protein, and fat in breast meat or in the percentage of protein or fat in thigh meat across treatment diets. Percent moisture content of the thigh meat was similar between the diets of NK603, the parental line, and three of the reference lines. Birds fed two of the reference lines had thigh meat slightly higher (~1.0%) in moisture content compared to those fed the NK603 diet. There is no biological basis for the small differences observed.

No main treatment effect differences were observed for wing weight measurements between the diets of NK603, parental, or reference lines. Only when wing weight was expressed as percent of chill weight was a minor treatment by sex interaction significant. In this case, no differences were observed among the males fed the seven treatment diets. The percent wing weights of the females fed the NK603 corn (11.9%) was significantly different from diets of lines LH235 x LH185 (11.6%) and MON 847 (11.6%) but similar to diets of the other four reference lines.

6.0 Conclusion

The results of the broiler feeding study 2000-01-39-02 show that there were no biologically relevant differences in parameters tested between birds fed the Roundup Ready event NK603 and its parent, B73HT x LH82. In addition, when individual treatment comparisons were made, broilers in general performed and had similar carcass yield and meat composition with diets containing NK603, the parental control, or five commercially available reference lines. As a result, it was concluded that Roundup Ready corn line containing the NK603 event was as wholesome as its corresponding parental line and five commercially available reference lines regarding its ability to support the rapid growth of broiler chickens.

7.0 References

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Grey, T.C., Robinson, D., Jones, J.M., Stock, S.W., and Thomas, N.L. 1983. Effect of age and sex on the composition of muscle and skin from a commercial broiler strain. Brit. Poult. Sci. **24**: 219-231.

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Peak, S.D., Walsh, T.J., Benton, C.E., and Brake, J. 2000. Effects of two planes of nutrition on performance and uniformity of four strains of broiler chicks. J. Appl. Poulty Res. **9**: 185-194.

Smith, E.R., Pesti, G.M., Bakalli, R.I., Ware, G.O., and Menten, J.F.M. 1998. Further studies on the influence of genotype and dietary protein on the performance of broilers. Poult Sci. **77**:1678-1687.

National Research Council (NRC). 1994. Nutritional Requirements of Poultry, 9th revision.

Table 1. Performance of broilers, carcass yield and protein and fat composition of breast and thighs (mean values of males and females) Comparison of transgenic corn line NK603 with control and reference lines. CQR Project No. MN-00-3 (Monsanto Study No. 2000-01-39-02)

CQR Treatment ID	8	6	1	4	3	5	2				
Monsanto Corn ID	NK603	B73HT x LH82	RX826	LH235 x LH185	DK493	MON847	RX770	Treatments (T) SSD[1]	LSD[2] 5.0%	Historical Range[3]	Literature Range[4]
Performance											
Live weight (g/bird) day 0	38.183	38.417	38.500	38.100	38.383	38.333	38.250	NS	0.7970	NA	NA
Live weight (kg/pen) day 0	0.46	0.46	0.46	0.46	0.46	0.46	0.46	NS	0.009	NA	NA
Live weight (kg/bird) day 42	2.301	2.310	2.337	2.346	2.327	2.318	2.253	NS	0.0688	1.891-2.190	$1.79\text{-}2.43^{a\text{-}f}$
Live weight (kg/pen) day 42	22.770	22.850	23.370	22.720	22.760	22.480	22.530	NS	1.1087	14.73-21.90	NA
Feed intake (kg/bird)	3.547	3.586	3.694	3.706	3.689	3.667	3.543	NS	0.1318	NA	NA
Feed intake (kg/pen)	35.090	35.470	36.940	35.870	36.040	35.570	35.430	NS	1.4846	25.44-34.04	NA
Feed efficiency (kg/kg)	1.543	1.555	1.585	1.581	1.587	1.587	1.574	NS	0.0320	1.555-1.782	$1.60\text{-}2.07^{a,b,c,d}$
Adjusted Feed Efficiency (kg/kg)	1.528^{c}	1.546^{bc}	1.573^{a}	1.549^{bc}	1.556^{ab}	1.563^{ab}	1.563^{ab}	*	0.0240	1.545-1.724	NA
Carcass Yield											
Live weight (kg)	2.246	2.225	2.299	2.287	2.263	2.254	2.195	NS	0.0658	NA	NA
Chill weight (kg)	1.592	1.580	1.637	1.622	1.605	1.598	1.556	NS	0.0515	NA	NA
Chill weight (% of live weight)	70.90	71.00	71.20	70.90	70.90	70.90	70.80	NS	0.4600	NA	$67.1\text{-}76.0^{a,c,d,e}$
Fat pad weight (kg)	0.034^{b}	0.037^{a}	0.036^{ab}	0.039^{a}	0.039^{a}	0.037^{a}	0.037^{a}	*	0.0028	0.0337-0.0441	$0.0242\text{-}0.0632^{a\text{-}f}$
Fat pad weight (% of live weight)	1.5^{c}	1.7^{ab}	1.6^{bc}	1.7^{a}	1.7^{a}	1.7^{ab}	1.7^{ab}	**	0.1100	1.80-2.18	$1.14\text{-}3.60^{a\text{-}f}$
Breast meat weight (kg)	0.407^{abcd}	0.394^{d}	0.423^{a}	0.415^{ab}	0.413^{abc}	0.404^{bcd}	0.394^{cd}	*	0.0183	NA	$0.225\text{-}0.551^{a,b,d,e}$
Breast meat weight (% of chill wt.)	25.50	24.90	25.80	25.60	25.70	25.30	25.30	NS	0.5400	NA	$11.19\text{-}32.62^{a,d,e}$
Thighs weight (kg)	0.279	0.275	0.282	0.277	0.274	0.276	0.268	NS	0.0101	NA	$0.258\text{-}0.318^{e,f}$
Thighs weight (% of chill wt.)	17.50	17.40	17.20	17.10	17.10	17.30	17.20	NS	0.2900	NA	$12.80\text{-}20.65^{e,f}$
Drums weight (kg)	0.227	0.224	0.231	0.227	0.225	0.227	0.223	NS	0.0074	NA	0.213^{f}
Drums weight (% of chill wt.)	14.30	14.20	14.10	14.00	14.00	14.20	14.30	NS	0.2500	NA	10.50^{f}
Wings weight (kg)	0.186	0.185	0.191	0.188	0.187	0.185	0.182	NS	0.0055	NA	0.170^{f}
Wing weight (% of chill wt.)	11.70	11.80	11.70	11.60	11.70	11.60	11.70	NS	0.1400	NA	8.40^{f}

(continued)

Table 1. (con't.) Performance of broilers, carcass yield and protein and fat composition of breast and thighs (mean values of males and females). Comparison of transgenic corn line NK603 with control and reference lines. CQR Project No. MN-00-3 (Monsanto Study No. 2000-01-39-02)

CQR Treatment ID	8	6	1	4	3	5	2				
Monsanto Corn ID	NK603	B73HT x LH82	RX826	LH235 x LH185	DK493	MON847	RX770	Treatments (T) SSD[1]	LSD[2] 5.0%	Historical Range[3]	Literature Range[4]
Breast Meat Analysis											
Moisture (%)	74.741	74.879	74.716	74.726	74.774	74.993	74.439	NS	0.4669	NA	72.7-74.3[g]
Protein (%, as is basis)	24.111	23.712	24.235	24.346	24.157	24.008	24.019	NS	0.5355	NA	22.9-24.3[g]
Fat (%, as is basis)	0.867	0.931	0.810	1.035	0.809	1.036	0.798	NS	0.1987	NA	0.770-1.80[g]
Thigh Meat Analysis											
Moisture (%)	75.894[bc]	75.752[c]	76.360[ab]	76.606[a]	76.293[ab]	76.804[a]	76.039[bc]	**	0.5203	NA	70.0-72.4[g]
Protein (%, as is basis)	21.061	20.502	21.161	21.133	21.025	20.659	21.339	NS	0.5538	NA	17.7-19.2[g]
Fat (%, as is basis)	2.455	2.311	1.966	1.847	2.139	1.833	2.153	NS	0.5661	NA	7.50-11.6[g]

[1] SSD, statistical significance of differences: NS, not significant; *, P<0.05; **, P<.01; Individual treatment means with the same superscript letter in the same row are not statistically different (P>0.05). [2] LSD, least significant difference between two means (P<0.05). [3] 38-42 day Monsanto studies numbered XX-97-252 (Ross x Arbor Acres) and XX-98-081 (Ross x Ross). [4] *a*) Smith, et al., 1998 (Ross x Ross); *b*) Lei and Van Beek, 1997 (Ross x Ross); *c*) Farran, et al., 2000 (Ross); *d*) Esteve-Garcia and Llaurado, 1997 (Ross); *e*) Kidd and Kerr, 1997 (Ross x Ross); *f*) Peak, et al., 2000 (Ross x Ross, Cobb x Cobb, and Ross x Cobb); and *g*) Grey, et al., 1983 (Ross).

Appendix 1

Colorado Quality Research Final Report, QA Statement, and Report Amendment

pp. 11-96

TABLE OF CONTENTS

Comparison of Broiler Performance When Fed Diets Containing Event NK 603, Parental Line or Commercial Corn

Project No. MN-00-3
(Monsanto Study No. 2000-01-39-02)

CQR FINAL REPORT

Project No. MN-00-3
(Monsanto Study No. 2000-01-39-02)

I. TITLE

Comparison of Broiler Performance When Fed Diets Containing Event NK 603, Parental Line or Commercial Corn

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STUDY DATES:

Starting Date:	July 12, 2000 (chicks placed – Day 0)
In-life Completion:	August 23, 2000 (day 42 - weights)
	August 24 & 25, 2000 (days 43 and 44 – processing)

II. OBJECTIVE

This study was conducted to evaluate the nutritional value of diets containing Event NK 603 corn, parental and commercial lines of corn on broiler performance and carcass yield. This study was conducted according to FDA Good Laboratory Practice (GLP) Regulations (21CFR Part 58). The data for MON 853 was not reported here (see Protocol Amendment No. 2). The Sponsor decided not to pursue MON 853 as a commercial candidate at this time.

III. MATERIALS AND METHODS

A. TESTING/SUPPORT FACILITIES

Facility	*Purpose*
Colorado Quality Research, Inc. 400 E. County Road 72 Wellington, CO 80549	Office, Test & Control Article Storage, Feed preparation, Archives Test Animal Housing
Agland, Inc. 260 Factory Road Eaton, CO 80615	Supplier of feed ingredients (except corn)
Monsanto Company 700 Chesterfield Parkway North St. Louis, Missouri 63198	Supplier of varieties of corn Identification of test and control articles
Covance 3301 Kinsman Blvd Madison, WI 53704 (608) 242-2615	Nutrient analysis of corn Amino acid, crude protein & moisture analysis of diets, Pesticide analysis of corn (FDA PAM 304 modified screen)
Dairy One Laboratory DHI Forage Analytical Lab 730 Warren Road Ithaca, NY 14850	Treatment Diets – nutrient assays (except amino acids)
Joelyn Knoll-Brown 3282 West County Road 72 Ft. Collins, CO 80524	Quality Assurance
Dr. Wayne McWard Global Poultry Consulting, Inc. 2602 Lindsey Grace Lane Buford, GA 30518	Nutrition consultant
Experiment Station Chemical Laboratories University of Missouri Room 4, Agriculture Building Columbia, MO 65211-7170 Dr. Thomas P. Mawhinney	Meat analysis (protein, fat, moisture)
Kevin Glenn Monsanto Company Mail Stop BB5B 700 Chesterfield Parkway North St. Louis, MO 63198	DNA analysis of meat
Romer Labs, Inc. 1301 Stylemaster Drive Union, Missouri 63084	Mycotoxin assays - corn

B. TEST & CONTROL ARTICLE

Test Articles	NK 603
Control Article	B73Ht x LH82 (parental control for NK 603)
Commercial controls	Non-genetically modified corn (commercial varieties) 1. RX 770 2. LH235 x LH185 3. RX 826 4. DK 493 5. MON 847 (commercially known as RX 670)

Information on growing conditions, herbicide application, harvest, storage and processing is available from Monsanto and is archived at Monsanto with the study file.

Classification:	Feed ingredient
Chain of Custody:	Monsanto provided the chain-of-custody records for each variety delivered.
Shipping:	Monsanto was responsible for shipping of the test and control articles. All products were shipped in compliance with existing regulations.
Storage Requirements:	Ambient temperature during shipment and upon storage at CQR, in a secure area
Method of Administration:	Orally via complete feed
Frequency of Administration:	*Ad libitum* for 42 days starting at receipt of chicks (approximately 1 day of age)
Justification:	Feed was the standard route of administration
Preparation Before Use:	The total quantity of the corn added to the feed was thoroughly mixed in the feed to assure uniform dispersion. Starter diets were crumbled and grower/finisher diets were pelleted.
Analyses:	Test and control articles were characterized by Monsanto under Monsanto Study Nos. 00-01-50-04 and 00-01-39-07.
Accounting:	All quantities of test & control article (corn) received, used and disposed of, were documented. Excess test and control products were disposed of according to the Sponsor's directions.

C. TEST SYSTEM

1. Justification:

Commercial broiler chickens were the target animals and feed is the standard route of administration.

2 Specifications:

Normal, healthy day-old chicks were obtained from Hoover's Hatchery for use in this test. All birds were received from the same hatchery at the same time. Birds were transported from the hatchery location to the test facility via commercial airlines and ground transportation.

Species	Chicken (*Gallus domesticus*)
Breed	Commercial broiler
Strain	Ross x Ross (high yield bird)
Sex	Male & Female (sexed)
Supplier	Hoover's Hatchery, Rudd, Iowa
Age	~1 day of age upon receipt (study day 0) 42 days of age at study end
Body weight range:	See Appendix Tables 1 & 2 for initial & final weights, respectively
Identification	Pen cards Birds were individually identified with wingbands prior to obtaining individual weights for yield data
Number of birds:	350 Males, 350 Females
Number of treatments:	7
Number of pens/treatment:	10 (5 pens of males and 5 pens of females)
Number of birds/pen:	10 (12 started and reduced to 10/pen at 7 days of age)
Number of birds/treatment:	100 (50 males, 50 females)
Total number of pens	70

Day 7:

On day 7, all birds within a pen were counted. If greater than 10 males or 10 females were present then extras were removed. If extras were present, any unthrifty birds were removed first to bring the count to 10/pen. If additional birds still needed to be removed, they were selected arbitrarily (i.e. the first bird within reach, etc.). Removed birds were killed by cervical dislocation. All removed birds were weighed and recorded. If a pen had less than

the required number of birds on Day 7, then birds from another pen (having greater than 10 birds) in the same gender group and same treatment were relocated to provided sufficient numbers. There were 25 mortalities during days 0 – 7. Additionally, 115 birds were removed on day 7. In addition, on day 7, one pen (Pen 22) had fewer than 10 birds and therefore, an extra bird from the respective sex and treatment group was placed in this pen to bring the count to 10 birds/pen.

IV. EXPERIMENTAL DESIGN

Treatments were assigned to pens using a randomized complete block design. Birds were assigned to the pens randomly according to CQR SOP B-10. Specific treatments were designated as follows. There were 8 treatments randomized to the test facility, however only 7 treatments are related to this study (Treatment 7 is not applicable to this report).

Treatment	Corn ID*	No. of Male Pens	No. of Female Pens	**No. of Males /Pen	**No. of Females /Pen	Total No. of Males	Total No. of Females	Total No. Birds/ Treatment
1	RX 826	5	5	10	10	50	50	100
2	RX 770	5	5	10	10	50	50	100
3	DK 493	5	5	10	10	50	50	100
4	LH235 x LH185	5	5	10	10	50	50	100
5	MON 847	5	5	10	10	50	50	100
6	B73Ht x LH82	5	5	10	10	50	50	100
8	NK 603	5	5	10	10	50	50	100
TOTAL		35	35			350	350	700

MON 847 is commercially known as RX 670.

*The test and control articles were assigned to a specific treatment group by the Study Director. The assignment was placed in the study file. Only the Study Director and Feed Mill Manager knew the treatment identification during the in-life phase of the study. Personnel conducting day-to-day management of birds were blinded to the treatment identification.

**Extra birds were started in each pen to compensate for losses incurred due to mortality, starve-outs, etc. during days 0-7. Any extra birds remaining were removed on Day 7. This is a standard practice for research trials when feed conversion and body weights are the primary study data. Mortality due to starve-outs and cull chicks commonly occur in chicken feeding trials.

V. FEED AND WATER

A. Corn - preparation and samples

supplied

? sprayed ε glyphosate apparently NO

The corn used in this study was subjected to analysis as directed in Monsanto's Study Nos. 00-01-50-04 and 00-01-39-07. Copies of the analysis results, received from Monsanto, are appended to this report. Assays for pesticides, nutrient composition, including amino acid analysis, were conducted by Covance Laboratory. Mycotoxin assays were conducted by Romer Labs. A copy of their results is appended to this report. The corn samples for analysis were submitted from the bulk grain lot and submitted to the Sponsor from the corn's point of origin. Subsequent sample submission to the labs for analysis was conducted by the Sponsor.

Corn was shipped to Colorado Quality Research, Inc. (CQR) in feed sacks, or other appropriate containers, contained on a pallet. Upon receipt CQR maintained the identity of the different varieties of corn and conducted procedures (SOP FM-2) to assure there was no crossover or cross-contamination among the different varieties. When grinding the corn, the corn was sampled (subsamples from several different sacks, or areas within a container, of each corn variety were collected and composited). The corn was sampled prior to and after grinding. Sample size was approximately 500 g. Samples were stored at CQR until the in-life phase of the study was completed, at which time the samples (before and after grinding samples) were sent to the Sponsor for long term storage.

The corn was ground at the CQR research feed mill using a Skyline Grinder. When possible, the commercial controls were ground first, followed by the control article and the test article last. Corn was ground through an ~¾ inch screen. The grinder was flushed (either by running commercial corn through the grinder and/or by blowing the grinder out with an air compressor) between each batch of corn that was being ground for this study (SOP FM-7). Each test and control article was labeled and packaged to preserve identity throughout the study. Labeling included Project No. and corn identification.

B. Treatment diets - formulation and preparation and samples

After the nutrient analyses of the corn varieties were completed, Dr. Wayne McWard of Global Poultry Consulting, Inc. formulated the diets based on the assay results of each corn line. The diets were formulated as shown below. Refer to the Experimental Design for the test or control corn assigned to each treatment. The complete printout of the diet formulations can be found in the appendix to this report.

Starter Diet Formulation

Ingredient	% of Each Ingredient in each of the Treatment Diets						
	1	2	3	4	5	6	8
Corn	56.34%	57.06%	55.17%	55.30%	58.44%	57.90%	57.10%
Soybean Meal	36.70%	36.15%	37.65%	37.55%	34.95%	35.40%	36.05%
Soy Oil	3.50%	3.40%	3.70%	3.70%	3.15%	3.25%	3.40%
Deflourinated Phosphate	1.85%	1.80%	1.85%	1.90%	1.85%	1.90%	1.80%
Limestone	0.70%	0.70%	0.70%	0.65%	0.70%	0.65%	0.75%
Salt	0.27%	0.28%	0.28%	0.27%	0.28%	0.27%	0.28%
DL-Methionine	0.24%	0.22%	0.25%	0.24%	0.24%	0.23%	0.23%
Choline Chloride-60%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
Trace Minerals	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
Vitamins	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
Sacox (coccidiostat)	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%

Grower/Finisher Diet Formulation

Ingredient	% of Each Ingredient in each of the Treatment Diets						
	1	2	3	4	5	6	8
Corn	61.80%	62.67%	60.58%	60.70%	64.23%	63.50%	62.70%
Soybean Meal	31.55%	30.90%	32.60%	32.45%	29.60%	30.10%	30.80%
Soy Oil	3.40%	3.25%	3.60%	3.60%	2.95%	3.10%	3.25%
Deflourinated Phosphate	1.75%	1.70%	1.70%	1.80%	1.70%	1.80%	1.70%
Limestone	0.60%	0.60%	0.60%	0.55%	0.60%	0.60%	0.65%
Salt	0.29%	0.30%	0.29%	0.28%	0.30%	0.29%	0.30%
DL-Methionine	0.25%	0.23%	0.27%	0.26%	0.25%	0.25%	0.24%
Choline Chloride-60%	0.11%	0.11%	0.10%	0.10%	0.12%	0.12%	0.11%
Trace Minerals	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
Vitamins	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
Lysine	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%
Sacox (coccidiostat)	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%

The formulated compositions of the starter and grower/finisher diets were as follows.

Starter Diets (see "Experimental Design" for corn ID associated with each Treatment No.)

Item[a]	Treatment Number						
	1	2	3	4	5	6	8
ME (Mcal/lb)	1399.73	1400.65	1399.86	1400.46	1399.91	1400.19	1400.40
Dig. Arginine %	1.4322	1.4096	1.4382	1.4298	1.3963	1.3979	1.4201
Dig. Lysine %	1.1718	1.1504	1.1906	1.1839	1.1427	1.1461	1.1677
Dig. Methionine %	0.5600	0.5558	0.5632	0.5632	0.5558	0.5546	0.5562
Dig. Met+cystine %	0.8613	0.8618	0.8593	0.8634	0.8602	0.8590	0.8615
Dig. Tryptophan %	0.2387	0.2374	0.2435	0.2419	0.2315	0.2327	0.2390
Dig. Threonine %	0.8018	0.8008	0.8058	0.8068	0.8076	0.7981	0.8005
Crude Protein %	21.98	21.99	21.98	21.98	21.98	21.99	21.99
Moisture %	12.33	12.36	12.28	12.28	12.41	12.39	12.35
Arginine %	1.5106	1.4863	1.5164	1.5075	1.4718	1.4741	1.4977
Lysine %	1.2386	1.2157	1.2579	1.2509	1.2083	1.2117	1.2344
Methionine %	0.5765	0.5732	0.5788	0.5792	0.5719	0.5708	0.5731
Met + Cystine %	0.9355	0.9387	0.9309	0.9365	0.9347	0.9334	0.9372
Tryptophan %	0.2525	0.2516	0.3444	0.2558	0.2449	0.2462	0.2531
Glycine %	0.9345	0.9235	0.9354	0.9309	0.9253	0.9213	0.9332
Threonine %	0.8504	0.8515	0.8494	0.8507	0.8527	0.8419	0.8445
Proline %	1.3192	1.3593	1.2704	1.3021	1.4020	1.3588	1.3410
Crude Fat %	4.9505	5.1125	5.2108	5.2077	5.3105	5.3393	5.4727
Crude Fiber %	2.2296	2.1772	2.2203	2.4456	2.4154	2.2230	2.2658
Ash %	3.9856	4.0484	4.0125	3.9693	3.8722	3.8260	4.1652
Calcium %	0.9515	0.9425	0.9634	0.9508	0.9522	0.9429	0.9524
Phosphorus – Total %	0.7267	0.7326	0.7368	0.6908	0.7339	0.7043	0.7304
Phosphorus – Avail. %	0.4510	0.4466	0.4541	0.4469	0.4534	0.4506	0.4459
Salt %	0.3850	0.3894	0.3864	0.3750	0.3890	0.3802	0.3889
Sodium %	0.2202	0.2191	0.2212	0.2192	0.2209	0.2202	0.2189
Potassium %	0.9595	0.9338	1.0060	0.9678	0.9163	0.9143	0.9627
Manganese ppm	135.68	136.07	136.65	136.77	134.99	135.86	136.24
Zinc ppm	126.52	127.92	129.05	125.37	127.84	126.62	128.11
Copper ppm	16.07	16.34	16.30	16.74	16.20	16.10	16.31
Selenium ppm	0.4664	0.4663	0.4667	0.4667	0.4657	0.4659	0.4661

[a] ME = metabolizable energy, cal = calories, Dig. = digestible, Met = methionine

Grower/Finisher Diets (see "Experimental Design" for corn ID associated with each Treatment No.)

Item[a]	Treatment Number						
	1	2	3	4	5	6	8
ME (Mcal/lb)	1424.92	1425.12	1425.45	1425.50	1425.19	1424.09	1424.87
Dig. Arginine %	1.2796	1.2535	1.2867	1.2760	1.2399	1.2411	1.2654
Dig. Lysine %	1.0384	1.0138	1.0594	1.0509	1.0140	1.0135	1.0330
Dig. Methionine %	0.5489	0.5412	0.5561	0.5518	0.5444	0.5433	0.5457
Dig. Met+cystine %	0.8271	0.8243	0.8287	0.8286	0.8260	0.8247	0.8280
Dig. Tryptophan %	0.2112	0.2096	0.2166	0.2145	0.2033	0.2045	0.2114
Dig. Threonine %	0.7225	0.7207	0.7271	0.7275	0.7287	0.7179	0.7205
Crude Protein %	19.95	19.95	19.96	19.94	19.63	19.95	19.95
Moisture %	12.47	12.51	12.43	12.43	12.58	12.53	12.51
Arginine %	1.3499	1.3218	1.3567	1.3455	1.3070	1.3089	1.3347
Lysine %	1.0986	1.0724	1.1202	1.1112	1.0729	1.0723	1.0932
Methionine %	0.5645	0.5577	0.5706	0.5667	0.5595	0.5585	0.5615
Met + Cystine %	0.8962	0.8964	0.8950	0.8966	0.8957	0.8941	0.8988
Tryptophan %	0.2238	0.2225	0.3247	0.2271	0.2153	0.2166	0.2243
Glycine %	0.8453	0.8325	0.8467	0.8408	0.8352	0.8303	0.8433
Threonine %	0.7679	0.7685	0.7671	0.7677	0.7704	0.7581	0.7609
Proline %	1.2324	1.2759	1.1794	1.2132	1.3241	1.2752	1.2559
Crude Fat %	4.9519	5.0926	5.2203	5.2166	5.2888	5.3529	5.4880
Crude Fiber %	2.1452	2.0875	2.1364	2.3823	2.3517	2.1370	2.1850
Ash %	3.6409	3.7075	3.6715	3.6263	3.5162	3.5178	3.8316
Calcium %	0.8698	0.8612	0.8678	0.8693	0.8555	0.8797	0.8702
Phosphorus – Total %	0.6902	0.6975	0.6926	0.6498	0.6895	0.6646	0.6951
Phosphorus – Avail. %	0.4274	0.4235	0.4219	0.4220	0.4211	0.4261	0.4227
Salt %	0.4044	0.4088	0.4058	0.3933	0.4086	0.3991	0.4083
Sodium %	0.2206	0.2195	0.2192	0.2192	0.2188	0.2204	0.2193
Potassium %	0.8695	0.8405	0.9208	0.8780	0.8220	0.8193	0.8724
Manganese ppm	134.12	134.54	135.20	135.31	133.37	134.31	134.73
Zinc ppm	124.97	126.49	127.75	123.70	126.44	125.06	126.70
Copper ppm	15.37	15.66	15.62	16.10	15.51	15.40	15.63
Selenium ppm	0.4633	0.4632	0.4638	0.4637	0.4628	0.4627	0.4631

[a] ME = metabolizable energy, cal = calories, Dig. = digestible, Met = methionine

Each treatment diet was assigned a code of 1, 2, 3, 4, 5, 6 or 8. Personnel involved in the day-to-day management of the birds were blinded to the treatment descriptions.

The only sources of dietary protein used in this study were corn and soybean meal and supplemental methionine and lysine. All test diets were formulated to contain approximately equal amounts of the first six dietary essential amino acids (methionine, cystine, lysine, arginine, tryptophan, threonine), calcium, available phosphorus (estimated from NRC values), sodium and chloride. All diets conformed with the industry standards and/or met or exceeded the nutritional recommendations set forth in the publication "Nutritional Requirements of Poultry, 9th revision" by the National Research Council, 1994. Salinomycin was used as a coccidiostat (Sacox-60 premix) at 60 g/ton in the feed to control coccidiosis. The diets did not contain any growth promotants or known contaminants that would interfere with the study objectives.

Treatment diets were mixed at the CQR feed mill according to the formulations provided by Dr. Wayne McWard. A 500 lb and 4000 lb capacity vertical mixer and a California Pellet Mill system were used to prepare the diets. Feed was pelleted through a 5 mm die with live steam addition. For each treatment, 500 lbs of starter and 1000 lbs of grower/finisher feed were mixed (except for T5, only 475 lbs starter and 950 lbs grower/finisher were mixed due to the amount of corn available). The starter was prepared and fed as crumbles and the grower/finisher was prepared and fed as pellets.

After the diets were pelleted, subsamples were collected from the cooler prior to final bagging of the feed (or concurrent with bagging the feed). Subsamples were composited, mixed and samples taken of about 300 g (3 samples) and 50 g (1 sample). The ~50 g sample was sent to Monsanto for line identification. A 300 g sample was sent to Covance for crude protein, moisture and amino acid analysis; one 300 g sample was sent to Dairy One Laboratory for nutrient analysis. The remaining 300 g sample was retained at CQR until the in-life phase of the study was completed, the sample was then sent to Monsanto for long-term storage.

C. Assays

The following is a summary of the assays conducted by specific labs. However, the assay labs may have conducted and reported additional assays if they were included as part of an "assay package". The treatment diets were not assayed for salinomycin.

The treatment diets (after pelleting or crumbling) were assayed as follows. Both the starter and grower/finisher diets were assayed (a total of 16 samples).

- Covance – amino acid profile (including tryptophan), moisture, crude protein
- Dairy One Laboratory – nutrient analysis as follows:

• crude protein by kjeldahl	• phosphorus
• moisture	• potassium
• fat	• sodium
• crude fiber	• chloride
• acid detergent fiber	• magnesium
• neutral detergent fiber	• sulfur
• ash	• zinc
• calcium	• iron
• carbohydrates	• manganese
	• copper

- Treatment diets were assayed by Monsanto for line identification.

All assays of the starter and grower/finisher treatment diets were conducted under CQR Project No. MN-00-3 (Monsanto Study No. 2000-01-39-02).

D. Water

A copy of Colorado Quality Research, Inc. research facility semi-annual water analyses is appended to this final report. The water source was from the Northern Colorado Water Association. A copy of the Northern Colorado Water Association yearly water analysis report is also appended to this report. The water analysis results show that the water was potable and suitable for human consumption.

VI. HOUSING AND MANAGEMENT

A. Housing

Assignment of treatments to pens was conducted using a computer (Excel) random numbers generator. The computer-generated assignment was as follows. See facility diagram in the appendix to this report.

Treatment	Pen Numbers	
	Female	Male
1	5, 24, 41, 51, 76	1, 26, 47, 56, 70
2	14, 25, 38, 63, 73	4, 30, 34, 54, 79
3	13, 23, 35, 60, 80	16, 19, 40, 62, 77
4	15, 18, 43, 53, 72	9, 17, 39, 64, 69
5	3, 22, 46, 52, 65	12, 32, 45, 49, 78
6	6, 20, 44, 57, 74	8, 27, 48, 58, 75
8	10, 29, 33, 59, 66	2, 31, 42, 50, 67

Birds were housed within an environmentally controlled facility in concrete floor pens (~5' x 3') providing ~0.9 ft^2 per bird. All birds were placed in clean pens containing approximately 4-5" of clean wood shavings. Lighting was via incandescent lights and a commercial lighting program was used as follows.

Bird ~ Age	Hours of Light
0 – 6 days	23
6 – 11 days	10
11 – 19 days	12
19 – 42 days	16

Environmental conditions for the birds (i.e. floor space, temperature, lighting, bird density, feeder and water space) were similar for all experimental groups.

In order to prevent bird migration, each pen was checked to assure no openings greater than 1 inch existed for approximately 14 inches in height between pens. To achieve this a double-mesh poultry wire and/or solid partition was in place for approximately the first ~14 inches from the floor between each pen.

B. Management

Vaccinations:

Birds were vaccinated for Mareks disease at the hatchery. Birds were vaccinated for Newcastle and Infectious Bronchitis, orally via the drinking water, at 7 days of age at the research facility. A record of the vaccination (vaccine type, lot no., expiration date) was maintained with the study records. No other vaccinations or treatments were administered during the study.

Water:

Water was provided *ad libitum* throughout the study via one hanging, ~14-inch diameter automatic bell drinker per pen. Drinkers were checked twice daily and cleaned as needed to assure a clean water supply to birds at all times.

Feed:

Feed was provided *ad libitum* throughout the study via one hanging, ~17-inch diameter tube feeder per pen. A chick feeder tray was also placed in each pen for the first 6 days. All birds were placed on their respective treatment diets upon receipt and diets were fed continuously for 42 days.

All feed added and removed from pens was weighed and recorded. The change from starter to grower/finisher diet was conducted at the same time for all pens. The starter diet was fed from days 1 – 20 and the grower/finisher diet was fed from day 20 to study end (day 42).

Daily observations:

The test facility, pens and birds were observed at least twice daily for general flock condition, lighting, water, feed, ventilation and unanticipated events. There were no abnormal conditions or abnormal behavior observed throughout the study period. The minimum-maximum temperature of the test facility was recorded once daily. Observations and temperatures were recorded on the House Observation Record.

Mortality:

Starting on day 0, any bird that was removed, found dead or was sacrificed was weighed and recorded on the pen mortality record. All mortalities were necropsied to determine the probable cause of death. Probable cause of death and necropsy findings were recorded on the pen mortality record. Over all treatments, the mortality averaged 1.4% for days 7 – 42. The majority of the mortality occurred with the male birds.

Body Weights:

Birds were weighed, by pen, on study day 0 (receipt of chicks) and at study end (day 42). Pens were selected and weighed in successive order within a block.

Weight Gains and Feed Conversion:

Performance data was summarized by average weight per bird on day 0 and 42. The average feed conversion was calculated for days 0 - 42 using the total feed consumption in a pen divided by the total weight of surviving birds. Adjusted feed conversion was calculated using the total feed consumption in a pen divided by the total weight of surviving birds and weight of birds that died or were removed from that pen.

Scales:

All scales used in preparation of feed and weighing of feed, birds and test and control articles were licensed by the State of Colorado. At each use, the scales were checked using standard weights according to CQR Standard Operating Procedures. A copy of the State scale inspection and license is provided in the appendix.

VII. PROCESSING – YIELD DATA AND SAMPLES FOR ANALYSIS

After the final weights were obtained, and after an approximately 12 hour feed withdrawal period, all birds from each pen were processed. The males were processed one day and the females the next day. Refer to SOP B-71 for detailed processing procedures.

1. Processing - yield data included the following (*=bone in, skin on).

   - Live weight (individual)

- Fat pad weight (individual)
- Chill weight (individual)
- Breast meat weight –skinless, boneless (individual)
- Wings* (individual)
- Thighs* (individual)
- Drums* (individual)

2. Processing - samples for analysis.

After the birds were cut up and parts were weighed, two birds from each pen were selected for collection of meat samples. The two birds were selected arbitrarily, i.e., for each pen the birds were sent through the processing line in no particular order and the meat was collected from birds in whatever order was convenient for the procedure.

Samples for analysis and retention were obtained from 2 different birds from each pen. One bird was used for analysis samples and the second bird was used for retention samples. From each bird used for analysis the breast (boneless, skinless) and both thighs (bone in, skinless) were collected. The breast was divided in half and each half placed in separate bags. The thighs were placed in separate bags. Only one thigh and one-half breast were collected if the bird was from the treatment fed the commercial corn. From the bird used for retention samples, the entire breast was placed in one bag and both thighs were placed in another bag. The samples were labeled with the CQR Project No., treatment number, pen number, bird number, sex, date of collection and either thigh or breast meat. The retention samples were kept frozen (~-20° C) at CQR until the initial samples were received, at which time the retention samples were sent to the Sponsor (Monsanto) for storage.

One-half breast and one thigh (nonfrozen, with wet ice) was sent to the University of Missouri for protein, fat and moisture analysis. One half breast and one thigh (frozen, with ice) was sent to Monsanto Company for DNA analysis. Only the samples from Treatment 5, 6 and 8 birds were collected for Monsanto for DNA analysis (see Protocol Deviation). A total of 70 breast samples and 70 thigh samples were sent to the University of Missouri for protein, fat and moisture analysis. A total of 30 breast and 30 thigh samples were sent to Monsanto Company for DNA analysis. The breast and thigh meat samples submitted to Monsanto for DNA analyses were for a different study. The samples were to be analyzed for plant DNA and protein under the direction of James Jennings, Product Characterization Center, Monsanto, as part of non-GLP studies. The results of the DNA analysis of the meat samples are not part of this study.

VIII. STATISTICAL ANALYSIS

The Sponsor conducted the statistical analyses of the data and their detailed procedures and results are provided in their report, which is included in the appendix to this report. The Sponsor provided the Study Director with the statistical analysis for incorporation into the final report.

Statistical analyses were performed on starting and final live weights, fat pad weight, chill weight, breast weight, wing weight, thigh weight, drum weight, fat pad as a percentage of live weight, percent chill weight (chill weight/live weight), percent breast weight (breast

weight/chill weight), percent wing weight (wing weight/chill weight), percent thigh weight (thigh weight/chill weight), percent drum weight (drum weight/chill weight), feed consumption, feed efficiency, adjusted feed efficiency. Statistical analyses were also performed on moisture, protein, and fat for breast and thigh meat samples. Since the pens were set up as a randomized complete block experimental design with the diet treatments in each of 5 replicated blocks of pens, the standard randomized block analysis of variance (ANOVA) statistical model was used to analyze the data. Means were compared to each other at the 5% level of significance. An additional analysis was done to compare the fit of Roundup Ready® corn to the population of responses from the reference varieties. That is, were the responses obtained from animals in the Roundup Ready® group consistent with the expected variation of responses of animals fed the other corn varieties. This analysis was carried out using a linear mixed model procedure in SAS; comparisons were made at the 5% level of significance.

IX. DISPOSITIONS

Excess Test and Control Article, Duplicate meat samples

An accounting of all corn received and used was documented. Any corn not used to mix the complete feed was disposed of by burial at a local commercial landfill, or was used or discarded as directed by the Sponsor. Retention corn samples were sent to the Sponsor for archival at study end. The retention duplicate meat samples were sent to the Sponsor at study end.

Feed

An accounting was maintained of all treatment diets. The amount mixed, used and discarded was documented. Unused feed was disposed of by placing into a dumpster for commercial transport to a local landfill for burial. Retention feed samples were sent to the Sponsor for archival at study end.

Test Animals

An accounting was maintained of all birds received for the study. All surviving birds were sacrificed at study end for processing data. All mortalities and removed birds and the carcasses and meat from birds processed at study end were disposed of by placing into a dumpster for commercial pick up and transport to a local landfill for burial.

Records and Report

Audited data was sent to the Sponsor for statistical analyses. After the statistician's signed report was received from the Sponsor, a signed final report, including all information required by FDA GLP regulations was prepared by the Study Director and sent to the Sponsor. Any further revision to the report will be documented as Report Amendment(s).

All records on the study are being kept for 5 years at the CQR archives. An exact copy of all records and the report are stored in the CQR archives at 400 East County Road 72, Wellington, Colorado. The original records and report have been sent to the Sponsor. The Sponsor has been provided with an electronic copy of the data.

X. CONDUCT OF STUDY AND TEST MONITORING

This study was conducted in accordance with this protocol, protocol amendments and protocol deviation and CQR Standard Operating Procedures. This study was conducted in compliance with the Food and Drug Administration's "Good Laboratory Practice Regulations for Nonclinical Laboratory Studies" (21CFR, Part 58), and monitored for such compliance by Joelyn Knoll-Brown, Quality Assurance Officer. Specific items that were not conducted under GLP were: nutrient assays at Dairy One Laboratory; Covance assays of treatment diets (amino acids, moisture and protein), semi-annual water analysis; Agland ingredient preparation, Global Poultry Consulting, Inc. diet formulations and yearly scale licensing by the State of Colorado. If this study is reviewed by the FDA, the Study Director will immediately notify the Study Monitor.

XI. PERSONNEL

Key personnel involved in this study were as follows:

Sponsor Monitor	Mary L. Taylor
Test Facility Management	Patrick Weston
Sponsor Representative	Dr. Gary F. Hartnell
CQR Management	Carey L. Quarles, Ph.D.
Study Director	Beverly George, Ph.D.
Research Farm Director	David C. Doerr, M.S.
Research Technician	Becky Alps, B.S.
Research Technician	Charles Ashlock, B.S.
Research Technician	Douglas Rice
Research Technician	Gabriel Yanez
Processing Supervisor	William Adrian, Ph.D.
Quality Assurance Officer	Joelyn Knoll-Brown
Nutritionist	Wayne McWard, Ph.D.
Processing	Brenda Moody
Processing	Joan Ritchie
Processing	Stephen Kerr, DVM
Processing	Dennis Madden, B.S.
Processing	Danny Walker, Ph.D.
Processing	Terry Spraker, DVM
Processing	Gene Schoonveld, M.S.
Processing	Elsa Adrian

XII. RESULTS AND CONCLUSION

Results

Ground corn assay results are presented in Table 1 and 2. No unusual values were reported. The levels of fumonisin reported for the corn in Table 2 were very low (<1 ppm) and considered insignificant. The assay results of the starter and grower/finisher treatment diets are presented in Tables 3 and 4 respectively. The line identifications of the corn grain and treatment diets were confirmed as expected at Monsanto and are archived under study numbers 00-01-50-04, 00-01-39-07 and 2000-01-39-02. The nutrient assay results for the starter and grower/finisher diets met industry standards based on a review conducted by a consultant nutritionist Dr. McWard of Global Poultry Consulting, Inc. (former Director of Nutrition and Research, Continental Grain Company). A few assay values were slightly above or below NRC values, but this was attributed to assay method variability and the different moisture level of the various diets and not to the corn lines specifically.

Individual pen and/or individual bird data for the study are presented in the Appendix Tables. A summary of the statistical analysis of the data is presented in Table 5 of this report.

Expected chick mortality related to starve-outs, dehydration, or generally being unthrifty was observed during the first 7 days of the study. This mortality was randomly distributed among all groups without any relationship to treatment and occurs commonly in chicks in commercial feeding trials. During the remainder of the study, pen sizes were normalized to a maximum of 10 birds/pen. The birds that died from day 7 to study termination were randomly distributed among different groups without any specific relationship to treatment (deaths per treatment group averaged 1.14% and ranged from 0% to 3% across all treatment groups). Most of the apparent causes of death were identified at necropsy and occur commonly in chickens (sudden death syndrome and ascites). The birds in all groups were in good health based on twice daily pen observations. The starting and final body weights of the chicks were normal and the average pen body weights were comparable between groups.

All performance parameters measured were similar (P>0.05) among the broilers fed diets NK 603 corn, parental and reference lines of corn. Live weights at day 0 (g/bird or kg/pen), live weights at day 42 (g/bird or kg/pen), total feed intake (kg/bird or kg/pen) and feed efficiency (kg/kg) were similar among all treatment groups. Broilers fed diets containing NK 603 corn had similar adjusted feed efficiency with its parental (B73HT x LH82) and one of the five commercial lines (LH235 x LH185). The other four commercial corn lines had significantly poorer adjusted feed efficiencies (2.3% higher than NK 603)(P<0.05).

Carcass measurements of live weight (kg), chill weight (kg or % of live weight), breast meat (% of chill wt.), thighs (kg or % of chill wt.), drums (kg or % of chill wt.), and wings (kg or % of chill wt.) were similar across treatment (P>0.05). Expressed on a weight basis or percent chill weight, fat pad weight of the NK 603 fed birds was not different from the RX 826 reference line. However fat pad weight of the NK 603 birds was slightly less (P<0.05) than the parental line (34 vs. 37 g; 1.5 vs. 1.7% of chill weight for NK 603 and the parental line, respectively) and four reference lines. Breast meat weight of the birds fed the NK 603 corn was not different between the parental or the five commercial lines. However,

the amount of breast meat from the birds fed the parental line (B73HT x LH82) was significantly less than birds fed diets containing three of the commercial lines.

No differences were observed in the percentage of moisture, protein, and fat in breast meat or in the percentage of protein or fat in thigh meat from birds across treatment diets. Percent moisture content of the thigh meat was similar between the NK 603, the parental line, and three of the reference lines. Birds fed two of the reference lines had breast meat slightly higher (~1.0%) in moisture content (7%) compared to the NK 603 diet ($P<0.05$). There is no biological basis for the small differences observed.

No main treatment effect differences were observed for wing weight measurements between the diets of NK 603, parental, or reference lines. Only when wing weight was expressed as percent of chill weight was a minor treatment by sex interaction significant. In this case, no differences were observed among the males fed the seven treatment diets. The percent wing weight of the females fed the NK 603 corn (11.9%) was significantly different from diets of lines LH235 x LH185 (11.6%) and MON 847 (11.6%) but similar to diets of the other four reference lines.

Conclusion

All performance parameters measured were similar ($p>0.05$) across the broilers fed diets of NK 603 corn, parental corn, and reference lines of corn. In addition, broilers fed diets containing NK 603 corn had similar adjusted feed efficiency to the parental (B73HT x LH82) and one of the five commercial lines (LH235 x LH185). The other four commercial corn line diets had slightly poorer adjusted feed efficiencies.

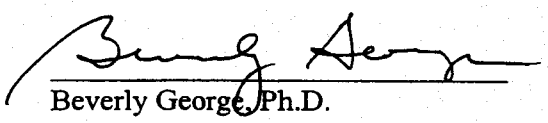
In addition, carcass measurements of live weight, chill weight, breast meat (when expressed as percent of chill weight), thighs, drums, and wings were similar across treatments ($p>0.05$). Expressed on a weight basis or percent of chill weight, fat pad weights of the NK 603 fed birds were not different from the fat pad weights of birds fed the RX 826 reference line. However, fat pad weights of the birds fed NK 603 diets were slightly less (significance of $p<0.05$) than the parental line and four reference lines. Breast meat measurements of birds fed the NK 603 corn were not different from the parental or the five commercial lines. However, the amount of breast meat from the birds fed the parental line was significantly less than for birds fed three of the commercial lines.

The results of this study show that there were no biologically relevant differences in parameters tested between birds fed the Roundup Ready® event NK 603 and its parent, B73HT x LH82. In addition, when individual treatment comparisons were made, broilers in general performed and had similar carcass yield and meat composition with diets containing NK 603, the parental control, or five commercial reference lines. Therefore, it was concluded that Roundup Ready® corn line containing the NK 603 event was as wholesome as its corresponding parental line and five commercial lines regarding its ability to support the rapid growth of broiler chickens.

XIII. STUDY DIRECTOR'S COMMENTS/CERTIFICATION STATEMENT

No adverse effects were observed. There were no known circumstances that may have affected the data quality or integrity. There were no unanticipated events observed during the study. The birds in this study performed as expected. All body weight, feed conversion, and yield data were within normal ranges for broilers of this age.

I, Dr. Beverly George, Study Director, attest that Study No. MN-00-3 (Monsanto No. 2000-01-39-02) was conducted according to the Protocol, Protocol Amendments and Protocol Deviation and that the data were collected and recorded in accordance with the applicable Food and Drug Administration, Center for Veterinary Medicine (CVM) Guidelines.



Beverly George, Ph.D.
Study Director

2-1-01
Date

XV. LISTING OF REPORT APPENDICES

Tables & Graphs

Table 1. Day 0 body weights (7/12/00)
Table 2. Performance data at 42 days of age (8/23/00)
Table 3. Summary of mortality and probable cause of death from 7-42 days of age
Table 4. Feed added, and weighed back, by pen
Table 5. Moisture, protein and fat analysis of chicken thighs ('as-is' basis)
Table 6. Moisture, protein and fat analysis of chicken breasts ('as-is' basis)
Table 7. Individual mortality weights, date and study day of death
Table P1. Summary, by pen, of processing data at 43 & 44 days of age (8/24 & 8/25/00)
Table P2. Individual male bird processing data at 43 days of age (8/24/00)
Table P3. Individual female bird processing data at 44 days of age (8/25/00)
Graph G1. Summary of Day 7-42 mortality, by sex
Graph G2. Summary of Day 42 Treatment Average Bird Weight and Adjusted Feed Conversion
Graph G3. Summary of Day 43 and Day 44 Processing Data – Male & Female combined
Graph G4. Summary analysis of thigh meat samples – Male & Female combined
Graph G5. Summary analysis of breast meat samples – Male & Female combined

Quality Assurance Statement – CQR

Supporting Reports

Test and Control Articles (Corn)

- Receipt & accounting
- Grinding
- Assay reports and sample submission records

Personnel, facility, protocol

- Protocol, Protocol Amendments, SOP Deviation
  w/ facility diagram with treatment assignment to pens
- Personnel signature list
  w/ documentation of involved personnel
- Applicable SOPs
- Misc. – Notes to File, Correspondence, NRC table, Weather reports

Diets

- Diet code and formulations
- Mixing records, feed accounting summary and disposition
- Assay reports and sample submission records
- Global Poultry Consulting – diet formula printouts

Test Birds

- Receipt, accounting, disposition

Scale Check Records, State Scale License, Water Assay Report

Data

- Body Weights
- Feed Added and Weighed Back
- Mortality/Necropsy
- Daily logs, house observation/temperature
- Processing – yield data
- Processing – assay results of breast & thigh meat samples

XIV. LISTING OF DATA TABLES

Table 1. Pesticide, nutrient and amino acid assays of corn (as-is basis). CQR Project No. MN-00-3 (Monsanto 2000-01-39-02)

CQR Treatment ID	**1**	**2**	**3**	**4**	**5**	**6**	**8**
Monsanto Corn ID	**RX826**	**RX770**	**DK 493**	**LH235 x LH185**	**MON847**	**B73HT x LH82**	**NK603**
Covance Lab ID	**00105823**	**00401502**	**00105818**	**00600599**	**00401499**	**00600602**	**00600597**
Pesticides (ppm)							
Organophosphates	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Organonitrogens	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Organochlorinated	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
N-Methylcarbamates	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Nutrients (%)							
Crude protein	7.85	8.45	7.22	7.50	9.11	8.84	8.53
Moisture	12.3	10.30	11.6	9.26	11.5	11.4	10.1
Total fat	2.37	2.80	2.53	2.52	3.50	3.41	3.43
Ash	1.10	1.25	1.06	1.10	1.05	1.03	1.38
Carbohydrates	76.4	77.20	77.6	79.6	74.8	75.3	76.6
Neutral Detergent Fiber (%)	7.94	8.82	9.21	13.00	14.60	10.70	8.97
Acid Detergent Fiber (%)	2.48	3.11	2.34	2.99	4.53	3.00	3.07
Crude Fiber (%)	1.71	1.63	1.67	2.08	2.07	1.73	1.79
Minerals							
Calcium, %	0.0310	0.0441	0.0482	0.0332	0.0403	0.0288	0.0285
Magnesium, %	0.957	1.110	1.080	0.715	1.120	0.851	1.050
Phosphorus, %	2.75	3.04	2.88	1.89	2.97	2.28	3.01
Potassium, %	3.33	3.30	3.88	3.22	3.10	2.93	3.58
Sodium, %	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Sulfur (%)	0.076	0.097	0.069	0.058	0.088	0.073	0.071
Chloride (%)	0.060	0.047	0.056	0.075	0.054	0.058	0.055
Copper, ppm	1.14	1.73	1.31	2.13	1.75	1.49	1.71
Iron, ppm	16.0	31.6	13.8	16.1	51.8	18.9	19.7
Manganese, ppm	4.83	5.80	6.09	6.35	4.54	5.81	6.15
Zinc, ppm	16.2	18.9	20.3	13.7	19.3	17.0	19.3

Table 1. Pesticide, nutrient and amino acid assays of corn (as-is basis). CQR Project No. MN-00-3 (Monsanto 2000-01-39-02)

CQR Treatment ID	**1**	**2**	**3**	**4**	**5**	**6**	**8**
Monsanto Corn ID	**RX826**	**RX770**	**DK 493**	**LH235 x LH185**	**MON847**	**B73HT x LH82**	**NK603**
Covance Lab ID	**00105823**	**00401502**	**00105818**	**00600599**	**00401499**	**00600602**	**00600597**
Amino Acids (mg/g)							
Aspartic Acid	5.30	5.41	5.08	5.20	6.67	5.97	5.86
Threonine	2.72	3.05	2.54	2.66	3.36	3.05	2.96
Serine	3.67	4.15	3.43	3.49	4.53	4.25	4.07
Glutamic Acid	14.5	16.30	13.00	13.80	19.1	17.00	16.20
Proline	7.50	8.56	6.38	7.18	9.52	8.65	8.28
Glycine	3.20	3.24	2.95	2.97	3.59	3.39	3.46
Alanine	5.92	6.51	5.27	5.61	7.43	6.99	6.63
Cystine	1.77	1.98	1.51	1.72	2.01	1.97	1.97
Valine	4.09	4.32	3.63	3.91	4.83	4.44	4.34
Methionine	1.61	2.00	1.30	1.54	1.70	1.73	1.83
Isoleucine	2.82	3.11	2.53	2.77	3.56	3.28	3.22
Leucine	9.72	11.40	8.49	9.11	12.90	11.20	10.80
Tyrosine	2.59	3.09	2.48	2.58	3.46	3.04	2.88
Phenylalanine	3.74	4.25	3.42	3.70	4.93	4.47	4.32
Histidine	2.56	2.73	2.13	2.35	2.94	2.52	2.52
Lysine	2.58	2.49	2.49	2.47	2.90	2.75	2.89
Arginine	3.91	3.86	3.51	3.49	4.21	4.01	4.14
Tryptophan	0.506	0.559	0.509	0.498	0.554	0.529	0.597

mg/g = mg per g of corn

Table 2. Mycotoxin assays of corn (as-is basis). CQR Project No. MN-00-3 (Monsanto 2000-01-39-02)

CQR Treatment ID		**1**	**2**	**3**	**4**	**5**	**6**	**8**
Monsanto Corn ID		**RX826**	**RX770**	**DK 493**	**LH235 x LH185**	**MON847**	**B73HT x LH82**	**NK603**
Assayed by **Romer Labs**	Detection Limit & Units							
Aflatoxin B1	1.0 ppb	ND	ND	ND	ND	ND	ND	ND
Aflatoxin B2	1.0 ppb	ND	ND	ND	ND	ND	ND	ND
Aflatoxin G1	1.0 ppb	ND	ND	ND	ND	ND	ND	ND
Aflatoxin G2	1.0 ppb	ND	ND	ND	ND	ND	ND	ND
Ochratoxin A	5 ppb	ND	ND	ND	ND	ND	ND	ND
Citrinin	0.2 ppm	ND	ND	ND	ND	ND	ND	ND
T-2 Toxin	0.1 ppm	ND	ND	ND	ND	ND	ND	ND
HT-2 Toxin	0.1 ppm	ND	ND	ND	ND	ND	ND	ND
Diacetoxyscirpenol	0.3 ppm	ND	ND	ND	ND	ND	ND	ND
Neosolaniol	0.5 ppm	ND	ND	ND	ND	ND	ND	ND
Fusarenon X	0.5 ppm	ND	ND	ND	ND	ND	ND	ND
Deoxynivaienol	0.1 ppm	ND	ND	ND	ND	ND	ND	ND
15 Acetyl-DON	0.1 ppm	ND	ND	ND	ND	ND	ND	ND
3 Acetyl-DON	0.1 ppm	ND	ND	ND	ND	ND	ND	ND
Nivalenol	0.5 ppm	ND	ND	ND	ND	ND	ND	ND
Zearalenone	100 ppb	ND	ND	ND	ND	ND	ND	ND
Fumonisin B1	0.1 ppm	0.30	0.60	0.20	ND	1.50	0.10	0.10
Fumonisin B2	0.1 ppm	ND	0.20	ND	ND	0.50	ND	ND
Fumonisin B3	0.1 ppm	ND	ND	ND	ND	ND	ND	ND

ND = none detected

Table 3. Nutrient composition of the starter diets (as-is basis). CQR Project No. MN-00-3 (Monsanto 2000-01-39-02)

CQR Treatment ID **Monsanto Corn ID**	**1** **RX826**	**2** **RX770**	**3** **DK 493**	**4** **LH235 x LH185**	**5** **MON847**	**6** **B73HT x LH82**	**8** **NK603**
Moisture, %	10.0	10.4	10.2	9.5	10.1	9.8	9.8
Crude protein, %	21.7	21.1	21.9	20.8	20.7	21.5	21.4
Crude fat, %	5.7	6.0	5.8	6.2	5.8	6.4	6.3
Ash, %	5.90	5.76	5.73	5.56	6.10	5.90	5.66
Acid detergent fiber, %	3.9	3.7	3.2	6.6	3.3	2.9	3.1
Neutral detergent fiber, %	9.1	10.6	9.6	10.1	8.2	7.9	9.0
Crude fiber, %	2.3	2.3	2.1	2.3	2.4	2.4	2.2
Carbohydrates (starch), %	37.6	39.2	36.2	39.7	37.7	38.9	38.4
Calculated TDN, %	75	75	75	76	76	77	77
Calculated ME, (Mcal/lb)	1399.73	1400.65	1399.86	1400.46	1399.91	1400.19	1400.40
Calcium, %	0.85	0.85	0.90	0.98	1.02	0.98	0.90
Phosphorus, %	0.79	0.75	0.79	0.82	0.86	0.84	0.78
Magnesium, %	0.19	0.19	0.20	0.19	0.19	0.19	0.18
Potassium, %	1.20	1.17	1.14	1.26	1.21	1.24	1.15
Sodium, %	0.244	0.254	0.249	0.271	0.271	0.276	0.261
Sulfur, %	0.24	0.26	0.25	0.24	0.25	0.25	0.25
Chloride, %	0.22	0.22	0.24	0.24	0.27	0.24	0.24
Iron, ppm	304	305	317	328	371	347	291
Zinc, ppm	110	116	122	113	111	114	108
Copper, ppm	17	16	21	16	19	18	16
Manganese, ppm	129	134	139	142	135	140	132
Aspartic Acid, %	2.300	2.040	2.170	2.100	2.170	2.190	2.320
Threonine, %	0.771	0.700	0.727	0.707	0.737	0.744	0.786
Serine, %	1.010	0.892	0.935	0.906	0.951	0.959	0.998
Glutamic Acid, %	3.970	3.620	3.710	3.670	3.930	3.970	4.070
Proline, %	1.340	1.220	1.230	1.240	1.330	1.370	1.360
Glycine, %	0.925	0.827	0.862	0.837	0.859	0.870	0.951
Alanine, %	1.090	1.010	1.020	1.030	1.110	1.120	1.140
Cystine, %	0.324	0.327	0.360	0.301	0.379	0.351	0.360
Valine, %	1.140	1.030	1.060	1.050	1.090	1.090	1.160
Methionine, %	0.524	0.541	0.622	0.482	0.580	0.569	0.578
Isoleucine, %	1.000	0.903	0.933	0.918	0.956	0.975	1.010
Leucine, %	1.880	1.770	1.750	1.760	1.940	1.970	1.940
Tyrosine, %	0.514	0.452	0.542	0.651	0.674	0.485	0.518
Phenylalanine, %	1.070	0.981	1.000	0.998	1.050	1.070	1.090
Histidine, %	0.606	0.560	0.551	0.557	0.592	0.578	0.595
Lysine, %	1.380	1.220	1.220	1.220	1.240	1.190	1.340
Arginine, %	1.320	1.190	1.250	1.280	1.330	1.270	1.350
Tryptophan, %	0.211	0.201	0.211	0.198	0.190	0.204	0.212

Table 4. Nutrient composition of the grower/finisher treatment diets (as-is basis). CQR Project No. MN-00-3 (Monsanto No. 2000-01-39-02)

CQR Treatment ID	**1**	**2**	**3**	**4**	**5**	**6**	**8**
Monsanto Corn ID	**RX826**	**RX770**	**DK 493**	**LH235 x LH185**	**MON847**	**B73HT x LH82**	**NK603**
Moisture, %	11.0	10.5	11.1	9.8	10.3	10.0	10.7
Crude protein, %	19.6	19.6	19.9	19.5	19.7	20.0	20.5
Crude fat, %	5.9	5.9	6.5	5.8	5.5	5.5	6.0
Ash, %	5.53	5.35	5.21	5.14	5.14	5.20	5.53
Acid detergent fiber, %	4.4	4.0	4.7	3.6	4.7	4.5	3.0
Neutral detergent fiber, %	8.5	8.8	7.4	8.8	9.5	7.6	8.3
Crude fiber, %	2.1	2.1	2.2	2.3	2.0	1.9	2.1
Carbohydrates (starch), %	40.7	41.6	39.9	41.6	41.2	41.4	39.0
Calculated TDN, %	75	76	77	77	75	76	76
Calculated ME, (Mcal/lb)	1424.92	1425.12	1425.45	1425.50	1425.19	1424.09	1424.87
Calcium, %	0.79	0.80	0.76	0.76	0.77	0.76	0.82
Phosphorus, %	0.74	0.77	0.72	0.70	0.75	0.71	0.74
Magnesium, %	0.19	0.19	0.20	0.18	0.20	0.18	0.18
Potassium, %	1.10	1.07	1.11	1.02	1.02	1.05	1.11
Sodium, %	0.242	0.259	0.256	0.257	0.246	0.243	0.274
Sulfur, %	0.23	0.24	0.23	0.22	0.23	0.23	0.23
Chloride, %	0.25	0.24	0.23	0.26	0.19	0.25	0.28
Iron, ppm	297	298	284	306	341	296	295
Zinc, ppm	115	111	109	112	108	103	109
Copper, ppm	16	18	15	19	16	17	16
Manganese, ppm	127	132	130	127	126	126	132
Aspartic Acid, %	2.000	1.920	1.980	1.990	1.850	1.910	2.070
Threonine, %	0.687	0.673	0.671	0.682	0.657	0.658	0.697
Serine, %	0.886	0.882	0.867	0.874	0.855	0.865	0.911
Glutamic Acid, %	3.520	3.480	3.400	3.520	3.500	3.500	3.680
Proline, %	1.180	1.240	1.140	1.200	1.260	1.210	1.260
Glycine, %	0.819	0.793	0.811	0.836	0.763	0.793	0.841
Alanine, %	1.010	1.010	0.960	1.000	1.020	1.020	1.040
Cystine, %	0.344	0.343	0.337	0.345	0.338	0.324	0.349
Valine, %	1.010	0.986	0.977	1.010	0.965	0.977	1.020
Methionine, %	0.540	0.541	0.599	0.600	0.514	0.526	0.534
Isoleucine, %	0.865	0.842	0.845	0.880	0.835	0.842	0.894
Leucine, %	1.710	1.720	1.620	1.710	1.800	1.750	1.790
Tyrosine, %	0.478	0.581	0.601	0.489	0.425	0.613	0.628
Phenylalanine, %	0.944	0.920	0.926	0.953	0.927	0.930	0.978
Histidine, %	0.538	0.530	0.513	0.531	0.515	0.510	0.527
Lysine, %	1.150	1.090	1.160	1.160	1.000	1.030	1.170
Arginine, %	1.170	1.150	1.160	1.120	0.997	1.140	1.170
Tryptophan, %	0.195	0.193	0.181	0.199	0.180	0.174	0.186

Table 5. Performance of broilers, carcass yield and protein and fat composition of breast and thighs (mean values of males and females).
Comparison of transgenic corn line NK603 with six reference lines. Project No. MN-00-3 (Monsanto Study No. 2000-01-39-02)

CQR Treatment ID Monsanto Corn ID	8 NK603	6 B73HT x LH82	1 RX826	4 LH235 x LH185	3 DK493	5 MON847	2 RX770	reatment (T) SSD[1]	Sex (S) SSD	Block SSD	T x S SSD	LSD[2] 5.0%
Performance												
Live weight (g/bird) day 0	38.183	38.417	38.500	38.100	38.383	38.333	38.250	NS	NS	*	NS	0.7970
Live weight (kg/pen) day 0	0.46	0.46	0.46	0.46	0.46	0.46	0.46	NS	NS	*	NS	0.009
Live weight (kg/bird) day 42	2.301	2.310	2.337	2.346	2.327	2.318	2.253	NS	**	*	NS	0.0688
Live weight (kg/pen) day 42	22.770	22.850	23.370	22.720	22.760	22.480	22.530	NS	**	NS	NS	1.1087
Feed intake (kg/bird)	3.547	3.586	3.694	3.706	3.689	3.667	3.543	NS	**	*	NS	0.1318
Feed intake (kg/pen)	35.090	35.470	36.940	35.870	36.040	35.570	35.430	NS	**	**	NS	1.4846
Feed efficiency (kg/kg)	1.543	1.555	1.585	1.581	1.587	1.587	1.574	NS	**	NS	NS	0.0320
Adjusted Feed Efficiency (kg/kg)	1.528^{c}	1.546^{bc}	1.573^{a}	1.549^{bc}	1.556^{ab}	1.563^{ab}	1.563^{ab}	*	**	*	NS	0.0240
Carcass Yield												
Live weight (kg)	2.246	2.225	2.299	2.287	2.263	2.254	2.195	NS	**	*	NS	0.0658
Chill weight (kg)	1.592	1.580	1.637	1.622	1.605	1.598	1.556	NS	**	*	NS	0.0515
Chill weight (% of live weight)	70.90	71.00	71.20	70.90	70.90	70.90	70.80	NS	*	*	NS	0.4600
Fat pad weight (kg)	0.034^{b}	0.037^{a}	0.036^{ab}	0.039^{a}	0.039^{a}	0.037^{a}	0.037^{a}	*	**	NS	NS	0.0028
Fat pad weight (% of live weight)	1.5^{c}	1.7^{ab}	1.6^{bc}	1.7^{a}	1.7^{a}	1.7^{ab}	1.7^{ab}	**	**	NS	NS	0.1100
Breast meat weight (kg)	0.407^{abcd}	0.394^{d}	0.423^{a}	0.415^{ab}	0.413^{abc}	0.404^{bcd}	0.394^{cd}	*	**	NS	NS	0.0183
Breast meat weight (% of chill wt.)	25.50	24.90	25.80	25.60	25.70	25.30	25.30	NS	**	NS	NS	0.5400
Thighs weight (kg)	0.279	0.275	0.282	0.277	0.274	0.276	0.268	NS	**	*	NS	0.0101
Thighs weight (% of chill wt.)	17.50	17.40	17.20	17.10	17.10	17.30	17.20	NS	**	NS	NS	0.2900
Drums weight (kg)	0.227	0.224	0.231	0.227	0.225	0.227	0.223	NS	**	**	NS	0.0074
Drums weight (% of chill wt.)	14.30	14.20	14.10	14.00	14.00	14.20	14.30	NS	**	**	NS	0.2500
Wings weight (kg)	0.186	0.185	0.191	0.188	0.187	0.185	0.182	NS	**	*	NS	0.0055
Wing weight (% of chill wt.)	11.70	11.80	11.70	11.60	11.70	11.60	11.70	NS	**	*	*	0.1400
Breast Meat Analysis												
Moisture (%)	74.741	74.879	74.716	74.726	74.774	74.993	74.439	NS	**	NS	NS	0.4669
Protein (%, as is basis)	24.111	23.712	24.235	24.346	24.157	24.008	24.019	NS	*	NS	NS	0.5355
Fat (%, as is basis)	0.867	0.931	0.810	1.035	0.809	1.036	0.798	NS	NS	NS	NS	0.1987
Thigh Meat Analysis												
Moisture (%)	75.894^{bc}	75.752^{c}	76.360^{ab}	76.606^{a}	76.293^{ab}	76.804^{a}	76.039^{bc}	**	NS	NS	NS	0.5203
Protein (%, as is basis)	21.061	20.502	21.161	21.133	21.025	20.659	21.339	NS	NS	NS	NS	0.5538
Fat (%, as is basis)	2.455	2.311	1.966	1.847	2.139	1.833	2.153	NS	NS	NS	NS	0.5661

[1] SSD, statistical significance of differences: NS, not significant; *, P<0.05; **, P<.01; Individual treatment means with the same superscript letter in the same row are not statistically different (P>0.05).

[2] LSD, least significant difference between two means (P<0.05)

Appendix Table 1. Day 0 body weights (7/12/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen	No. Birds Weighed	Total Weight (g)	Average Weight (g)
1	F	5	12	474	40
1	F	24	12	458	38
1	F	41	12	452	38
1	F	51	12	472	39
1	F	76	12	454	38
1	M	1	12	474	40
1	M	26	12	458	38
1	M	47	12	474	40
1	M	56	12	458	38
1	M	70	12	446	37
Total & Average			120	462	39
2	F	14	12	466	39
2	F	25	12	450	38
2	F	38	12	454	38
2	F	63	12	466	39
2	F	73	12	468	39
2	M	4	12	460	38
2	M	30	12	470	39
2	M	34	12	442	37
2	M	54	12	454	38
2	M	79	12	460	38
Total & Average			120	459	38
3	F	13	12	456	38
3	F	23	12	486	41
3	F	35	12	452	38
3	F	60	12	450	38
3	F	80	12	442	37
3	M	16	12	472	39
3	M	19	12	474	40
3	M	40	12	454	38
3	M	62	12	464	39
3	M	77	12	456	38
Total & Average			120	461	38
4	F	15	12	462	39
4	F	18	12	456	38
4	F	43	12	460	38
4	F	53	12	452	38
4	F	72	12	440	37
4	M	9	12	444	37
4	M	17	12	480	40
4	M	39	12	456	38
4	M	64	12	460	38
4	M	69	12	462	39
Total & Average			120	457	38
5	F	3	12	460	38
5	F	22	12	478	40
5	F	46	12	464	39
5	F	52	12	454	38
5	F	65	12	454	38
5	M	12	12	450	38
5	M	32	12	468	39
5	M	45	12	456	38
5	M	49	12	460	38
5	M	78	12	456	38
Total & Average			120	460	38
6	F	6	12	484	40
6	F	20	12	450	38
6	F	44	12	442	37
6	F	57	12	448	37
6	F	74	12	460	38
6	M	8	12	474	40
6	M	27	12	482	40
6	M	48	12	456	38
6	M	58	12	456	38
6	M	75	12	458	38
Total & Average			120	461	38
8	F	10	12	454	38
8	F	29	12	440	37
8	F	33	12	472	39
8	F	59	12	470	39
8	F	66	12	450	38
8	M	2	12	464	39
8	M	31	12	462	39
8	M	42	12	464	39
8	M	50	12	468	39
8	M	67	12	438	37
Total & Average			120	458	38

Appendix Table 2. Performance data at 42 days of age (8/23/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen	Number of Birds				Pen Net Wt. (kg)	Ave. Wt. (kg)	R/M Wt. (kg)[b]	Total Wt. (kg)	Kg Feed Consumption	Feed Conversion[c]	Adjusted Feed Conversion[c]
			Started	Mortality	Removed[a]	Weighed							
1	F	5	12	0	2	10	21.6	2.160	0.130	21.730	35.5	1.644	1.634
1	F	24	12	0	2	10	22.2	2.220	0.150	22.350	35.5	1.599	1.588
1	F	41	12	0	2	10	20.4	2.040	0.114	20.514	33.0	1.618	1.609
1	F	51	12	0	2	10	20.7	2.070	0.130	20.830	33.8	1.633	1.623
1	F	76	12	0	2	10	21.9	2.190	0.200	22.100	36.0	1.644	1.629
Female Total & Average			60	0	10	50		2.136				1.627	1.616
1	M	1	12	0	2	10	26.0	2.600	0.190	26.190	40.1	1.542	1.531
1	M	26	12	0	2	10	25.3	2.530	0.180	25.480	38.7	1.530	1.519
1	M	47	12	0	2	10	24.4	2.440	0.210	24.610	38.2	1.566	1.552
1	M	56	12	0	2	10	25.0	2.500	0.210	25.210	38.6	1.544	1.531
1	M	70	12	0	2	10	26.2	2.620	0.190	26.390	40.0	1.527	1.516
Male Total & Average			60	0	10	50		2.538				1.542	1.530
Treatment Total & Average			120	0	20	100		2.337				1.585	1.573
2	F	14	12	0	2	10	20.2	2.020	0.102	20.302	32.0	1.584	1.576
2	F	25	12	0	2	10	20.1	2.010	0.104	20.204	32.0	1.592	1.584
2	F	38	12	0	2	10	19.7	1.970	0.072	19.772	30.4	1.543	1.538
2	F	63	12	0	2	10	21.8	2.180	0.190	21.990	36.3	1.665	1.651
2	F	73	12	0	2	10	22.1	2.210	0.190	22.290	35.4	1.602	1.588
Female Total & Average			60	0	10	50		2.078				1.597	1.587
2	M	4	12	0	2	10	23.0	2.300	0.240	23.240	36.9	1.604	1.588
2	M	30	12	0	2	10	23.4	2.340	0.058	23.458	35.6	1.521	1.518
2	M	34	12	0	2	10	25.6	2.560	0.170	25.770	39.4	1.539	1.529
2	M	54	12	0	2	10	24.8	2.480	0.200	25.000	38.2	1.540	1.528
2	M	79	12	0	2	10	24.6	2.460	0.230	24.830	38.1	1.549	1.534
Male Total & Average			60	0	10	50		2.428				1.551	1.539
Treatment Total & Average			120	0	20	100		2.253				1.574	1.563

Appendix Table 2. Performance data at 42 days of age (8/23/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen	Number of Birds				Pen Net Wt. (kg)	Ave. Wt. (kg)	R/M Wt. (kg)[b]	Total Wt. (kg)	Kg Feed Consumption	Feed Conversion[c]	Adjusted Feed Conversion[c]
			Started	Mortality	Removed[a]	Weighed							
3	F	13	12	0	2	10	22.2	2.220	0.190	22.390	36.1	1.626	1.612
3	F	23	12	0	2	10	20.6	2.060	0.080	20.680	33.3	1.617	1.610
3	F	35	12	0	2	10	22.4	2.240	0.120	22.520	35.5	1.585	1.576
3	F	60	12	0	2	10	20.7	2.070	0.190	20.890	33.1	1.599	1.584
3	F	80	12	0	2	10	22.4	2.240	0.082	22.482	36.3	1.621	1.615
Female Total & Average			60	0	10	50		2.166				1.609	1.600
3	M	16	12	0	2	10	24.5	2.450	0.150	24.650	37.5	1.531	1.521
3	M	19	12	0	2	10	25.5	2.550	0.180	25.680	39.5	1.549	1.538
3	M	40	12	2	2	8	20.2	2.525	2.890	23.090	33.9	1.678	1.468
3	M	62	12	0	2	10	24.7	2.470	0.220	24.920	36.9	1.494	1.481
3	M	77	12	0	2	10	24.4	2.440	0.190	24.590	38.3	1.570	1.558
Male Total & Average			60	2	10	48		2.487				1.564	1.513
Treatment Total & Average			120	2	20	98		2.327				1.587	1.556
4	F	15	12	0	2	10	22.3	2.230	0.130	22.430	35.9	1.610	1.601
4	F	18	12	0	2	10	20.9	2.090	0.104	21.004	33.3	1.593	1.585
4	F	43	12	0	2	10	21.8	2.180	0.192	21.992	34.7	1.592	1.578
4	F	53	12	0	2	10	21.8	2.180	0.118	21.918	34.9	1.601	1.592
4	F	72	12	0	2	10	21.4	2.140	0.120	21.520	34.1	1.593	1.585
Female Total & Average			60	0	10	50		2.164				1.598	1.588
4	M	9	12	1	2	9	23.7	2.633	1.430	25.130	38.9	1.641	1.548
4	M	17	12	1	2	9	21.0	2.333	0.500	21.500	32.4	1.543	1.507
4	M	39	12	0	2	10	25.5	2.550	0.170	25.670	38.6	1.514	1.504
4	M	64	12	1	2	9	22.3	2.478	1.910	24.210	36.2	1.623	1.495
4	M	69	12	0	2	10	26.5	2.650	0.062	26.562	39.7	1.498	1.495
Male Total & Average			60	3	10	47		2.529				1.564	1.510
Treatment Total & Average			120	3	20	97		2.346				1.581	1.549

Appendix Table 2. Performance data at 42 days of age (8/23/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen	Number of Birds				Pen Net Wt. (kg)	Ave. Wt. (kg)	R/M Wt. (kg)[b]	Total Wt. (kg)	Kg Feed Consumption	Feed Conversion[c]	Adjusted Feed Conversion[c]
			Started	Mortality	Removed[a]	Weighed							
5	F	3	12	0	2	10	21.0	2.100	0.180	21.180	34.2	1.629	1.615
5	F	22	12	0	2	10	21.5	2.150	0.100	21.600	34.3	1.595	1.588
5	F	46	12	0	2	10	21.4	2.140	0.120	21.520	35.1	1.640	1.631
5	F	52	12	1	2	9	18.2	2.022	1.500	19.700	30.6	1.681	1.553
5	F	65	12	0	2	10	21.9	2.190	0.230	22.130	36.2	1.653	1.636
Female Total & Average			60	1	10	49		2.120				1.640	1.605
5	M	12	12	0	2	10	25.5	2.550	0.190	25.690	38.8	1.522	1.510
5	M	32	12	0	3	9	22.3	2.478	0.270	22.570	34.4	1.543	1.524
5	M	45	12	0	2	10	25.7	2.570	0.130	25.830	38.8	1.510	1.502
5	M	49	12	0	2	10	25.2	2.520	0.130	25.330	38.9	1.544	1.536
5	M	78	12	1	2	9	22.1	2.456	0.250	22.350	34.4	1.557	1.539
Male Total & Average			60	1	11	48		2.515				1.535	1.522
Treatment Total & Average			120	2	21	97		2.318				1.587	1.563
6	F	6	12	0	2	10	20.2	2.020	0.072	20.272	32.8	1.624	1.618
6	F	20	12	0	2	10	21.8	2.180	0.170	21.970	33.2	1.523	1.511
6	F	44	12	0	2	10	21.0	2.100	0.146	21.146	33.3	1.586	1.575
6	F	57	12	0	2	10	22.1	2.210	0.150	22.250	35.9	1.624	1.613
6	F	74	12	0	2	10	22.3	2.230	0.210	22.510	35.5	1.592	1.577
Female Total & Average			60	0	10	50		2.148				1.590	1.579
6	M	8	12	0	2	10	24.6	2.460	0.170	24.770	37.6	1.528	1.518
6	M	27	12	0	2	10	23.6	2.360	0.140	23.740	35.6	1.508	1.500
6	M	48*	12	0	2	9	22.2	2.467	0.066	22.266	34.8	1.568	1.563
6	M	58	12	0	2	10	25.1	2.510	0.082	25.182	37.8	1.506	1.501
6	M	75	12	0	2	10	25.6	2.560	0.210	25.810	38.2	1.492	1.480
Male Total & Average			60	0	10	49		2.471				1.521	1.512
Treatment Total & Average			120	0	20	99		2.310				1.555	1.546

Appendix Table 2. Performance data at 42 days of age (8/23/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen	Number of Birds				Pen Net Wt. (kg)	Ave. Wt. (kg)	R/M Wt. (kg)[b]	Total Wt. (kg)	Kg Feed Consumption	Feed Conversion[c]	Adjusted Feed Conversion[c]
			Started	Mortality	Removed[a]	Weighed							
8	F	10	12	0	2	10	20.8	2.080	0.070	20.870	32.8	1.577	1.572
8	F	29	12	0	2	10	21.0	2.100	0.102	21.102	33.3	1.586	1.578
8	F	33	12	0	2	10	21.7	2.170	0.180	21.880	33.4	1.539	1.527
8	F	59	12	0	2	10	20.8	2.080	0.200	21.000	33.3	1.601	1.586
8	F	66	12	0	2	10	22.0	2.200	0.150	22.150	34.0	1.545	1.535
Female Total & Average			60	0	10	50		2.126				1.570	1.559
8	M	2	12	0	2	10	25.0	2.500	0.112	25.112	38.1	1.524	1.517
8	M	31	12	1	2	9	22.0	2.444	0.930	22.930	33.9	1.541	1.478
8	M	42	12	0	2	10	25.7	2.570	0.180	25.880	38.4	1.494	1.484
8	M	50	12	0	2	10	24.1	2.410	0.150	24.250	36.0	1.494	1.485
8	M	67	12	0	2	10	24.6	2.460	0.170	24.770	37.7	1.533	1.522
Male Total & Average			60	1	10	49		2.477				1.517	1.497
Treatment Total & Average			120	1	20	99		2.301				1.543	1.528

[a] includes mortality/removals from days 0-7 (i.e. birds were recounted at day 7 to 10/pen and extras were removed)

[b] R/M - removed birds and mortalities

[c] Feed conversion = feed intake/pen bird weight. The weight of mortalities and removed birds are added to the pen bird weight to calculate adjusted feed conversion

*At study end Pen 48 was one bird short. Possibly a bird died and the carcass was lost in the litter. The number weighed is considered correct.

Appendix Table 3. Summary of mortality and probable cause of death from 7-42 days of age.
Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen Number	Number Started[a]	Total Mortality	Percent Mortality	Probable cause of death
1	F	5	10	0	0.0%	
1	F	24	10	0	0.0%	
1	F	41	10	0	0.0%	
1	F	51	10	0	0.0%	
1	F	76	10	0	0.0%	
1	M	1	10	0	0.0%	
1	M	26	10	0	0.0%	
1	M	47	10	0	0.0%	
1	M	56	10	0	0.0%	
1	M	70	10	0	0.0%	
Total & Average			100	0	0.0%	
2	F	14	10	0	0.0%	
2	F	25	10	0	0.0%	
2	F	38	10	0	0.0%	
2	F	63	10	0	0.0%	
2	F	73	10	0	0.0%	
2	M	4	10	0	0.0%	
2	M	30	10	0	0.0%	
2	M	34	10	0	0.0%	
2	M	54	10	0	0.0%	
2	M	79	10	0	0.0%	
Total & Average			100	0	0.0%	
3	F	13	10	0	0.0%	
3	F	23	10	0	0.0%	
3	F	35	10	0	0.0%	
3	F	60	10	0	0.0%	
3	F	80	10	0	0.0%	
3	M	16	10	0	0.0%	
3	M	19	10	0	0.0%	
3	M	40	10	2	20.0%	2 Sudden death syndrome (SDS)
3	M	62	10	0	0.0%	
3	M	77	10	0	0.0%	
Total & Average			100	2	2.0%	
4	F	15	10	0	0.0%	
4	F	18	10	0	0.0%	
4	F	43	10	0	0.0%	
4	F	53	10	0	0.0%	
4	F	72	10	0	0.0%	
4	M	9	10	1	10.0%	1 Ascites (ACT)
4	M	17	10	1	10.0%	1 Sudden death syndrome (SDS)
4	M	39	10	0	0.0%	
4	M	64	10	1	10.0%	1 Sudden death syndrome (SDS)
4	M	69	10	0	0.0%	
Total & Average			100	3	3.0%	

Appendix Table 3. Summary of mortality and probable cause of death from 7-42 days of age.
Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen Number	Number Started[a]	Total Mortality	Percent Mortality	Probable cause of death
5	F	3	10	0	0.0%	
5	F	22	10	0	0.0%	
5	F	46	10	0	0.0%	
5	F	52	10	1	10.0%	1 Sudden death syndrome (SDS)
5	F	65	10	0	0.0%	
5	M	12	10	0	0.0%	
5	M	32	10	0	0.0%	
5	M	45	10	0	0.0%	
5	M	49	10	0	0.0%	
5	M	78	10	1	10.0%	1 Unknown (decomposed)
Total & Average			100	2	2.0%	
6	F	6	10	0	0.0%	
6	F	20	10	0	0.0%	
6	F	44	10	0	0.0%	
6	F	57	10	0	0.0%	
6	F	74	10	0	0.0%	
6	M	8	10	0	0.0%	
6	M	27	10	0	0.0%	
6	M	48	10	0	0.0%	
6	M	58	10	0	0.0%	
6	M	75	10	0	0.0%	
Total & Average			100	0	0.0%	
8	F	10	10	0	0.0%	
8	F	29	10	0	0.0%	
8	F	33	10	0	0.0%	
8	F	59	10	0	0.0%	
8	F	66	10	0	0.0%	
8	M	2	10	0	0.0%	
8	M	31	10	1	10.0%	1 Sudden death syndrome (SDS)
8	M	42	10	0	0.0%	
8	M	50	10	0	0.0%	
8	M	67	10	0	0.0%	
Total & Average			100	1	1.0%	

[a]Twelve (12) birds were started per pen and then reduced to 10/pen on Day 7. The percent mortality is based on mortality data from days 7-42 therefore only 10 birds/pen is indicated here.

NK603 = treatment 8
Parental C = treatment 6.

Appendix Table 4. Feed added, and weighed back, by pen. Project No. MN-00-3 (Monsanto #2000-01-39-02)

2000 Date Treatment	Sex	Pen	Kg Feed 7/11[a] Feed 1	8/1 WB (Day 20)	Starter Consump.	8/1 Feed 2	8/11 Feed 3	8/17 Feed 4	8/23 WB (Day 42)[b]	Grower/Finisher Consump.	Total Consump.
1	F	5	20.0	-10.5	9.5	15.0	10.0	10.0	-9.0	26.0	35.5
1	F	24	20.0	-11.9	8.1	15.0	10.0	10.0	-7.6	27.4	35.5
1	F	41	20.0	-12.2	7.8	15.0	10.0	10.0	-9.8	25.2	33.0
1	F	51	20.0	-11.8	8.2	15.0	10.0	10.0	-9.4	25.6	33.8
1	F	76	20.0	-11.0	9.0	15.0	10.0	10.0	-8.0	27.0	36.0
1	M	1	20.0	-10.7	9.3	15.0	10.0	10.0	-4.2	30.8	40.1
1	M	26	20.0	-11.4	8.6	15.0	10.0	10.0	-4.9	30.1	38.7
1	M	47	20.0	-11.9	8.1	15.0	10.0	10.0	-4.9	30.1	38.2
1	M	56	20.0	-11.2	8.8	15.0	10.0	10.0	-5.2	29.8	38.6
1	M	70	20.0	-11.4	8.6	15.0	10.0	10.0	-3.6	31.4	40.0
2	F	14	20.0	-13.0	7.0	15.0	10.0	10.0	-10.0	25.0	32.0
2	F	25	20.0	-12.3	7.7	15.0	10.0	10.0	-10.7	24.3	32.0
2	F	38	20.0	-12.9	7.1	15.0	10.0	10.0	-11.7	23.3	30.4
2	F	63	20.0	-10.4	9.6	15.0	10.0	10.0	-8.3	26.7	36.3
2	F	73	20.0	-11.5	8.5	15.0	10.0	10.0	-8.1	26.9	35.4
2	M	4	20.0	-11.4	8.6	15.0	10.0	10.0	-6.7	28.3	36.9
2	M	30	20.0	-12.2	7.8	15.0	10.0	10.0	-7.2	27.8	35.6
2	M	34	20.0	-11.7	8.3	15.0	10.0	10.0	-3.9	31.1	39.4
2	M	54	20.0	-11.4	8.6	15.0	10.0	10.0	-5.4	29.6	38.2
2	M	79	20.0	-10.9	9.1	15.0	10.0	10.0	-6.0	29.0	38.1
3	F	13	20.0	-11.3	8.7	15.0	10.0	10.0	-7.6	27.4	36.1
3	F	23	20.0	-11.6	8.4	15.0	10.0	10.0	-10.1	24.9	33.3
3	F	35	20.0	-11.7	8.3	15.0	10.0	10.0	-7.8	27.2	35.5
3	F	60	20.0	-11.7	8.3	15.0	10.0	10.0	-10.2	24.8	33.1
3	F	80	20.0	-11.4	8.6	15.0	10.0	10.0	-7.3	27.7	36.3
3	M	16	20.0	-12.3	7.7	15.0	10.0	10.0	-5.2	29.8	37.5
3	M	19	20.0	-11.6	8.4	15.0	10.0	10.0	-3.9	31.1	39.5
3	M	40	20.0	-11.7	8.3	15.0	10.0	10.0	-9.4	25.6	33.9
3	M	62	20.0	-11.9	8.1	15.0	10.0	10.0	-6.2	28.8	36.9
3	M	77	20.0	-11.2	8.8	15.0	10.0	10.0	-5.5	29.5	38.3

Appendix Table 4. Feed added, and weighed back, by pen. Project No. MN-00-3 (Monsanto #2000-01-39-02)

			Kg Feed								
2000 Date Treatment	Sex	Pen	7/11[a] Feed 1	8/1 WB (Day 20)	Starter Consump.	8/1 Feed 2	8/11 Feed 3	8/17 Feed 4	8/23 WB (Day 42)[b]	Grower/Finisher Consump.	Total Consump.
4	F	15	20.0	-11.2	8.8	15.0	10.0	10.0	-7.9	27.1	35.9
4	F	18	20.0	-11.8	8.2	15.0	10.0	10.0	-9.9	25.1	33.3
4	F	43	20.0	-11.7	8.3	15.0	10.0	10.0	-8.6	26.4	34.7
4	F	53	20.0	-12.0	8.0	15.0	10.0	10.0	-8.1	26.9	34.9
4	F	72	20.0	-12.0	8.0	15.0	10.0	10.0	-8.9	26.1	34.1
4	M	9	20.0	-10.8	9.2	15.0	10.0	10.0	-5.3	29.7	38.9
4	M	17	20.0	-11.5	8.5	15.0	10.0	10.0	-11.1	23.9	32.4
4	M	39	20.0	-12.1	7.9	15.0	10.0	10.0	-4.3	30.7	38.6
4	M	64	20.0	-11.7	8.3	15.0	10.0	10.0	-7.1	27.9	36.2
4	M	69	20.0	-11.8	8.2	15.0	10.0	10.0	-3.5	31.5	39.7
5	F	3	20.0	-11.7	8.3	15.0	10.0	10.0	-9.1	25.9	34.2
5	F	22	20.0	-11.8	8.2	15.0	10.0	10.0	-8.9	26.1	34.3
5	F	46	20.0	-11.3	8.7	15.0	10.0	10.0	-8.6	26.4	35.1
5	F	52	20.0	-12.7	7.3	15.0	10.0	10.0	-11.7	23.3	30.6
5	F	65	20.0	-11.0	9.0	15.0	10.0	10.0	-7.8	27.2	36.2
5	M	12	20.0	-11.7	8.3	15.0	10.0	10.0	-4.5	30.5	38.8
5	M	32	20.0	-12.4	7.6	15.0	10.0	10.0	-8.2	26.8	34.4
5	M	45	20.0	-11.0	9.0	15.0	10.0	10.0	-5.2	29.8	38.8
5	M	49	20.0	-11.4	8.6	15.0	10.0	10.0	-4.7	30.3	38.9
5	M	78	20.0	-10.7	9.3	15.0	10.0	10.0	-9.9	25.1	34.4
6	F	6	20.0	-11.8	8.2	15.0	10.0	10.0	-10.4	24.6	32.8
6	F	20	20.0	-12.1	7.9	15.0	10.0	10.0	-9.7	25.3	33.2
6	F	44	20.0	-11.7	8.3	15.0	10.0	10.0	-10.0	25.0	33.3
6	F	57	20.0	-10.7	9.3	15.0	10.0	10.0	-8.4	26.6	35.9
6	F	74	20.0	-11.6	8.4	15.0	10.0	10.0	-7.9	27.1	35.5
6	M	8	20.0	-11.6	8.4	15.0	10.0	10.0	-5.8	29.2	37.6
6	M	27	20.0	-12.5	7.5	15.0	10.0	10.0	-6.9	28.1	35.6
6	M	48	20.0	-11.9	8.1	15.0	10.0	10.0	-8.3	26.7	34.8
6	M	58	20.0	-11.7	8.3	15.0	10.0	10.0	-5.5	29.5	37.8
6	M	75	20.0	-11.6	8.4	15.0	10.0	10.0	-5.2	29.8	38.2

Appendix Table 4. Feed added, and weighed back, by pen. Project No. MN-00-3 (Monsanto #2000-01-39-02)

2000 Date			Kg Feed								
Treatment	Sex	Pen	7/11[a] Feed 1	8/1 WB (Day 20)	Starter Consump.	8/1 Feed 2	8/11 Feed 3	8/17 Feed 4	8/23 WB (Day 42)[b]	Grower/Finisher Consump.	Total Consump.
8	F	10	20.0	-12.5	7.5	15.0	10.0	10.0	-9.7	25.3	32.8
8	F	29	20.0	-12.0	8.0	15.0	10.0	10.0	-9.7	25.3	33.3
8	F	33	20.0	-12.1	7.9	15.0	10.0	10.0	-9.5	25.5	33.4
8	F	59	20.0	-11.5	8.5	15.0	10.0	10.0	-10.2	24.8	33.3
8	F	66	20.0	-12.1	7.9	15.0	10.0	10.0	-8.9	26.1	34.0
8	M	2	20.0	-11.6	8.4	15.0	10.0	10.0	-5.3	29.7	38.1
8	M	31	20.0	-10.9	9.1	15.0	10.0	10.0	-10.2	24.8	33.9
8	M	42	20.0	-11.3	8.7	15.0	10.0	10.0	-5.3	29.7	38.4
8	M	50	20.0	-11.6	8.4	15.0	10.0	10.0	-7.4	27.6	36.0
8	M	67	20.0	-11.0	9.0	15.0	10.0	10.0	-6.3	28.7	37.7

[a]Feed weighed in prior to the 7/12/00 chick placement

[b]After birds were weighed, this feed was returned until ~12 hours prior to slaughter for processing

Conversion factor for lbs to kg = 2.205

Appendix Table 5. Moisture, protein and fat analysis of chicken thighs (as-is basis).
CQR Project No. MN-00-3 (Monsanto No. 2000-01-39-02)

Treatment	Pen	Sex	Percent Moisture	Percent Protein (by Kjeldahl)	Percent Fat (by acid hydrolysis)
1	1	M	77.15	20.88	2.32
1	26	M	76.28	21.77	2.77
1	47	M	76.32	21.16	2.30
1	56	M	76.13	21.53	1.77
1	70	M	75.87	21.83	1.85
Male Average			76.35	21.43	2.20
1	5	F	76.80	20.57	1.72
1	24	F	76.21	21.48	1.31
1	41	F	76.59	20.81	0.94
1	51	F	76.14	20.82	2.28
1	76	F	76.11	20.75	2.40
Female Average			76.37	20.89	1.73
Treatment Average			76.36	21.16	1.97
2	4	M	76.25	21.66	1.57
2	30	M	76.19	21.80	3.53
2	34	M	76.60	20.44	2.15
2	54	M	75.50	21.62	2.06
2	79	M	75.95	20.25	2.28
Male Average			76.10	21.16	2.32
2	14	F	76.82	21.02	1.43
2	25	F	76.14	21.45	1.63
2	38	F	76.86	20.62	2.04
2	63	F	75.77	20.48	2.05
2	73	F	74.31	21.99	2.79
Female Average			75.98	21.11	1.99
Treatment Average			76.04	21.13	2.15
3	16	M	76.07	21.87	2.58
3	19	M	76.36	20.72	2.22
3	40	M	76.31	21.42	2.51
3	62	M	76.40	20.38	1.85
3	77	M	76.66	20.57	1.90
Male Average			76.36	20.99	2.21
3	13	F	76.13	21.20	2.06
3	23	F	76.46	21.23	2.02
3	35	F	75.88	21.32	2.23
3	60	F	76.43	21.30	1.94
3	80	F	76.23	20.24	2.08
Female Average			76.23	21.06	2.07
Treatment Average			76.29	21.02	2.14

Appendix Table 5. Moisture, protein and fat analysis of chicken thighs (as-is basis).
CQR Project No. MN-00-3 (Monsanto No. 2000-01-39-02)

Treatment	Pen	Sex	Percent Moisture	Percent Protein (by Kjeldahl)	Percent Fat (by acid hydrolysis)
4	9	M	76.46	21.63	1.85
4	17	M	77.79	20.39	1.15
4	39	M	77.39	19.15	1.61
4	64	M	76.01	20.67	1.67
4	69	M	76.39	20.79	1.71
Male Average			76.81	20.52	1.60
4	15	F	76.21	21.25	2.56
4	18	F	76.54	20.54	1.94
4	43	F	76.62	20.93	1.44
4	53	F	76.33	20.54	2.63
4	72	F	76.32	20.70	1.91
Female Average			76.40	20.79	2.10
Treatment Average			76.61	20.66	1.85
5	12	M	76.63	21.32	1.25
5	32	M	76.24	21.16	2.26
5	45	M	76.61	20.50	1.87
5	49	M	76.83	20.14	1.62
5	78	M	76.41	20.97	1.47
Male Average			76.54	20.82	1.69
5	3	F	77.54	20.51	1.20
5	22	F	76.45	20.04	3.35
5	46	F	77.42	19.89	1.34
5	52	F	77.30	19.85	2.11
5	65	F	76.61	20.65	1.86
Female Average			77.06	20.19	1.97
Treatment Average			76.80	20.50	1.83
6	8	M	76.58	20.35	2.92
6	27	M	76.33	20.35	2.63
6	48	M	75.57	21.39	3.02
6	58	M	76.01	21.16	1.37
6	75	M	76.04	21.08	1.70
Male Average			76.11	20.87	2.33
6	6	F	75.61	22.59	2.21
6	20	F	76.12	20.94	2.03
6	44	F	72.97	23.52	2.99
6	57	F	76.31	20.95	1.69
6	74	F	75.98	21.05	2.55
Female Average			75.40	21.81	2.29
Treatment Average			75.75	21.34	2.31

Appendix Table 5. Moisture, protein and fat analysis of chicken thighs (as-is basis).
CQR Project No. MN-00-3 (Monsanto No. 2000-01-39-02)

Treatment	Pen	Sex	Percent Moisture	Percent Protein (by Kjeldahl)	Percent Fat (by acid hydrolysis)
8	2	M	76.38	21.16	2.01
8	31	M	75.45	21.63	1.80
8	42	M	75.63	20.79	3.43
8	50	M	76.19	21.15	1.30
8	67	M	75.30	19.91	4.82
Male Average			75.79	20.93	2.67
8	10	F	76.20	20.90	2.16
8	29	F	75.81	22.30	2.51
8	33	F	76.73	21.08	1.55
8	59	F	75.05	20.86	3.14
8	66	F	76.20	20.84	1.83
Female Average			76.00	21.20	2.24
Treatment Average			75.89	21.06	2.46

Samples from males (M) were collected on 8/24/00, samples from females (F) were collected on 8/25/00

Analysis conducted by Experiment Station Chemical Laboratories, University of Missouri

Appendix Table 6. Moisture, protein and fat analysis of chicken breasts (as-is basis).
CQR Project No. MN-00-3 (Monsanto No. 2000-01-39-02)

Treatment	Pen	Sex	Percent Moisture	Percent Protein (by Kjeldahl)	Percent Fat (by acid hydrolysis)
1	1	M	73.32	25.54	0.89
1	26	M	75.26	23.76	0.56
1	47	M	74.33	24.63	0.99
1	56	M	74.60	24.37	0.76
1	70	M	74.43	24.41	0.64
Male Average			74.39	24.54	0.77
1	5	F	74.70	24.01	0.97
1	24	F	75.37	23.79	0.81
1	41	F	74.85	23.94	0.90
1	51	F	75.20	24.07	0.84
1	76	F	75.10	23.83	0.74
Female Average			75.04	23.93	0.85
Treatment Average			74.72	24.24	0.81
2	4	M	71.08	27.72	0.94
2	30	M	74.17	24.20	1.64
2	34	M	74.78	23.64	0.76
2	54	M	74.05	24.66	0.71
2	79	M	74.87	24.06	1.10
Male Average			73.79	24.86	1.03
2	14	F	75.22	24.01	0.76
2	25	F	75.12	24.00	0.77
2	38	F	75.08	23.74	1.02
2	63	F	75.18	23.43	1.62
2	73	F	74.84	23.99	1.03
Female Average			75.09	23.83	1.04
Treatment Average			74.44	24.35	1.04
3	16	M	74.21	24.37	0.88
3	19	M	75.17	23.80	1.00
3	40	M	74.27	24.95	0.95
3	62	M	74.23	24.80	0.85
3	77	M	75.14	23.93	0.71
Male Average			74.60	24.37	0.88
3	13	F	74.82	23.77	0.81
3	23	F	74.55	24.50	0.83
3	35	F	75.03	24.28	0.63
3	60	F	74.69	23.63	0.80
3	80	F	75.63	23.55	0.63
Female Average			74.94	23.94	0.74
Treatment Average			74.77	24.16	0.81

Appendix Table 6. Moisture, protein and fat analysis of chicken breasts (as-is basis).
CQR Project No. MN-00-3 (Monsanto No. 2000-01-39-02)

Treatment	Pen	Sex	Percent Moisture	Percent Protein (by Kjeldahl)	Percent Fat (by acid hydrolysis)
4	9	M	75.54	23.52	0.84
4	17	M	75.08	23.31	1.14
4	39	M	74.08	24.78	1.05
4	64	M	74.45	24.47	0.86
4	69	M	74.13	24.88	1.11
Male Average			74.66	24.19	1.00
4	15	F	75.14	23.40	1.38
4	18	F	74.99	23.76	1.07
4	43	F	74.81	24.32	0.72
4	53	F	74.65	24.43	0.78
4	72	F	74.39	23.22	1.41
Female Average			74.80	23.83	1.07
Treatment Average			74.73	24.01	1.04
5	12	M	74.84	24.02	1.37
5	32	M	74.59	24.23	1.03
5	45	M	74.43	23.86	0.96
5	49	M	74.96	23.95	0.91
5	78	M	74.72	24.25	0.82
Male Average			74.71	24.06	1.02
5	3	F	74.67	24.32	0.73
5	22	F	75.43	23.18	0.78
5	46	F	75.45	23.12	0.96
5	52	F	75.60	22.96	0.69
5	65	F	75.24	23.23	1.06
Female Average			75.28	23.36	0.84
Treatment Average			74.99	23.71	0.93
6	8	M	74.41	24.58	0.71
6	27	M	74.99	24.04	0.95
6	48	M	75.03	23.74	1.13
6	58	M	74.99	23.63	0.60
6	75	M	74.45	24.13	1.00
Male Average			74.77	24.03	0.88
6	6	F	74.62	24.30	0.71
6	20	F	74.90	24.27	0.69
6	44	F	75.29	23.61	0.94
6	57	F	74.95	23.90	0.57
6	74	F	75.16	23.98	0.68
Female Average			74.98	24.01	0.72
Treatment Average			74.88	24.02	0.80

Appendix Table 6. Moisture, protein and fat analysis of chicken breasts (as-is basis).
CQR Project No. MN-00-3 (Monsanto No. 2000-01-39-02)

Treatment	Pen	Sex	Percent Moisture	Percent Protein (by Kjeldahl)	Percent Fat (by acid hydrolysis)
8	2	M	74.49	23.74	0.91
8	31	M	74.65	24.79	0.92
8	42	M	74.96	23.74	0.82
8	50	M	74.50	24.09	0.62
8	67	M	74.82	24.13	1.04
Male Average			74.68	24.10	0.86
8	10	F	74.89	23.57	1.11
8	29	F	74.59	24.28	0.81
8	33	F	74.92	24.43	0.68
8	59	F	74.63	24.26	1.07
8	66	F	74.96	24.09	0.69
Female Average			74.80	24.12	0.87
Treatment Average			74.74	24.11	0.87

Samples from males (M) were collected on 8/24/00, samples from females (F) were collected on 8/25/00

Analysis conducted by Experiment Station Chemical Laboratories, University of Missouri

Appendix Table 7. Individual mortality weights, date and study day of death. Project No. MN-00-3
Monsanto Study No. 2000-01-39-02

Treatment	Sex	Pen Number	Birds - Mortality/removal weights (kg) [Date is year 2000]											
			Day 0 - 7						Day7-42					
			Wt (kg)	Date	Day	Wt (kg)	Date	Day	Wt (kg)	Date	Day	Wt (kg)	Date	Day
1	M	1	0.190	7/19	7									
8	M	2	0.062	7/15	3	0.050	7/19	7						
5	F	3	0.180	7/19	7									
2	M	4	0.240	7/19	7									
1	F	5	0.130	7/19	7									
6	F	6	0.032	7/15	3	0.040	7/19	7						
6	M	8	0.170	7/19	7									
4	M	9	0.200	7/19	7				1.23	8/11	30			
8	F	10	0.070	7/19	7									
5	M	12	0.190	7/19	7									
3	F	13	0.190	7/19	7									
2	F	14	0.032	7/15	3	0.070	7/19	7						
4	F	15	0.030	7/16	4	0.100	7/19	7						
3	M	16	0.150	7/19	7									
4	M	17	0.160	7/19	7				0.34	7/29	17			
4	F	18	0.034	7/15	3	0.070	7/19	7						
3	M	19	0.180	7/19	7									
6	F	20	0.170	7/19	7									
5	F	22	0.032	7/15	3	0.068	7/16	4						
3	F	23	0.030	7/16	4	0.050	7/19	7						
1	F	24	0.150	7/19	7									
2	F	25	0.034	7/15	3	0.070	7/19	7						
1	M	26	0.180	7/19	7									
6	M	27	0.140	7/19	7									
8	F	29	0.032	7/16	4	0.070	7/19	7						
2	M	30	0.030	7/16	4	0.028	7/17	5						
8	M	31	0.100	7/19	7				0.83	8/5	24			

Appendix Table 7. Individual mortality weights, date and study day of death. Project No. MN-00-3
Monsanto Study No. 2000-01-39-02

Treatment	Sex	Pen Number	Birds - Mortality/removal weights (kg) [Date is year 2000]											
			Day 0 - 7						Day7-42					
			Wt (kg)	Date	Day	Wt (kg)	Date	Day	Wt (kg)	Date	Day	Wt (kg)	Date	Day
5	M	32	0.030	7/16	4	0.060	7/19	7	0.18	8/3	22			
8	F	33	0.180	7/19	7									
2	M	34	0.170	7/19	7									
3	F	35	0.030	7/16	4	0.090	7/19	7						
2	F	38	0.032	7/16	4	0.040	7/19	7						
4	M	39	0.170	7/19	7									
3	M	40	0.230	7/19	7				0.43	7/28	16	2.23	8/18	37
1	F	41	0.034	7/15	3	0.080	7/19	7						
8	M	42	0.180	7/19	7									
4	F	43	0.082	7/18	6	0.110	7/19	7						
6	F	44	0.036	7/15	3	0.110	7/19	7						
5	M	45	0.130	7/19	7									
5	F	46	0.120	7/19	7									
1	M	47	0.210	7/19	7									
6	M	48	0.026	7/16	4	0.040	7/19	7						
5	M	49	0.130	7/19	7									
8	M	50	0.150	7/19	7									
1	F	51	0.130	7/19	7									
5	F	52	0.140	7/19	7				1.36	8/14	33			
4	F	53	0.028	7/15	3	0.090	7/19	7						
2	M	54	0.200	7/19	7									
1	M	56	0.210	7/19	7									
6	F	57	0.150	7/19	7									
6	M	58	0.032	7/15	3	0.050	7/19	7						
8	F	59	0.200	7/19	7									
3	F	60	0.190	7/19	7									
3	M	62	0.220	7/19	7									

Appendix Table 7. Individual mortality weights, date and study day of death. Project No. MN-00-3
Monsanto Study No. 2000-01-39-02

Treatment	Sex	Pen Number	Birds - Mortality/removal weights (kg) [Date is year 2000]											
			Day 0 - 7						Day7-42					
			Wt (kg)	Date	Day	Wt (kg)	Date	Day	Wt (kg)	Date	Day	Wt (kg)	Date	Day
2	F	63	0.190	7/19	7									
4	M	64	0.190	7/19	7				1.72	8/13	32			
5	F	65	0.230	7/19	7									
8	F	66	0.150	7/19	7									
8	M	67	0.170	7/19	7									
4	M	69	0.034	7/15	3	0.028	7/17	5						
1	M	70	0.190	7/19	7									
4	F	72	0.120	7/19	7									
2	F	73	0.190	7/19	7									
6	F	74	0.210	7/19	7									
6	M	75	0.210	7/19	7									
1	F	76	0.200	7/19	7									
3	M	77	0.190	7/19	7									
5	M	78	0.140	7/19	7				0.11	7/24	12			
2	M	79	0.230	7/19	7									
3	F	80	0.032	7/15	3	0.050	7/19	7						

Day = study day of death [day 0 = 7/12/00]

Table P1. Summary, by pen, of processing data at 43 & 44 days of age (8/24/00 & 8/25/00) **Project No. MN-00-3 (Monsanto #2000-01-39-02)**
(live wt is after ~12 hr feed withdrawal)

Treatment	Sex	Pen	No. of Birds	Pen Average Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight Breast	Wings	Thighs	Drums
1	F	5	10	2.137	0.0361	1.532	0.397	0.177	0.260	0.210	71.70%	1.68%	25.89%	11.56%	16.99%	13.73%
1	F	24	10	2.206	0.0408	1.580	0.392	0.186	0.276	0.227	71.61%	1.85%	24.72%	11.76%	17.45%	14.38%
1	F	41	10	2.052	0.0379	1.465	0.384	0.173	0.242	0.201	71.37%	1.85%	26.20%	11.80%	16.52%	13.69%
1	F	51	10	2.055	0.0347	1.450	0.372	0.173	0.245	0.204	70.55%	1.67%	25.62%	11.99%	16.87%	14.06%
1	F	76	10	2.184	0.0383	1.579	0.430	0.182	0.267	0.215	72.23%	1.76%	27.10%	11.53%	16.91%	13.62%
Total & Average			50	2.127	0.0376	1.521	0.395	0.178	0.258	0.211	71.49%	1.76%	25.91%	11.73%	16.95%	13.90%
1	M	1	10	2.494	0.0377	1.766	0.484	0.200	0.306	0.249	70.80%	1.53%	27.34%	11.38%	17.31%	14.08%
1	M	26	10	2.413	0.0334	1.713	0.449	0.205	0.301	0.239	71.00%	1.38%	26.18%	12.01%	17.57%	13.91%
1	M	47	9	2.541	0.0370	1.780	0.449	0.208	0.314	0.253	70.06%	1.46%	25.19%	11.72%	17.63%	14.21%
1	M	56	10	2.388	0.0339	1.698	0.424	0.196	0.294	0.251	71.08%	1.44%	25.00%	11.56%	17.30%	14.78%
1	M	70	10	2.485	0.0340	1.784	0.448	0.206	0.310	0.262	71.76%	1.35%	25.08%	11.54%	17.35%	14.74%
Total & Average			49	2.464	0.0352	1.748	0.451	0.203	0.305	0.251	70.94%	1.43%	25.76%	11.64%	17.43%	14.34%
Treatment Total & Average			99	2.296	0.0364	1.635	0.423	0.191	0.282	0.231	71.22%	1.60%	25.83%	11.69%	17.19%	14.12%
2	F	14	10	1.996	0.0386	1.414	0.347	0.167	0.237	0.205	70.80%	1.94%	24.53%	11.82%	16.71%	14.48%
2	F	25	10	2.003	0.0353	1.407	0.353	0.167	0.237	0.199	70.24%	1.75%	25.07%	11.87%	16.85%	14.12%
2	F	38	10	1.973	0.0373	1.391	0.354	0.164	0.233	0.195	70.19%	1.81%	25.10%	11.90%	16.77%	13.97%
2	F	63	10	2.180	0.0411	1.550	0.411	0.179	0.272	0.212	71.10%	1.88%	26.53%	11.58%	17.53%	13.70%
2	F	73	10	2.184	0.0421	1.551	0.393	0.181	0.267	0.219	71.03%	1.93%	25.28%	11.68%	17.19%	14.10%
Total & Average			50	2.067	0.0389	1.463	0.372	0.172	0.249	0.206	70.67%	1.86%	25.30%	11.77%	17.01%	14.07%
2	M	4	10	2.228	0.0362	1.571	0.394	0.182	0.284	0.233	70.46%	1.63%	25.08%	11.62%	18.07%	14.83%
2	M	30	10	2.256	0.0331	1.591	0.399	0.191	0.269	0.231	70.41%	1.47%	25.01%	12.05%	16.91%	14.45%
2	M	34	10	2.469	0.0396	1.759	0.449	0.203	0.303	0.257	71.19%	1.59%	25.49%	11.58%	17.20%	14.64%
2	M	54	10	2.366	0.0364	1.687	0.422	0.195	0.297	0.250	71.31%	1.52%	24.97%	11.60%	17.59%	14.85%
2	M	79	10	2.373	0.0325	1.691	0.437	0.196	0.291	0.240	71.28%	1.36%	25.82%	11.59%	17.18%	14.23%
Total & Average			50	2.338	0.0356	1.660	0.420	0.193	0.289	0.242	70.93%	1.51%	25.27%	11.69%	17.39%	14.60%
Treatment Total & Average			100	2.203	0.0372	1.561	0.396	0.183	0.269	0.224	70.80%	1.69%	25.29%	11.73%	17.20%	14.34%

Percent chill and fat pad are percent of live weight, percent breast, wings, drums and thighs are percent of chill weight

Males processed on day 43 and females processed on day 44.

Table P1. Summary, by pen, of processing data at 43 & 44 days of age (8/24/00 & 8/25/00)
(live wt is after ~12 hr feed withdrawal)

Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen	No. of Birds	Pen Average Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight Breast	Wings	Thighs	Drums
3	F	13	10	2.209	0.0427	1.568	0.413	0.182	0.262	0.214	70.97%	1.93%	26.33%	11.60%	16.70%	13.64%
3	F	23	10	2.059	0.0369	1.449	0.377	0.172	0.239	0.202	70.23%	1.78%	26.01%	11.89%	16.47%	13.96%
3	F	35	10	2.228	0.0415	1.582	0.414	0.186	0.268	0.216	71.03%	1.87%	26.18%	11.75%	16.94%	13.63%
3	F	60	10	2.053	0.0332	1.471	0.382	0.178	0.252	0.208	71.62%	1.61%	25.88%	12.13%	17.15%	14.17%
3	F	80	10	2.211	0.0454	1.578	0.405	0.182	0.263	0.219	71.33%	2.08%	25.63%	11.57%	16.69%	13.86%
Total & Average			50	2.152	0.0399	1.530	0.398	0.180	0.257	0.212	71.04%	1.85%	26.01%	11.79%	16.79%	13.85%
3	M	16	10	2.343	0.0434	1.649	0.408	0.193	0.287	0.233	70.36%	1.84%	24.77%	11.73%	17.35%	14.12%
3	M	19	10	2.425	0.0358	1.706	0.441	0.196	0.295	0.238	70.32%	1.49%	25.76%	11.49%	17.28%	13.96%
3	M	40	8	2.424	0.0323	1.704	0.436	0.195	0.294	0.247	70.23%	1.34%	25.60%	11.47%	17.24%	14.55%
3	M	62	10	2.361	0.0368	1.684	0.434	0.194	0.295	0.238	71.29%	1.55%	25.77%	11.55%	17.52%	14.13%
3	M	77	9	2.434	0.0394	1.743	0.435	0.201	0.304	0.250	71.57%	1.61%	24.89%	11.56%	17.42%	14.30%
Total & Average			47	2.397	0.0375	1.697	0.431	0.196	0.295	0.241	70.75%	1.57%	25.36%	11.56%	17.36%	14.21%
Treatment Total & Average			97	2.275	0.0387	1.613	0.415	0.188	0.276	0.227	70.90%	1.71%	25.68%	11.67%	17.08%	14.03%
4	F	15	10	2.206	0.0379	1.563	0.400	0.183	0.269	0.214	70.84%	1.72%	25.62%	11.71%	17.22%	13.68%
4	F	18	10	2.085	0.0388	1.485	0.384	0.175	0.245	0.199	71.19%	1.85%	25.84%	11.79%	16.45%	13.37%
4	F	43	10	2.177	0.0398	1.565	0.401	0.182	0.262	0.215	71.87%	1.82%	25.57%	11.64%	16.68%	13.76%
4	F	53	10	2.179	0.0456	1.548	0.402	0.178	0.271	0.215	71.00%	2.08%	25.90%	11.52%	17.54%	13.93%
4	F	72	10	2.128	0.0412	1.520	0.381	0.173	0.251	0.206	71.38%	1.95%	25.10%	11.44%	16.55%	13.58%
Total & Average			50	2.155	0.0407	1.536	0.394	0.178	0.260	0.210	71.26%	1.88%	25.61%	11.62%	16.89%	13.66%
4	M	9	8	2.524	0.0403	1.792	0.474	0.204	0.318	0.250	70.97%	1.56%	26.57%	11.44%	17.66%	13.94%
4	M	17	9	2.216	0.0346	1.554	0.393	0.181	0.275	0.219	70.10%	1.56%	25.22%	11.68%	17.71%	14.13%
4	M	39	10	2.440	0.0378	1.727	0.450	0.199	0.287	0.243	70.76%	1.55%	25.99%	11.55%	16.60%	14.10%
4	M	64	9	2.365	0.0319	1.668	0.410	0.191	0.291	0.249	70.55%	1.34%	24.59%	11.52%	17.46%	14.92%
4	M	69	10	2.547	0.0421	1.803	0.455	0.209	0.306	0.258	70.67%	1.65%	25.18%	11.60%	16.94%	14.36%
Total & Average			46	2.418	0.0373	1.709	0.436	0.197	0.295	0.244	70.61%	1.53%	25.51%	11.56%	17.27%	14.29%
Treatment Total & Average			96	2.287	0.0390	1.623	0.415	0.188	0.278	0.227	70.93%	1.71%	25.56%	11.59%	17.08%	13.98%

Percent chill and fat pad are percent of live weight, percent breast, wings, drums and thighs are percent of chill weight

Males processed on day 43 and females processed on day 44.

Table P1. Summary, by pen, of processing data at 43 & 44 days of age (8/24/00 & 8/25/00)
(live wt is after ~12 hr feed withdrawal)

Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen	No. of Birds	Pen Average Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight Breast	Wings	Thighs	Drums
5	F	3	10	2.092	0.0382	1.492	0.379	0.172	0.252	0.204	71.32%	1.83%	25.33%	11.53%	16.82%	13.71%
5	F	22	10	2.130	0.0424	1.518	0.396	0.174	0.256	0.212	71.22%	1.99%	26.11%	11.46%	16.87%	13.99%
5	F	46	10	2.142	0.0431	1.541	0.404	0.176	0.255	0.212	71.94%	2.01%	26.22%	11.44%	16.56%	13.78%
5	F	52	9	2.026	0.0384	1.428	0.353	0.169	0.248	0.203	70.48%	1.89%	24.74%	11.85%	17.30%	14.20%
5	F	65	10	2.184	0.0399	1.550	0.405	0.178	0.262	0.215	70.95%	1.82%	26.09%	11.49%	16.91%	13.84%
Total & Average			49	2.115	0.0404	1.506	0.387	0.174	0.255	0.209	71.18%	1.91%	25.70%	11.55%	16.89%	13.90%
5	M	12	10	2.464	0.0362	1.741	0.432	0.201	0.314	0.249	70.57%	1.47%	24.77%	11.59%	18.09%	14.29%
5	M	32	9	2.373	0.0322	1.674	0.430	0.197	0.294	0.240	70.49%	1.37%	25.67%	11.80%	17.51%	14.36%
5	M	45	10	2.440	0.0305	1.734	0.436	0.202	0.306	0.248	71.07%	1.25%	25.15%	11.63%	17.63%	14.29%
5	M	49	9	2.388	0.0360	1.689	0.429	0.193	0.294	0.245	70.78%	1.50%	25.42%	11.44%	17.39%	14.49%
5	M	78	9	2.345	0.0374	1.646	0.386	0.196	0.290	0.246	70.18%	1.60%	23.42%	11.94%	17.65%	14.91%
Total & Average			47	2.402	0.0345	1.697	0.423	0.198	0.300	0.246	70.62%	1.44%	24.89%	11.68%	17.65%	14.47%
Treatment Total & Average			96	2.258	0.0374	1.601	0.405	0.186	0.277	0.227	70.90%	1.67%	25.29%	11.62%	17.27%	14.19%
6	F	6	10	1.966	0.0391	1.396	0.355	0.165	0.234	0.190	70.96%	1.96%	25.34%	11.88%	16.68%	13.64%
6	F	20	10	2.177	0.0331	1.548	0.398	0.185	0.266	0.215	71.07%	1.52%	25.76%	11.99%	17.23%	13.86%
6	F	44	10	2.106	0.0380	1.507	0.380	0.179	0.252	0.210	71.53%	1.80%	25.22%	11.90%	16.72%	13.92%
6	F	57	10	2.215	0.0433	1.583	0.403	0.191	0.269	0.222	71.38%	1.94%	25.46%	12.06%	16.97%	13.95%
6	F	74	10	2.197	0.0397	1.570	0.395	0.183	0.270	0.225	71.41%	1.84%	25.21%	11.70%	17.19%	14.30%
Total & Average			50	2.132	0.0386	1.521	0.386	0.181	0.258	0.212	71.27%	1.81%	25.40%	11.91%	16.96%	13.93%
6	M	8	10	2.376	0.0365	1.697	0.422	0.194	0.296	0.233	71.38%	1.53%	24.68%	11.47%	17.42%	13.75%
6	M	27	10	2.234	0.0332	1.560	0.376	0.181	0.280	0.223	69.81%	1.50%	24.03%	11.61%	17.90%	14.28%
6	M	48	9	2.348	0.0381	1.644	0.409	0.190	0.295	0.241	69.98%	1.63%	24.81%	11.58%	17.94%	14.70%
6	M	58	10	2.390	0.0351	1.699	0.406	0.200	0.303	0.254	71.06%	1.47%	23.88%	11.79%	17.89%	14.97%
6	M	75	10	2.457	0.0337	1.764	0.439	0.202	0.314	0.259	71.71%	1.36%	24.88%	11.48%	17.77%	14.68%
Total & Average			49	2.361	0.0353	1.673	0.410	0.193	0.298	0.242	70.79%	1.50%	24.46%	11.59%	17.78%	14.48%
Treatment Total & Average			99	2.247	0.0370	1.597	0.398	0.187	0.278	0.227	71.03%	1.66%	24.93%	11.75%	17.37%	14.21%

Percent chill and fat pad are percent of live weight, percent breast, wings, drums and thighs are percent of chill weight

Males processed on day 43 and females processed on day 44.

Table P1. Summary, by pen, of processing data at 43 & 44 days of age (8/24/00 & 8/25/00)
(live wt is after ~12 hr feed withdrawal)

Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Sex	Pen	No. of Birds	Pen Average Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight Breast	Wings	Thighs	Drums
8	F	10	10	2.089	0.0363	1.494	0.397	0.177	0.263	0.207	71.48%	1.73%	26.52%	11.88%	17.60%	13.86%
8	F	29	10	2.105	0.0340	1.477	0.381	0.177	0.262	0.208	70.14%	1.62%	25.75%	12.01%	17.69%	14.08%
8	F	33	10	2.150	0.0364	1.523	0.395	0.182	0.251	0.212	70.79%	1.71%	25.81%	11.98%	16.56%	13.97%
8	F	59	10	2.078	0.0349	1.474	0.374	0.175	0.256	0.206	70.97%	1.68%	23.56%	11.91%	17.37%	14.01%
8	F	66	10	2.196	0.0365	1.563	0.397	0.183	0.283	0.226	71.14%	1.67%	25.47%	11.72%	18.15%	14.46%
Total & Average			50	2.124	0.0356	1.506	0.389	0.179	0.263	0.212	70.90%	1.68%	25.42%	11.90%	17.47%	14.08%
8	M	2	10	2.396	0.0331	1.711	0.435	0.198	0.302	0.239	71.31%	1.38%	25.30%	11.62%	17.60%	14.01%
8	M	31	9	2.339	0.0346	1.646	0.410	0.189	0.291	0.242	70.25%	1.49%	24.82%	11.44%	17.68%	14.77%
8	M	42	10	2.483	0.0328	1.773	0.453	0.202	0.315	0.254	71.32%	1.33%	25.49%	11.43%	17.76%	14.31%
8	M	50	10	2.316	0.0297	1.642	0.413	0.194	0.285	0.242	70.89%	1.28%	25.12%	11.82%	17.34%	14.75%
8	M	67	10	2.350	0.0281	1.653	0.421	0.192	0.290	0.240	70.34%	1.20%	25.49%	11.63%	17.54%	14.52%
Total & Average			49	2.377	0.0317	1.685	0.426	0.195	0.297	0.243	70.82%	1.34%	25.24%	11.59%	17.58%	14.47%
Treatment Total & Average			99	2.250	0.0336	1.596	0.408	0.187	0.280	0.228	70.86%	1.51%	25.33%	11.74%	17.53%	14.27%

Percent chill and fat pad are percent of live weight, percent breast, wings, drums and thighs are percent of chill weight

Males processed on day 43 and females processed on day 44.

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
1	1	1	2.470	0.0361	1.780	0.453	0.209	0.323	0.248	72.06%	1.46%	25.45%	11.74%	18.15%	13.93%
1	1	2	2.066	0.0501	1.430	0.341	0.179	0.253	0.189	69.22%	2.42%	23.85%	12.52%	17.69%	13.22%
1	1	3	2.584	0.0433	1.790	0.504	0.213	0.293	0.244	69.27%	1.68%	28.16%	11.90%	16.37%	13.63%
1	1	4	2.568	0.0355	1.785	0.506	0.203	0.283	0.250	69.51%	1.38%	28.35%	11.37%	15.85%	14.01%
1	1	5	2.544	0.0273	1.800	0.504	0.210	0.330	0.263	70.75%	1.07%	28.00%	11.67%	18.33%	14.61%
1	1	6	2.460	0.0312	1.745	0.471	0.194	0.292	0.229	70.93%	1.27%	26.99%	11.12%	16.73%	13.12%
1	1	7	2.624	0.0430	1.835	0.488	0.215	0.356	0.271	69.93%	1.64%	26.59%	11.72%	19.40%	14.77%
1	1	8	2.584	0.0300	1.860	0.540	0.203	0.311	0.273	71.98%	1.16%	29.03%	10.91%	16.72%	14.68%
1	1	9	2.522	0.0476	1.835	0.527	0.184	0.300	0.246	72.76%	1.89%	28.72%	10.03%	16.35%	13.41%
1	1	10	2.516	0.0324	1.800	0.509	0.194	0.315	0.278	71.54%	1.29%	28.28%	10.78%	17.50%	15.44%
Number of Birds		10													
Pen Average			2.494	0.0377	1.766	0.484	0.200	0.306	0.249	70.80%	1.53%	27.34%	11.38%	17.31%	14.08%
8	2	501	1.936	0.0321	1.360	0.321	0.161	0.248	0.204	70.25%	1.66%	23.60%	11.84%	18.24%	15.00%
8	2	502	2.142	0.0371	1.495	0.358	0.174	0.276	0.201	69.79%	1.73%	23.95%	11.64%	18.46%	13.44%
8	2	503	2.270	0.0201	1.555	0.378	0.206	0.260	0.236	68.50%	0.89%	24.31%	13.25%	16.72%	15.18%
8	2	504	2.668	0.0291	1.885	0.472	0.206	0.318	0.267	70.65%	1.09%	25.04%	10.93%	16.87%	14.16%
8	2	505	2.710	0.0406	1.950	0.498	0.232	0.362	0.272	71.96%	1.50%	25.54%	11.90%	18.56%	13.95%
8	2	506	2.772	0.0479	2.035	0.525	0.225	0.386	0.268	73.41%	1.73%	25.80%	11.06%	18.97%	13.17%
8	2	507	2.176	0.0302	1.510	0.375	0.173	0.260	0.223	69.39%	1.39%	24.83%	11.46%	17.22%	14.77%
8	2	508	2.604	0.0307	1.910	0.525	0.213	0.330	0.243	73.35%	1.18%	27.49%	11.15%	17.28%	12.72%
8	2	509	2.298	0.0305	1.675	0.457	0.183	0.254	0.231	72.89%	1.33%	27.28%	10.93%	15.16%	13.79%
8	2	510	2.380	0.0323	1.735	0.437	0.210	0.322	0.242	72.90%	1.36%	25.19%	12.10%	18.56%	13.95%
Number of Birds		10													
Pen Average			2.396	0.0331	1.711	0.435	0.198	0.302	0.239	71.31%	1.38%	25.30%	11.62%	17.60%	14.01%
2	4	11	2.030	0.0407	1.400	0.362	0.173	0.262	0.199	68.97%	2.00%	25.86%	12.36%	18.71%	14.21%
2	4	12	2.396	0.0342	1.675	0.452	0.194	0.295	0.232	69.91%	1.43%	26.99%	11.58%	17.61%	13.85%
2	4	13	2.372	0.0282	1.720	0.440	0.196	0.300	0.260	72.51%	1.19%	25.58%	11.40%	17.44%	15.12%
2	4	14	2.262	0.0474	1.585	0.330	0.191	0.300	0.237	70.07%	2.10%	20.82%	12.05%	18.93%	14.95%
2	4	15	2.144	0.0405	1.510	0.381	0.180	0.276	0.236	70.43%	1.89%	25.23%	11.92%	18.28%	15.63%
2	4	16	2.316	0.0372	1.645	0.418	0.183	0.285	0.254	71.03%	1.61%	25.41%	11.12%	17.33%	15.44%
2	4	17	2.040	0.0343	1.410	0.341	0.164	0.242	0.212	69.12%	1.68%	24.18%	11.63%	17.16%	15.04%
2	4	18	2.136	0.0225	1.535	0.387	0.185	0.274	0.228	71.86%	1.05%	25.21%	12.05%	17.85%	14.85%
2	4	19	2.314	0.0379	1.635	0.415	0.184	0.297	0.236	70.66%	1.64%	25.38%	11.25%	18.17%	14.43%
2	4	20	2.270	0.0394	1.590	0.415	0.172	0.305	0.235	70.04%	1.74%	26.10%	10.82%	19.18%	14.78%
Number of Birds		10													
Pen Average			2.228	0.0362	1.571	0.394	0.182	0.284	0.233	70.46%	1.63%	25.08%	11.62%	18.07%	14.83%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
6	8	511	2.496	0.0382	1.785	0.452	0.198	0.316	0.238	71.51%	1.53%	25.32%	11.09%	17.70%	13.33%
6	8	512	2.074	0.0264	1.425	0.336	0.182	0.231	0.201	68.71%	1.27%	23.58%	12.77%	16.21%	14.11%
6	8	513	2.174	0.0258	1.585	0.349	0.195	0.286	0.226	72.91%	1.19%	22.02%	12.30%	18.04%	14.26%
6	8	514	2.366	0.0336	1.650	0.422	0.196	0.291	0.236	69.74%	1.42%	25.58%	11.88%	17.64%	14.30%
6	8	515	2.596	0.0456	1.895	0.522	0.201	0.311	0.245	73.00%	1.76%	27.55%	10.61%	16.41%	12.93%
6	8	516	2.754	0.0423	1.970	0.511	0.218	0.355	0.272	71.53%	1.54%	25.94%	11.07%	18.02%	13.81%
6	8	517	2.260	0.0446	1.690	0.434	0.184	0.278	0.213	74.78%	1.97%	25.68%	10.89%	16.45%	12.60%
6	8	518	2.776	0.0459	1.975	0.512	0.217	0.345	0.270	71.15%	1.65%	25.92%	10.99%	17.47%	13.67%
6	8	519	2.014	0.0256	1.415	0.294	0.160	0.263	0.202	70.26%	1.27%	20.78%	11.31%	18.59%	14.28%
6	8	520	2.250	0.0372	1.580	0.386	0.186	0.279	0.225	70.22%	1.65%	24.43%	11.77%	17.66%	14.24%
Number of Birds		10													
Pen Average			2.376	0.0365	1.697	0.422	0.194	0.296	0.233	71.38%	1.53%	24.68%	11.47%	17.42%	13.75%
4	9	21	2.330	0.0328	1.635	0.426	0.197	0.291	0.222	70.17%	1.41%	26.06%	12.05%	17.80%	13.58%
4	9	22	2.824	0.0617	2.010	0.526	0.229	0.327	0.277	71.18%	2.18%	26.17%	11.39%	16.27%	13.78%
4	9	23	2.248	0.0333	1.605	0.463	0.188	0.268	0.223	71.40%	1.48%	28.85%	11.71%	16.70%	13.89%
4	9	25	2.602	0.0389	1.835	0.493	0.201	0.335	0.256	70.52%	1.50%	26.87%	10.95%	18.26%	13.95%
4	9	26	2.862	0.0549	2.045	0.518	0.225	0.387	0.297	71.45%	1.92%	25.33%	11.00%	18.92%	14.52%
4	9	27	2.574	0.0347	1.855	0.474	0.223	0.356	0.239	72.07%	1.35%	25.55%	12.02%	19.19%	12.88%
4	9	28	2.712	0.0497	1.920	0.481	0.202	0.357	0.281	70.80%	1.83%	25.05%	10.52%	18.59%	14.64%
4	9	29	2.038	0.0162	1.430	0.410	0.170	0.222	0.204	70.17%	0.79%	28.67%	11.89%	15.52%	14.27%
Number of Birds		8													
Pen Average			2.524	0.0403	1.792	0.474	0.204	0.318	0.250	70.97%	1.56%	26.57%	11.44%	17.66%	13.94%
5	12	31	2.330	0.0405	1.650	0.392	0.190	0.311	0.235	70.82%	1.74%	23.76%	11.52%	18.85%	14.24%
5	12	32	2.464	0.0562	1.710	0.384	0.197	0.312	0.256	69.40%	2.28%	22.46%	11.52%	18.25%	14.97%
5	12	33	2.086	0.0300	1.445	0.341	0.182	0.278	0.199	69.27%	1.44%	23.60%	12.60%	19.24%	13.77%
5	12	34	2.550	0.0331	1.780	0.422	0.201	0.355	0.278	69.80%	1.30%	23.71%	11.29%	19.94%	15.62%
5	12	35	2.566	0.0442	1.830	0.486	0.211	0.336	0.258	71.32%	1.72%	26.56%	11.53%	18.36%	14.10%
5	12	36	2.546	0.0241	1.800	0.454	0.201	0.323	0.255	70.70%	0.95%	25.22%	11.17%	17.94%	14.17%
5	12	37	2.866	0.0354	2.075	0.474	0.241	0.340	0.298	72.40%	1.24%	22.84%	11.61%	16.39%	14.36%
5	12	38	2.650	0.0354	1.885	0.556	0.211	0.315	0.255	71.13%	1.34%	29.50%	11.19%	16.71%	13.53%
5	12	39	2.190	0.0226	1.535	0.372	0.186	0.272	0.218	70.09%	1.03%	24.23%	12.12%	17.72%	14.20%
5	12	40	2.394	0.0408	1.695	0.438	0.192	0.296	0.236	70.80%	1.70%	25.84%	11.33%	17.46%	13.92%
Number of Birds		10													
Pen Average			2.464	0.0362	1.741	0.432	0.201	0.314	0.249	70.57%	1.47%	24.77%	11.59%	18.09%	14.29%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex slip (female bird)

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
3	16	531	2.554	0.0573	1.765	0.394	0.222	0.326	0.228	69.11%	2.24%	22.32%	12.58%	18.47%	12.92%
3	16	532	2.318	0.0332	1.630	0.408	0.188	0.292	0.241	70.32%	1.43%	25.03%	11.53%	17.91%	14.79%
3	16	533	2.470	0.0667	1.745	0.425	0.216	0.309	0.250	70.65%	2.70%	24.36%	12.38%	17.71%	14.33%
3	16	534	2.416	0.0530	1.700	0.422	0.197	0.311	0.228	70.36%	2.19%	24.82%	11.59%	18.29%	13.41%
3	16	535	2.232	0.0280	1.570	0.394	0.185	0.263	0.229	70.34%	1.25%	25.10%	11.78%	16.75%	14.59%
3	16	536	2.460	0.0464	1.715	0.450	0.196	0.299	0.241	69.72%	1.89%	26.24%	11.43%	17.43%	14.05%
3	16	537	2.038	0.0397	1.415	0.329	0.169	0.232	0.203	69.43%	1.95%	23.25%	11.94%	16.40%	14.35%
3	16	538	2.346	0.0331	1.685	0.419	0.189	0.302	0.232	71.82%	1.41%	24.87%	11.22%	17.92%	13.77%
3	16	539	2.354	0.0359	1.690	0.445	0.186	0.285	0.242	71.79%	1.53%	26.33%	11.01%	16.86%	14.32%
3	16	540	2.240	0.0404	1.570	0.398	0.186	0.247	0.231	70.09%	1.80%	25.35%	11.85%	15.73%	14.71%
Number of Birds		10													
Pen Average			2.343	0.0434	1.649	0.408	0.193	0.287	0.233	70.36%	1.84%	24.77%	11.73%	17.35%	14.12%
4	17	41	2.114	0.0308	1.475	0.375	0.171	0.272	0.211	69.77%	1.46%	25.42%	11.59%	18.44%	14.31%
4	17	42	2.172	0.0361	1.545	0.400	0.180	0.273	0.206	71.13%	1.66%	25.89%	11.65%	17.67%	13.33%
4	17	43	2.298	0.0425	1.620	0.390	0.193	0.290	0.257	70.50%	1.85%	24.07%	11.91%	17.90%	15.86%
4	17	44	2.246	0.0272	1.590	0.439	0.188	0.270	0.223	70.79%	1.21%	27.61%	11.82%	16.98%	14.03%
4	17	45	2.010	0.0360	1.395	0.332	0.156	0.250	0.205	69.40%	1.79%	23.80%	11.18%	17.92%	14.70%
4	17	46	1.800	0.0261	1.235	0.295	0.157	0.219	0.176	68.61%	1.45%	23.89%	12.71%	17.73%	14.25%
4	17	47	2.540	0.0386	1.760	0.479	0.196	0.306	0.247	69.29%	1.52%	27.22%	11.14%	17.39%	14.03%
4	17	48	2.352	0.0371	1.685	0.447	0.195	0.302	0.225	71.64%	1.58%	26.53%	11.57%	17.92%	13.35%
4	17	49	2.408	0.0366	1.680	0.379	0.194	0.293	0.223	69.77%	1.52%	22.56%	11.55%	17.44%	13.27%
Number of Birds		9													
Pen Average			2.216	0.0346	1.554	0.393	0.181	0.275	0.219	70.10%	1.56%	25.22%	11.68%	17.71%	14.13%
3	19	541	2.006	0.0352	1.385	0.322	0.172	0.247	0.186	69.04%	1.75%	23.25%	12.42%	17.83%	13.43%
3	19	542	2.436	0.0424	1.720	0.472	0.194	0.296	0.229	70.61%	1.74%	27.44%	11.28%	17.21%	13.31%
3	19	543	2.502	0.0351	1.750	0.463	0.188	0.284	0.250	69.94%	1.40%	26.46%	10.74%	16.23%	14.29%
3	19	544	2.330	0.0323	1.660	0.413	0.196	0.295	0.246	71.24%	1.39%	24.88%	11.81%	17.77%	14.82%
3	19	545	2.770	0.0440	1.935	0.482	0.210	0.350	0.264	69.86%	1.59%	24.91%	10.85%	18.09%	13.64%
3	19	546	2.516	0.0399	1.775	0.437	0.199	0.316	0.256	70.55%	1.59%	24.62%	11.21%	17.80%	14.42%
3	19	547	2.268	0.0510	1.540	0.367	0.182	0.269	0.219	67.90%	2.25%	23.83%	11.82%	17.47%	14.22%
3	19	548	2.520	0.0310	1.785	0.531	0.202	0.283	0.232	70.83%	1.23%	29.75%	11.32%	15.85%	13.00%
3	19	549	2.298	0.0215	1.665	0.449	0.192	0.293	0.238	72.45%	0.94%	26.97%	11.53%	17.60%	14.29%
3	19	550	2.608	0.0257	1.845	0.471	0.220	0.313	0.262	70.74%	0.99%	25.53%	11.92%	16.96%	14.20%
Number of Birds		10													
Pen Average			2.425	0.0358	1.706	0.441	0.196	0.295	0.238	70.32%	1.49%	25.76%	11.49%	17.28%	13.96%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
1	26	51	2.204	0.0212	1.590	0.427	0.207	0.272	0.203	72.14%	0.96%	26.86%	13.02%	17.11%	12.77%
1	26	52	2.270	0.0321	1.600	0.423	0.201	0.290	0.226	70.48%	1.41%	26.44%	12.56%	18.13%	14.13%
1	26	53	2.506	0.0445	1.715	0.400	0.208	0.311	0.244	68.44%	1.78%	23.32%	12.13%	18.13%	14.23%
1	26	54	2.322	0.0398	1.655	0.409	0.193	0.299	0.223	71.27%	1.71%	24.71%	11.66%	18.07%	13.47%
1	26	55	2.426	0.0336	1.775	0.489	0.198	0.314	0.242	73.17%	1.38%	27.55%	11.15%	17.69%	13.63%
1	26	56	2.518	0.0362	1.720	0.445	0.213	0.273	0.246	68.31%	1.44%	25.87%	12.38%	15.87%	14.30%
1	26	57	2.486	0.0247	1.805	0.516	0.216	0.311	0.263	72.61%	0.99%	28.59%	11.97%	17.23%	14.57%
1	26	58	2.394	0.0302	1.715	0.459	0.203	0.321	0.239	71.64%	1.26%	26.76%	11.84%	18.72%	13.94%
1	26	59	2.512	0.0260	1.790	0.421	0.210	0.308	0.255	71.26%	1.04%	23.52%	11.73%	17.21%	14.25%
1	26	60	2.490	0.0461	1.760	0.496	0.205	0.309	0.244	70.68%	1.85%	28.18%	11.65%	17.56%	13.86%
Number of Birds		10													
Pen Average			2.413	0.0334	1.713	0.449	0.205	0.301	0.239	71.00%	1.38%	26.18%	12.01%	17.57%	13.91%
6	27	551	2.626	0.0378	1.805	0.455	0.201	0.306	0.249	68.74%	1.44%	25.21%	11.14%	16.95%	13.80%
6	27	552	2.306	0.0318	1.685	0.451	0.189	0.288	0.229	73.07%	1.38%	26.77%	11.22%	17.09%	13.59%
6	27	553	2.208	0.0326	1.515	0.357	0.177	0.282	0.235	68.61%	1.48%	23.56%	11.68%	18.61%	15.51%
6	27	554	1.728	0.0325	1.210	0.287	0.132	0.195	0.167	70.02%	1.88%	23.72%	10.91%	16.12%	13.80%
6	27	555	2.516	0.0462	1.765	0.465	0.204	0.304	0.252	70.15%	1.84%	26.35%	11.56%	17.22%	14.28%
6	27	556	2.026	0.0329	1.365	0.311	0.164	0.229	0.200	67.37%	1.62%	22.78%	12.01%	16.78%	14.65%
6	27	557	2.090	0.0378	1.465	0.352	0.168	0.279	0.200	70.10%	1.81%	24.03%	11.47%	19.04%	13.65%
6	27	558	2.364	0.0309	1.620	0.432	0.193	0.307	0.211	68.53%	1.31%	26.67%	11.91%	18.95%	13.02%
6	27	559	2.016	0.0290	1.435	0.284	0.175	0.278	0.220	71.18%	1.44%	19.79%	12.20%	19.37%	15.33%
6	27	560	2.460	0.0206	1.730	0.370	0.207	0.327	0.262	70.33%	0.84%	21.39%	11.97%	18.90%	15.14%
Number of Birds		10													
Pen Average			2.234	0.0332	1.560	0.376	0.181	0.280	0.223	69.81%	1.50%	24.03%	11.61%	17.90%	14.28%
2	30	561	1.966	0.0279	1.370	0.349	0.169	0.216	0.195	69.68%	1.42%	25.47%	12.34%	15.77%	14.23%
2	30	562	2.438	0.0369	1.720	0.432	0.208	0.286	0.250	70.55%	1.51%	25.12%	12.09%	16.63%	14.53%
2	30	563	2.386	0.0358	1.705	0.430	0.202	0.297	0.242	71.46%	1.50%	25.22%	11.85%	17.42%	14.19%
2	30	564	2.152	0.0318	1.470	0.363	0.180	0.251	0.211	68.31%	1.48%	24.69%	12.24%	17.07%	14.35%
2	30	565	2.040	0.0340	1.430	0.337	0.174	0.237	0.188	70.10%	1.67%	23.57%	12.17%	16.57%	13.15%
2	30	566	2.154	0.0374	1.500	0.356	0.183	0.271	0.225	69.64%	1.74%	23.73%	12.20%	18.07%	15.00%
2	30	567	2.532	0.0408	1.795	0.452	0.210	0.298	0.264	70.89%	1.61%	25.18%	11.70%	16.60%	14.71%
2	30	568	2.490	0.0187	1.800	0.462	0.212	0.328	0.284	72.29%	0.75%	25.67%	11.78%	18.22%	15.78%
2	30	569	2.436	0.0382	1.755	0.475	0.198	0.285	0.255	72.04%	1.57%	27.07%	11.28%	16.24%	14.53%
2	30	570	1.968	0.0290	1.360	0.332	0.175	0.225	0.191	69.11%	1.47%	24.41%	12.87%	16.54%	14.04%
Number of Birds		10													
Pen Average			2.256	0.0331	1.591	0.399	0.191	0.269	0.231	70.41%	1.47%	25.01%	12.05%	16.91%	14.45%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex slip (female bird)

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
8	31	71	2.192	0.0230	1.540	0.345	0.183	0.267	0.238	70.26%	1.05%	22.40%	11.88%	17.34%	15.45%
8	31	72	2.364	0.0492	1.635	0.402	0.184	0.320	0.246	69.16%	2.08%	24.59%	11.25%	19.57%	15.05%
8	31	73	2.222	0.0342	1.555	0.363	0.177	0.281	0.246	69.98%	1.54%	23.34%	11.38%	18.07%	15.82%
8	31	74	1.706	0.0286	1.155	0.274	0.122	0.207	0.171	67.70%	1.68%	23.72%	10.56%	17.92%	14.81%
8	31	75	2.534	0.0397	1.800	0.429	0.205	0.297	0.262	71.03%	1.57%	23.83%	11.39%	16.50%	14.56%
8	31	76	2.632	0.0356	1.860	0.485	0.221	0.319	0.254	70.67%	1.35%	26.08%	11.88%	17.15%	13.66%
8	31	77	2.388	0.0330	1.695	0.429	0.196	0.290	0.257	70.98%	1.38%	25.31%	11.56%	17.11%	15.16%
8	31	78	2.574	0.0300	1.855	0.494	0.208	0.322	0.264	72.07%	1.17%	26.63%	11.21%	17.36%	14.23%
8	31	79	2.442	0.0383	1.720	0.472	0.203	0.312	0.244	70.43%	1.57%	27.44%	11.80%	18.14%	14.19%
Number of Birds		9													
Pen Average			2.339	0.0346	1.646	0.410	0.189	0.291	0.242	70.25%	1.49%	24.82%	11.44%	17.68%	14.77%
5	32	571	2.364	0.0327	1.665	0.433	0.188	0.294	0.241	70.43%	1.38%	26.01%	11.29%	17.66%	14.47%
5	32	572	1.998	0.0258	1.355	0.330	0.180	0.226	0.191	67.82%	1.29%	24.35%	13.28%	16.68%	14.10%
5	32	573	2.334	0.0485	1.635	0.454	0.191	0.299	0.230	70.05%	2.08%	27.77%	11.68%	18.29%	14.07%
5	32	574	2.446	0.0195	1.760	0.455	0.202	0.302	0.249	71.95%	0.80%	25.85%	11.48%	17.16%	14.15%
5	32	575	2.476	0.0280	1.755	0.472	0.202	0.307	0.254	70.88%	1.13%	26.89%	11.51%	17.49%	14.47%
5	32	576	2.236	0.0275	1.570	0.412	0.186	0.268	0.229	70.21%	1.23%	26.24%	11.85%	17.07%	14.59%
5	32	577	2.220	0.0453	1.555	0.361	0.191	0.271	0.225	70.05%	2.04%	23.22%	12.28%	17.43%	14.47%
5	32	578	2.582	0.0245	1.845	0.455	0.209	0.342	0.287	71.46%	0.95%	24.66%	11.33%	18.54%	15.56%
5	32	579	2.698	0.0383	1.930	0.502	0.222	0.334	0.258	71.53%	1.42%	26.01%	11.50%	17.31%	13.37%
Number of Birds		9													
Pen Average			2.373	0.0322	1.674	0.430	0.197	0.294	0.240	70.49%	1.37%	25.67%	11.80%	17.51%	14.36%
2	34	81	2.626	0.0441	1.920	0.510	0.215	0.346	0.294	73.12%	1.68%	26.56%	11.20%	18.02%	15.31%
2	34	82	2.308	0.0219	1.600	0.397	0.184	0.259	0.242	69.32%	0.95%	24.81%	11.50%	16.19%	15.13%
2	34	83	2.322	0.0276	1.645	0.442	0.189	0.284	0.235	70.84%	1.19%	26.87%	11.49%	17.26%	14.29%
2	34	84	2.564	0.0410	1.840	0.497	0.215	0.301	0.273	71.76%	1.60%	27.01%	11.68%	16.36%	14.84%
2	34	85	2.052	0.0383	1.430	0.342	0.178	0.249	0.210	69.69%	1.87%	23.92%	12.45%	17.41%	14.69%
2	34	86	2.626	0.0570	1.900	0.502	0.206	0.317	0.263	72.35%	2.17%	26.42%	10.84%	16.68%	13.84%
2	34	87	2.272	0.0300	1.610	0.411	0.196	0.275	0.238	70.86%	1.32%	25.53%	12.17%	17.08%	14.78%
2	34	88	2.552	0.0390	1.860	0.484	0.214	0.325	0.273	72.88%	1.53%	26.02%	11.51%	17.47%	14.68%
2	34	89	2.612	0.0414	1.835	0.459	0.216	0.317	0.265	70.25%	1.58%	25.01%	11.77%	17.28%	14.44%
2	34	90	2.752	0.0559	1.950	0.444	0.219	0.356	0.281	70.86%	2.03%	22.77%	11.23%	18.26%	14.41%
Number of Birds		10													
Pen Average			2.469	0.0396	1.759	0.449	0.203	0.303	0.257	71.19%	1.59%	25.49%	11.58%	17.20%	14.64%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
4	39	91	2.494	0.0437	1.780	0.468	0.204	0.287	0.223	71.37%	1.75%	26.29%	11.46%	16.12%	12.53%
4	39	92	2.372	0.0436	1.675	0.432	0.208	0.270	0.250	70.62%	1.84%	25.79%	12.42%	16.12%	14.93%
4	39	93	2.484	0.0411	1.765	0.477	0.185	0.296	0.244	71.05%	1.65%	27.03%	10.48%	16.77%	13.82%
4	39	94	2.472	0.0426	1.735	0.446	0.208	0.316	0.233	70.19%	1.72%	25.71%	11.99%	18.21%	13.43%
4	39	95	2.614	0.0319	1.865	0.550	0.213	0.284	0.276	71.35%	1.22%	29.49%	11.42%	15.23%	14.80%
4	39	96	2.254	0.0258	1.580	0.390	0.202	0.250	0.246	70.10%	1.14%	24.68%	12.78%	15.82%	15.57%
4	39	97	2.432	0.0271	1.705	0.430	0.203	0.285	0.244	70.11%	1.11%	25.22%	11.91%	16.72%	14.31%
4	39	98	2.594	0.0281	1.830	0.500	0.206	0.318	0.248	70.55%	1.08%	27.32%	11.26%	17.38%	13.55%
4	39	99	2.292	0.0412	1.620	0.411	0.164	0.266	0.229	70.68%	1.80%	25.37%	10.12%	16.42%	14.14%
4	39	100	2.390	0.0528	1.710	0.393	0.199	0.295	0.238	71.55%	2.21%	22.98%	11.64%	17.25%	13.92%
Number of Birds		10													
Pen Average			2.440	0.0378	1.727	0.450	0.199	0.287	0.243	70.76%	1.55%	25.99%	11.55%	16.60%	14.10%
3	40	591	2.266	0.0270	1.590	0.448	0.196	0.272	0.239	70.17%	1.19%	28.18%	12.33%	17.11%	15.03%
3	40	592	2.306	0.0306	1.610	0.399	0.175	0.275	0.239	69.82%	1.33%	24.78%	10.87%	17.08%	14.84%
3	40	593	2.514	0.0497	1.750	0.445	0.201	0.318	0.266	69.61%	1.98%	25.43%	11.49%	18.17%	15.20%
3	40	594	2.518	0.0391	1.755	0.417	0.193	0.306	0.250	69.70%	1.55%	23.76%	11.00%	17.44%	14.25%
3	40	595	2.074	0.0233	1.440	0.363	0.162	0.242	0.225	69.43%	1.12%	25.21%	11.25%	16.81%	15.63%
3	40	596	2.442	0.0287	1.705	0.426	0.214	0.289	0.241	69.82%	1.18%	24.99%	12.55%	16.95%	14.13%
3	40	597	2.822	0.0182	2.030	0.536	0.209	0.337	0.279	71.93%	0.64%	26.40%	10.30%	16.60%	13.74%
3	40	598	2.452	0.0414	1.750	0.456	0.210	0.311	0.238	71.37%	1.69%	26.06%	12.00%	17.77%	13.60%
Number of Birds		8													
Pen Average			2.424	0.0323	1.704	0.436	0.195	0.294	0.247	70.23%	1.34%	25.60%	11.47%	17.24%	14.55%
8	42	101	2.606	0.0352	1.835	0.426	0.218	0.329	0.275	70.41%	1.35%	23.22%	11.88%	17.93%	14.99%
8	42	102	2.118	0.0391	1.515	0.338	0.181	0.276	0.208	71.53%	1.85%	22.31%	11.95%	18.22%	13.73%
8	42	103	2.486	0.0306	1.740	0.450	0.199	0.300	0.248	69.99%	1.23%	25.86%	11.44%	17.24%	14.25%
8	42	104	2.338	0.0246	1.615	0.416	0.188	0.295	0.254	69.08%	1.05%	25.76%	11.64%	18.27%	15.73%
8	42	105	2.482	0.0146	1.760	0.447	0.199	0.288	0.247	70.91%	0.59%	25.40%	11.31%	16.36%	14.03%
8	42	106	2.374	0.0388	1.715	0.420	0.195	0.306	0.228	72.24%	1.63%	24.49%	11.37%	17.84%	13.29%
8	42	107	3.090	0.0405	2.305	0.614	0.241	0.422	0.329	74.60%	1.31%	26.64%	10.46%	18.31%	14.27%
8	42	108	2.470	0.0341	1.765	0.467	0.189	0.307	0.250	71.46%	1.38%	26.46%	10.71%	17.39%	14.16%
8	42	109	2.534	0.0247	1.815	0.514	0.211	0.328	0.257	71.63%	0.97%	28.32%	11.63%	18.07%	14.16%
8	42	110	2.332	0.0454	1.665	0.440	0.198	0.299	0.241	71.40%	1.95%	26.43%	11.89%	17.96%	14.47%
Number of Birds		10													
Pen Average			2.483	0.0328	1.773	0.453	0.202	0.315	0.254	71.32%	1.33%	25.49%	11.43%	17.76%	14.31%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex slip (female bird)

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
5	45	601	2.380	0.0260	1.710	0.449	0.206	0.314	0.238	71.85%	1.09%	26.26%	12.05%	18.36%	13.92%
5	45	602	2.314	0.0295	1.600	0.395	0.185	0.300	0.236	69.14%	1.27%	24.69%	11.56%	18.75%	14.75%
5	45	603	2.390	0.0281	1.675	0.449	0.205	0.296	0.215	70.08%	1.18%	26.81%	12.24%	17.67%	12.84%
5	45	604	2.498	0.0323	1.775	0.464	0.207	0.302	0.255	71.06%	1.29%	26.14%	11.66%	17.01%	14.37%
5	45	605	2.524	0.0259	1.805	0.425	0.221	0.318	0.270	71.51%	1.03%	23.55%	12.24%	17.62%	14.96%
5	45	606	2.620	0.0338	1.855	0.437	0.205	0.336	0.262	70.80%	1.29%	23.56%	11.05%	18.11%	14.12%
5	45	607	2.510	0.0298	1.785	0.445	0.210	0.292	0.273	71.12%	1.19%	24.93%	11.76%	16.36%	15.29%
5	45	608	2.176	0.0262	1.580	0.379	0.179	0.276	0.236	72.61%	1.20%	23.99%	11.33%	17.47%	14.94%
5	45	609	2.326	0.0343	1.645	0.417	0.188	0.282	0.225	70.72%	1.47%	25.35%	11.43%	17.14%	13.68%
5	45	610	2.660	0.0386	1.910	0.501	0.210	0.340	0.269	71.80%	1.45%	26.23%	10.99%	17.80%	14.08%
Number of Birds		10													
Pen Average			2.440	0.0305	1.734	0.436	0.202	0.306	0.248	71.07%	1.25%	25.15%	11.63%	17.63%	14.29%
1	47	111	2.548	0.0428	1.775	0.410	0.203	0.325	0.267	69.66%	1.68%	23.10%	11.44%	18.31%	15.04%
1	47	112	2.512	0.0403	1.690	0.440	0.211	0.310	0.226	67.28%	1.60%	26.04%	12.49%	18.34%	13.37%
1	47	113	2.342	0.0236	1.685	0.426	0.202	0.303	0.257	71.95%	1.01%	25.28%	11.99%	17.98%	15.25%
1	47	115	2.490	0.0706	1.725	0.396	0.208	0.305	0.229	69.28%	2.84%	22.96%	12.06%	17.68%	13.28%
1	47	116	2.540	0.0192	1.815	0.455	0.206	0.322	0.270	71.46%	0.76%	25.07%	11.35%	17.74%	14.88%
1	47	117	2.598	0.0375	1.785	0.458	0.215	0.309	0.246	68.71%	1.44%	25.66%	12.04%	17.31%	13.78%
1	47	118	2.678	0.0336	1.885	0.506	0.217	0.299	0.262	70.39%	1.25%	26.84%	11.51%	15.86%	13.90%
1	47	119	2.626	0.0323	1.875	0.468	0.205	0.334	0.268	71.40%	1.23%	24.96%	10.93%	17.81%	14.29%
1	47	120	2.536	0.0334	1.785	0.479	0.209	0.315	0.251	70.39%	1.32%	26.83%	11.71%	17.65%	14.06%
Number of Birds		9													
Pen Average			2.541	0.0370	1.780	0.449	0.208	0.314	0.253	70.06%	1.46%	25.19%	11.72%	17.63%	14.21%
6	48	611	2.454	0.0281	1.720	0.442	0.197	0.305	0.239	70.09%	1.15%	25.70%	11.45%	17.73%	13.90%
6	48	612	1.922	0.0432	1.315	0.331	0.155	0.229	0.183	68.42%	2.25%	25.17%	11.79%	17.41%	13.92%
6	48	613	2.254	0.0317	1.570	0.391	0.192	0.280	0.240	69.65%	1.41%	24.90%	12.23%	17.83%	15.29%
6	48	614	2.058	0.0245	1.420	0.308	0.176	0.257	0.232	69.00%	1.19%	21.69%	12.39%	18.10%	16.34%
6	48	615	2.474	0.0561	1.725	0.420	0.190	0.302	0.245	69.73%	2.27%	24.35%	11.01%	17.51%	14.20%
6	48	616	2.712	0.0372	1.940	0.504	0.221	0.356	0.276	71.53%	1.37%	25.98%	11.39%	18.35%	14.23%
6	48	617	2.542	0.0388	1.800	0.442	0.203	0.326	0.244	70.81%	1.53%	24.56%	11.28%	18.11%	13.56%
6	48	618	2.066	0.0351	1.465	0.359	0.171	0.261	0.233	70.91%	1.70%	24.51%	11.67%	17.82%	15.90%
6	48	619	2.648	0.0480	1.845	0.488	0.203	0.343	0.276	69.68%	1.81%	26.45%	11.00%	18.59%	14.96%
Number of Birds		9													
Pen Average			2.348	0.0381	1.644	0.409	0.190	0.295	0.241	69.98%	1.63%	24.81%	11.58%	17.94%	14.70%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
5	49	121	2.530	0.0349	1.755	0.426	0.199	0.281	0.248	69.37%	1.38%	24.27%	11.34%	16.01%	14.13%
5	49	123	2.250	0.0420	1.570	0.411	0.187	0.272	0.214	69.78%	1.87%	26.18%	11.91%	17.32%	13.63%
5	49	124	2.598	0.0415	1.850	0.438	0.205	0.338	0.272	71.21%	1.60%	23.68%	11.08%	18.27%	14.70%
5	49	125	2.570	0.0412	1.785	0.440	0.198	0.308	0.264	69.46%	1.60%	24.65%	11.09%	17.25%	14.79%
5	49	126	2.392	0.0281	1.740	0.458	0.192	0.313	0.262	72.74%	1.17%	26.32%	11.03%	17.99%	15.06%
5	49	127	2.188	0.0172	1.585	0.453	0.178	0.260	0.243	72.44%	0.79%	28.58%	11.23%	16.40%	15.33%
5	49	128	2.294	0.0314	1.645	0.386	0.192	0.320	0.248	71.71%	1.37%	23.47%	11.67%	19.45%	15.08%
5	49	129	2.406	0.0489	1.700	0.441	0.193	0.276	0.238	70.66%	2.03%	25.94%	11.35%	16.24%	14.00%
5	49	130	2.262	0.0384	1.575	0.405	0.193	0.276	0.216	69.63%	1.70%	25.71%	12.25%	17.52%	13.71%
Number of Birds		9													
Pen Average			2.388	0.0360	1.689	0.429	0.193	0.294	0.245	70.78%	1.50%	25.42%	11.44%	17.39%	14.49%
8	50	621	2.502	0.0435	1.775	0.458	0.200	0.326	0.263	70.94%	1.74%	25.80%	11.27%	18.37%	14.82%
8	50	622	2.430	0.0411	1.720	0.425	0.203	0.301	0.253	70.78%	1.69%	24.71%	11.80%	17.50%	14.71%
8	50	623	2.444	0.0391	1.725	0.457	0.195	0.300	0.266	70.58%	1.60%	26.49%	11.30%	17.39%	15.42%
8	50	624	2.478	0.0295	1.765	0.424	0.218	0.314	0.268	71.23%	1.19%	24.02%	12.35%	17.79%	15.18%
8	50	625	2.196	0.0345	1.540	0.395	0.180	0.275	0.211	70.13%	1.57%	25.65%	11.69%	17.86%	13.70%
8	50	626	2.164	0.0164	1.555	0.382	0.182	0.278	0.238	71.86%	0.76%	24.57%	11.70%	17.88%	15.31%
8	50	627	2.474	0.0182	1.750	0.445	0.215	0.319	0.254	70.74%	0.74%	25.43%	12.29%	18.23%	14.51%
8	50	628	2.000	0.0271	1.410	0.340	0.168	0.230	0.211	70.50%	1.36%	24.11%	11.91%	16.31%	14.96%
8	50	629	2.264	0.0202	1.610	0.401	0.190	0.246	0.233	71.11%	0.89%	24.91%	11.80%	15.28%	14.47%
8	50	630	2.210	0.0277	1.570	0.400	0.189	0.263	0.227	71.04%	1.25%	25.48%	12.04%	16.75%	14.46%
Number of Birds		10													
Pen Average			2.316	0.0297	1.642	0.413	0.194	0.285	0.242	70.89%	1.28%	25.12%	11.82%	17.34%	14.75%
2	54	131	2.628	0.0820	1.855	0.479	0.207	0.347	0.249	70.59%	3.12%	25.82%	11.16%	18.71%	13.42%
2	54	132	2.324	0.0413	1.645	0.407	0.190	0.267	0.238	70.78%	1.78%	24.74%	11.55%	16.23%	14.47%
2	54	133	2.108	0.0300	1.520	0.376	0.177	0.267	0.243	72.11%	1.42%	24.74%	11.64%	17.57%	15.99%
2	54	134	2.334	0.0326	1.710	0.434	0.188	0.282	0.262	73.26%	1.40%	25.38%	10.99%	16.49%	15.32%
2	54	135	2.354	0.0212	1.645	0.381	0.194	0.309	0.250	69.88%	0.90%	23.16%	11.79%	18.78%	15.20%
2	54	136	2.310	0.0313	1.670	0.435	0.202	0.299	0.231	72.29%	1.35%	26.05%	12.10%	17.90%	13.83%
2	54	137	2.670	0.0374	1.895	0.473	0.214	0.344	0.283	70.97%	1.40%	24.96%	11.29%	18.15%	14.93%
2	54	138	2.200	0.0378	1.545	0.380	0.180	0.270	0.240	70.23%	1.72%	24.60%	11.65%	17.48%	15.53%
2	54	139	2.372	0.0271	1.670	0.418	0.193	0.284	0.231	70.40%	1.14%	25.03%	11.56%	17.01%	13.83%
2	54	140	2.356	0.0236	1.710	0.432	0.209	0.300	0.273	72.58%	1.00%	25.26%	12.22%	17.54%	15.96%
Number of Birds		10													
Pen Average			2.366	0.0364	1.687	0.422	0.195	0.297	0.250	71.31%	1.52%	24.97%	11.60%	17.59%	14.85%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex slip (female bird)

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
1	56	141	2.174	0.0351	1.510	0.396	0.178	0.260	0.224	69.46%	1.61%	26.23%	11.79%	17.22%	14.83%
1	56	142	2.498	0.0125	1.810	0.438	0.204	0.313	0.272	72.46%	0.50%	24.20%	11.27%	17.29%	15.03%
1	56	143	2.576	0.0240	1.875	0.474	0.216	0.320	0.278	72.79%	0.93%	25.28%	11.52%	17.07%	14.83%
1	56	144	2.626	0.0417	1.870	0.475	0.203	0.326	0.253	71.21%	1.59%	25.40%	10.86%	17.43%	13.53%
1	56	145	2.236	0.0279	1.590	0.389	0.196	0.286	0.239	71.11%	1.25%	24.47%	12.33%	17.99%	15.03%
1	56	146	2.364	0.0352	1.660	0.424	0.187	0.295	0.261	70.22%	1.49%	25.54%	11.27%	17.77%	15.72%
1	56	147	2.278	0.0442	1.610	0.412	0.192	0.264	0.233	70.68%	1.94%	25.59%	11.93%	16.40%	14.47%
1	56	148	2.456	0.0284	1.750	0.416	0.196	0.311	0.269	71.25%	1.16%	23.77%	11.20%	17.77%	15.37%
1	56	149ss	2.034	0.0449	1.445	0.364	0.175	0.241	0.208	71.04%	2.21%	25.19%	12.11%	16.68%	14.39%
1	56	150	2.636	0.0452	1.860	0.453	0.210	0.324	0.271	70.56%	1.71%	24.35%	11.29%	17.42%	14.57%
Number of Birds		10													
Pen Average			2.388	0.0339	1.698	0.424	0.196	0.294	0.251	71.08%	1.44%	25.00%	11.56%	17.30%	14.78%
6	58	641	2.266	0.0273	1.560	0.323	0.193	0.278	0.248	68.84%	1.20%	20.71%	12.37%	17.82%	15.90%
6	58	642	2.652	0.0393	1.885	0.447	0.209	0.335	0.273	71.08%	1.48%	23.71%	11.09%	17.77%	14.48%
6	58	643	2.490	0.0597	1.755	0.440	0.202	0.310	0.265	70.48%	2.40%	25.07%	11.51%	17.66%	15.10%
6	58	644	2.324	0.0284	1.660	0.422	0.201	0.298	0.253	71.43%	1.22%	25.42%	12.11%	17.95%	15.24%
6	58	645	2.244	0.0282	1.605	0.372	0.177	0.295	0.254	71.52%	1.26%	23.18%	11.03%	18.38%	15.83%
6	58	646	2.344	0.0440	1.625	0.350	0.193	0.316	0.251	69.33%	1.88%	21.54%	11.88%	19.45%	15.45%
6	58	647	2.128	0.0363	1.530	0.386	0.178	0.282	0.221	71.90%	1.71%	25.23%	11.63%	18.43%	14.44%
6	58	648	2.208	0.0246	1.595	0.414	0.196	0.275	0.227	72.24%	1.11%	25.96%	12.29%	17.24%	14.23%
6	58	649	2.650	0.0333	1.885	0.417	0.218	0.326	0.288	71.13%	1.26%	22.12%	11.56%	17.29%	15.28%
6	58	650	2.594	0.0294	1.885	0.488	0.235	0.319	0.259	72.67%	1.13%	25.89%	12.47%	16.92%	13.74%
Number of Birds		10													
Pen Average			2.390	0.0351	1.699	0.406	0.200	0.303	0.254	71.06%	1.47%	23.88%	11.79%	17.89%	14.97%
3	62	151	2.464	0.0299	1.725	0.412	0.201	0.307	0.256	70.01%	1.21%	23.88%	11.65%	17.80%	14.84%
3	62	152	1.940	0.0139	1.385	0.364	0.157	0.213	0.202	71.39%	0.72%	26.28%	11.34%	15.38%	14.58%
3	62	153	2.262	0.0357	1.600	0.392	0.180	0.300	0.248	70.73%	1.58%	24.50%	11.25%	18.75%	15.50%
3	62	154	2.390	0.0389	1.745	0.467	0.198	0.310	0.233	73.01%	1.63%	26.76%	11.35%	17.77%	13.35%
3	62	155	2.280	0.0352	1.620	0.376	0.197	0.307	0.242	71.05%	1.54%	23.21%	12.16%	18.95%	14.94%
3	62	156	2.518	0.0392	1.790	0.489	0.205	0.343	0.248	71.09%	1.56%	27.32%	11.45%	19.16%	13.85%
3	62	157	2.376	0.0473	1.705	0.436	0.198	0.298	0.230	71.76%	1.99%	25.57%	11.61%	17.48%	13.49%
3	62	158	2.174	0.0423	1.545	0.421	0.178	0.270	0.192	71.07%	1.95%	27.25%	11.52%	17.48%	12.43%
3	62	159	2.802	0.0452	2.030	0.528	0.223	0.330	0.291	72.45%	1.61%	26.01%	10.99%	16.26%	14.33%
3	62	160	2.404	0.0405	1.690	0.454	0.206	0.274	0.237	70.30%	1.68%	26.86%	12.19%	16.21%	14.02%
Number of Birds		10													
Pen Average			2.361	0.0368	1.684	0.434	0.194	0.295	0.238	71.29%	1.55%	25.77%	11.55%	17.52%	14.13%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
4	64	651	2.646	0.0428	1.875	0.391	0.203	0.339	0.297	70.86%	1.62%	20.85%	10.83%	18.08%	15.84%
4	64	652	2.622	0.0409	1.875	0.474	0.222	0.352	0.280	71.51%	1.56%	25.28%	11.84%	18.77%	14.93%
4	64	653	2.308	0.0412	1.610	0.404	0.192	0.275	0.245	69.76%	1.79%	25.09%	11.93%	17.08%	15.22%
4	64	654	2.042	0.0250	1.465	0.350	0.171	0.249	0.213	71.74%	1.22%	23.89%	11.67%	17.00%	14.54%
4	64	655	2.764	0.0326	1.975	0.504	0.212	0.344	0.298	71.45%	1.18%	25.52%	10.73%	17.42%	15.09%
4	64	656	2.046	0.0259	1.410	0.339	0.171	0.259	0.220	68.91%	1.27%	24.04%	12.13%	18.37%	15.60%
4	64	657	2.610	0.0346	1.790	0.444	0.200	0.290	0.252	68.58%	1.33%	24.80%	11.17%	16.20%	14.08%
4	64	658	2.300	0.0268	1.625	0.451	0.179	0.255	0.232	70.65%	1.17%	27.75%	11.02%	15.69%	14.28%
4	64	659	1.944	0.0177	1.390	0.335	0.172	0.257	0.204	71.50%	0.91%	24.10%	12.37%	18.49%	14.68%
Number of Birds		9													
Pen Average			2.365	0.0319	1.668	0.410	0.191	0.291	0.249	70.55%	1.34%	24.59%	11.52%	17.46%	14.92%
8	67	161	2.340	0.0226	1.685	0.390	0.194	0.320	0.265	72.01%	0.97%	23.15%	11.51%	18.99%	15.73%
8	67	162	2.022	0.0322	1.420	0.394	0.164	0.240	0.216	70.23%	1.59%	27.75%	11.55%	16.90%	15.21%
8	67	163	2.528	0.0184	1.790	0.491	0.190	0.314	0.251	70.81%	0.73%	27.43%	10.61%	17.54%	14.02%
8	67	164	2.150	0.0299	1.480	0.352	0.179	0.271	0.222	68.84%	1.39%	23.78%	12.09%	18.31%	15.00%
8	67	165	2.456	0.0327	1.670	0.389	0.208	0.299	0.232	68.00%	1.33%	23.29%	12.46%	17.90%	13.89%
8	67	166	2.492	0.0254	1.785	0.447	0.202	0.321	0.248	71.63%	1.02%	25.04%	11.32%	17.98%	13.89%
8	67	167	2.502	0.0355	1.765	0.457	0.206	0.292	0.270	70.54%	1.42%	25.89%	11.67%	16.54%	15.30%
8	67	168	2.622	0.0412	1.825	0.470	0.204	0.326	0.265	69.60%	1.57%	25.75%	11.18%	17.86%	14.52%
8	67	169	2.184	0.0285	1.555	0.427	0.184	0.270	0.220	71.20%	1.30%	27.46%	11.83%	17.36%	14.15%
8	67	170	2.204	0.0142	1.555	0.394	0.187	0.248	0.210	70.55%	0.64%	25.34%	12.03%	15.95%	13.50%
Number of Birds		10													
Pen Average			2.350	0.0281	1.653	0.421	0.192	0.290	0.240	70.34%	1.20%	25.49%	11.63%	17.54%	14.52%
4	69	661	2.562	0.0632	1.800	0.433	0.209	0.315	0.261	70.26%	2.47%	24.06%	11.61%	17.50%	14.50%
4	69	662	2.858	0.0443	2.060	0.553	0.230	0.339	0.302	72.08%	1.55%	26.84%	11.17%	16.46%	14.66%
4	69	663	2.066	0.0349	1.420	0.330	0.175	0.238	0.225	68.73%	1.69%	23.24%	12.32%	16.76%	15.85%
4	69	664	2.032	0.0312	1.435	0.383	0.165	0.228	0.201	70.62%	1.54%	26.69%	11.50%	15.89%	14.01%
4	69	665	2.336	0.0322	1.610	0.396	0.189	0.281	0.234	68.92%	1.38%	24.60%	11.74%	17.45%	14.53%
4	69	666	2.822	0.0466	1.995	0.488	0.245	0.334	0.291	70.69%	1.65%	24.46%	12.28%	16.74%	14.59%
4	69	667	2.876	0.0374	2.060	0.520	0.234	0.370	0.281	71.63%	1.30%	25.24%	11.36%	17.96%	13.64%
4	69	668	2.828	0.0473	2.050	0.552	0.223	0.326	0.277	72.49%	1.67%	26.93%	10.88%	15.90%	13.51%
4	69	669	2.488	0.0371	1.740	0.430	0.192	0.296	0.252	69.94%	1.49%	24.71%	11.03%	17.01%	14.48%
4	69	670	2.606	0.0470	1.860	0.466	0.226	0.330	0.258	71.37%	1.80%	25.05%	12.15%	17.74%	13.87%
Number of Birds		10													
Pen Average			2.547	0.0421	1.803	0.455	0.209	0.306	0.258	70.67%	1.65%	25.18%	11.60%	16.94%	14.36%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex slip (female bird)

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
1	70	171	2.368	0.0225	1.685	0.467	0.204	0.273	0.251	71.16%	0.95%	27.72%	12.11%	16.20%	14.90%
1	70	172	2.566	0.0282	1.865	0.474	0.205	0.346	0.296	72.68%	1.10%	25.42%	10.99%	18.55%	15.87%
1	70	173	2.150	0.0194	1.510	0.323	0.181	0.264	0.241	70.23%	0.90%	21.39%	11.99%	17.48%	15.96%
1	70	174	2.652	0.0320	1.910	0.463	0.243	0.316	0.287	72.02%	1.21%	24.24%	12.72%	16.54%	15.03%
1	70	175	2.118	0.0313	1.515	0.394	0.169	0.256	0.223	71.53%	1.48%	26.01%	11.16%	16.90%	14.72%
1	70	176	2.654	0.0398	1.895	0.441	0.216	0.342	0.303	71.40%	1.50%	23.27%	11.40%	18.05%	15.99%
1	70	177	2.596	0.0408	1.895	0.501	0.197	0.337	0.274	73.00%	1.57%	26.44%	10.40%	17.78%	14.46%
1	70	178	2.556	0.0111	1.850	0.465	0.213	0.299	0.260	72.38%	0.43%	25.14%	11.51%	16.16%	14.05%
1	70	179	2.436	0.0403	1.765	0.435	0.208	0.328	0.247	72.45%	1.65%	24.65%	11.78%	18.58%	13.99%
1	70	180	2.758	0.0750	1.950	0.517	0.222	0.336	0.242	70.70%	2.72%	26.51%	11.38%	17.23%	12.41%
Number of Birds		10													
Pen Average			2.485	0.0340	1.784	0.448	0.206	0.310	0.262	71.76%	1.35%	25.08%	11.54%	17.35%	14.74%
6	75	181	2.254	0.0383	1.630	0.399	0.196	0.302	0.238	72.32%	1.70%	24.48%	12.02%	18.53%	14.60%
6	75	182	2.076	0.0149	1.460	0.355	0.172	0.261	0.220	70.33%	0.72%	24.32%	11.78%	17.88%	15.07%
6	75	183	2.228	0.0329	1.600	0.422	0.187	0.266	0.227	71.81%	1.48%	26.38%	11.69%	16.63%	14.19%
6	75	184	2.562	0.0419	1.825	0.458	0.198	0.325	0.261	71.23%	1.64%	25.10%	10.85%	17.81%	14.30%
6	75	185	2.618	0.0282	1.880	0.478	0.214	0.336	0.278	71.81%	1.08%	25.43%	11.38%	17.87%	14.79%
6	75	186	2.582	0.0327	1.850	0.477	0.215	0.341	0.279	71.65%	1.27%	25.78%	11.62%	18.43%	15.08%
6	75	187	2.530	0.0370	1.830	0.469	0.212	0.310	0.266	72.33%	1.46%	25.63%	11.58%	16.94%	14.54%
6	75	188	2.772	0.0417	2.015	0.468	0.218	0.347	0.293	72.69%	1.50%	23.23%	10.82%	17.22%	14.54%
6	75	189	2.246	0.0302	1.570	0.363	0.189	0.279	0.228	69.90%	1.34%	23.12%	12.04%	17.77%	14.52%
6	75	190	2.704	0.0395	1.975	0.501	0.218	0.368	0.300	73.04%	1.46%	25.37%	11.04%	18.63%	15.19%
Number of Birds		10													
Pen Average			2.457	0.0337	1.764	0.439	0.202	0.314	0.259	71.71%	1.36%	24.88%	11.48%	17.77%	14.68%
3	77	681	2.196	0.0593	1.555	0.365	0.173	0.276	0.209	70.81%	2.70%	23.47%	11.13%	17.75%	13.44%
3	77	682	2.320	0.0381	1.625	0.397	0.180	0.281	0.239	70.04%	1.64%	24.43%	11.08%	17.29%	14.71%
3	77	683	2.734	0.0589	1.950	0.454	0.232	0.355	0.285	71.32%	2.15%	23.28%	11.90%	18.21%	14.62%
3	77	684	2.354	0.0287	1.650	0.397	0.199	0.299	0.230	70.09%	1.22%	24.06%	12.06%	18.12%	13.94%
3	77	685	2.444	0.0474	1.725	0.388	0.212	0.310	0.264	70.58%	1.94%	22.49%	12.29%	17.97%	15.30%
3	77	686	2.352	0.0316	1.680	0.466	0.196	0.277	0.238	71.43%	1.34%	27.74%	11.67%	16.49%	14.17%
3	77	687	2.742	0.0472	2.010	0.546	0.217	0.341	0.296	73.30%	1.72%	27.16%	10.80%	16.97%	14.73%
3	77	688	2.190	0.0148	1.600	0.394	0.187	0.249	0.219	73.06%	0.68%	24.63%	11.69%	15.56%	13.69%
3	77	689	2.572	0.0285	1.890	0.506	0.217	0.349	0.267	73.48%	1.11%	26.77%	11.48%	18.47%	14.13%
Number of Birds		9													
Pen Average			2.434	0.0394	1.743	0.435	0.201	0.304	0.250	71.57%	1.61%	24.89%	11.56%	17.42%	14.30%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P2. Individual male bird processing data at 43 days of age (8/24/00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
5	78	191	2.658	0.0462	1.885	0.426	0.223	0.318	0.274	70.92%	1.74%	22.60%	11.83%	16.87%	14.54%
5	78	192	2.544	0.0304	1.810	0.464	0.217	0.318	0.282	71.15%	1.19%	25.64%	11.99%	17.57%	15.58%
5	78	193	2.394	0.0374	1.675	0.398	0.186	0.303	0.266	69.97%	1.56%	23.76%	11.10%	18.09%	15.88%
5	78	194	2.448	0.0332	1.715	0.404	0.194	0.313	0.254	70.06%	1.36%	23.56%	11.31%	18.25%	14.81%
5	78	195	2.132	0.0332	1.510	0.349	0.181	0.257	0.217	70.83%	1.56%	23.11%	11.99%	17.02%	14.37%
5	78	196	2.234	0.0453	1.570	0.373	0.192	0.263	0.239	70.28%	2.03%	23.76%	12.23%	16.75%	15.22%
5	78	197	2.262	0.0337	1.550	0.370	0.187	0.269	0.227	68.52%	1.49%	23.87%	12.06%	17.35%	14.65%
5	78	198	2.056	0.0273	1.430	0.311	0.182	0.263	0.212	69.55%	1.33%	21.75%	12.73%	18.39%	14.83%
5	78	199	2.374	0.0501	1.670	0.380	0.204	0.310	0.239	70.35%	2.11%	22.75%	12.22%	18.56%	14.31%
Number of Birds		9													
Pen Average			2.345	0.0374	1.646	0.386	0.196	0.290	0.246	70.18%	1.60%	23.42%	11.94%	17.65%	14.91%
2	79	691	2.192	0.0370	1.570	0.405	0.180	0.288	0.211	71.62%	1.69%	25.80%	11.46%	18.34%	13.44%
2	79	692	2.226	0.0265	1.585	0.404	0.188	0.267	0.241	71.20%	1.19%	25.49%	11.86%	16.85%	15.21%
2	79	693	2.490	0.0354	1.775	0.410	0.210	0.303	0.256	71.29%	1.42%	23.10%	11.83%	17.07%	14.42%
2	79	694	2.638	0.0376	1.870	0.456	0.214	0.319	0.264	70.89%	1.43%	24.39%	11.44%	17.06%	14.12%
2	79	695	2.054	0.0246	1.470	0.371	0.183	0.244	0.225	71.57%	1.20%	25.24%	12.45%	16.60%	15.31%
2	79	696	2.642	0.0319	1.880	0.540	0.209	0.311	0.262	71.16%	1.21%	28.72%	11.12%	16.54%	13.94%
2	79	697	2.510	0.0455	1.775	0.444	0.195	0.333	0.251	70.72%	1.81%	25.01%	10.99%	18.76%	14.14%
2	79	698	2.682	0.0380	1.935	0.515	0.223	0.343	0.270	72.15%	1.42%	26.61%	11.52%	17.73%	13.95%
2	79	699	2.048	0.0252	1.500	0.414	0.169	0.228	0.205	73.24%	1.23%	27.60%	11.27%	15.20%	13.67%
2	79	700	2.246	0.0232	1.550	0.407	0.185	0.273	0.219	69.01%	1.03%	26.26%	11.94%	17.61%	14.13%
Number of Birds		10													
Pen Average			2.373	0.0325	1.691	0.437	0.196	0.291	0.240	71.28%	1.36%	25.82%	11.59%	17.18%	14.23%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex slip (female bird)

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
5	3	201	1.700	0.0336	1.245	0.287	0.144	0.182	0.176	73.24%	1.98%	23.05%	11.57%	14.62%	14.14%
5	3	202	2.076	0.0314	1.505	0.374	0.171	0.281	0.198	72.50%	1.51%	24.85%	11.36%	18.67%	13.16%
5	3	203	1.942	0.0323	1.370	0.382	0.162	0.199	0.185	70.55%	1.66%	27.88%	11.82%	14.53%	13.50%
5	3	204	1.954	0.0414	1.370	0.336	0.166	0.244	0.191	70.11%	2.12%	24.53%	12.12%	17.81%	13.94%
5	3	205	2.108	0.0373	1.500	0.364	0.159	0.230	0.210	71.16%	1.77%	24.27%	10.60%	15.33%	14.00%
5	3	206	2.024	0.0466	1.420	0.352	0.169	0.264	0.203	70.16%	2.30%	24.79%	11.90%	18.59%	14.30%
5	3	207	2.174	0.0412	1.535	0.404	0.175	0.262	0.213	70.61%	1.90%	26.32%	11.40%	17.07%	13.88%
5	3	208	2.262	0.0367	1.620	0.423	0.180	0.250	0.210	71.62%	1.62%	26.11%	11.11%	15.43%	12.96%
5	3	209ss	2.450	0.0429	1.775	0.457	0.206	0.318	0.258	72.45%	1.75%	25.75%	11.61%	17.92%	14.54%
5	3	210	2.232	0.0387	1.580	0.407	0.186	0.288	0.200	70.79%	1.73%	25.76%	11.77%	18.23%	12.66%
Number of Birds		10													
Pen Average			2.092	0.0382	1.492	0.379	0.172	0.252	0.204	71.32%	1.83%	25.33%	11.53%	16.82%	13.71%
1	5	701	1.992	0.0280	1.440	0.349	0.180	0.246	0.202	72.29%	1.41%	24.24%	12.50%	17.08%	14.03%
1	5	702	2.228	0.0238	1.575	0.409	0.184	0.272	0.224	70.69%	1.07%	25.97%	11.68%	17.27%	14.22%
1	5	703	2.184	0.0203	1.570	0.401	0.193	0.250	0.238	71.89%	0.93%	25.54%	12.29%	15.92%	15.16%
1	5	704	2.164	0.0410	1.555	0.448	0.177	0.256	0.207	71.86%	1.89%	28.81%	11.38%	16.46%	13.31%
1	5	705	2.010	0.0240	1.460	0.388	0.155	0.248	0.187	72.64%	1.19%	26.58%	10.62%	16.99%	12.81%
1	5	706	2.302	0.0497	1.650	0.418	0.186	0.275	0.208	71.68%	2.16%	25.33%	11.27%	16.67%	12.61%
1	5	707	2.102	0.0367	1.490	0.385	0.177	0.261	0.216	70.88%	1.75%	25.84%	11.88%	17.52%	14.50%
1	5	708	2.072	0.0412	1.505	0.401	0.163	0.255	0.211	72.64%	1.99%	26.64%	10.83%	16.94%	14.02%
1	5	709	2.078	0.0466	1.480	0.366	0.177	0.257	0.197	71.22%	2.24%	24.73%	11.96%	17.36%	13.31%
1	5	710	2.240	0.0492	1.595	0.402	0.179	0.282	0.212	71.21%	2.20%	25.20%	11.22%	17.68%	13.29%
Number of Birds		10													
Pen Average			2.137	0.0361	1.532	0.397	0.177	0.260	0.210	71.70%	1.68%	25.89%	11.56%	16.99%	13.73%
6	6	211	2.306	0.0429	1.635	0.435	0.185	0.268	0.215	70.90%	1.86%	26.61%	11.31%	16.39%	13.15%
6	6	212	1.348	0.0112	0.960	0.240	0.122	0.148	0.142	71.22%	0.83%	25.00%	12.71%	15.42%	14.79%
6	6	213	1.842	0.0249	1.315	0.342	0.158	0.213	0.187	71.39%	1.35%	26.01%	12.02%	16.20%	14.22%
6	6	214	2.004	0.0230	1.440	0.387	0.172	0.244	0.201	71.86%	1.15%	26.88%	11.94%	16.94%	13.96%
6	6	215	2.010	0.0203	1.435	0.347	0.170	0.246	0.210	71.39%	1.01%	24.18%	11.85%	17.14%	14.63%
6	6	216	1.880	0.0330	1.315	0.339	0.163	0.218	0.182	69.95%	1.76%	25.78%	12.40%	16.58%	13.84%
6	6	217	2.346	0.0633	1.645	0.416	0.181	0.298	0.209	70.12%	2.70%	25.29%	11.00%	18.12%	12.71%
6	6	218	1.620	0.0570	1.140	0.259	0.140	0.185	0.140	70.37%	3.52%	22.72%	12.28%	16.23%	12.28%
6	6	219	1.948	0.0598	1.350	0.344	0.163	0.235	0.181	69.30%	3.07%	25.48%	12.07%	17.41%	13.41%
6	6	220	2.354	0.0558	1.720	0.438	0.193	0.281	0.230	73.07%	2.37%	25.47%	11.22%	16.34%	13.37%
Number of Birds		10													
Pen Average			1.966	0.0391	1.396	0.355	0.165	0.234	0.190	70.96%	1.96%	25.34%	11.88%	16.68%	13.64%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
8	10	221	1.922	0.0248	1.380	0.361	0.164	0.256	0.201	71.80%	1.29%	26.16%	11.88%	18.55%	14.57%
8	10	222	2.198	0.0463	1.565	0.376	0.198	0.270	0.221	71.20%	2.11%	24.03%	12.65%	17.25%	14.12%
8	10	223	2.338	0.0323	1.710	0.490	0.183	0.324	0.232	73.14%	1.38%	28.65%	10.70%	18.95%	13.57%
8	10	224	2.030	0.0341	1.440	0.382	0.166	0.252	0.190	70.94%	1.68%	26.53%	11.53%	17.50%	13.19%
8	10	225	2.034	0.0369	1.425	0.359	0.171	0.244	0.179	70.06%	1.81%	25.19%	12.00%	17.12%	12.56%
8	10	226	1.794	0.0285	1.275	0.342	0.157	0.218	0.179	71.07%	1.59%	26.82%	12.31%	17.10%	14.04%
8	10	227	2.164	0.0464	1.510	0.390	0.194	0.270	0.211	69.78%	2.14%	25.83%	12.85%	17.88%	13.97%
8	10	228	2.226	0.0475	1.590	0.433	0.181	0.303	0.230	71.43%	2.13%	27.23%	11.38%	19.06%	14.47%
8	10	229	2.082	0.0302	1.490	0.393	0.182	0.244	0.212	71.57%	1.45%	26.38%	12.21%	16.38%	14.23%
8	10	230	2.100	0.0360	1.550	0.440	0.174	0.251	0.215	73.81%	1.71%	28.39%	11.23%	16.19%	13.87%
Number of Birds		10													
Pen Average			2.089	0.0363	1.494	0.397	0.177	0.263	0.207	71.48%	1.73%	26.52%	11.88%	17.60%	13.86%
3	13	721	2.174	0.0258	1.535	0.372	0.194	0.272	0.215	70.61%	1.19%	24.23%	12.64%	17.72%	14.01%
3	13	722	2.334	0.0343	1.680	0.462	0.195	0.271	0.229	71.98%	1.47%	1.83%	11.61%	16.13%	13.63%
3	13	723	2.138	0.0369	1.480	0.393	0.175	0.246	0.218	69.22%	1.73%	26.55%	11.82%	16.62%	14.73%
3	13	724	2.216	0.0429	1.565	0.421	0.174	0.251	0.219	70.62%	1.94%	26.90%	11.12%	16.04%	13.99%
3	13	725	1.950	0.0434	1.400	0.361	0.160	0.233	0.184	71.79%	2.23%	25.79%	11.43%	16.64%	13.14%
3	13	726	2.210	0.0565	1.580	0.455	0.183	0.251	0.204	71.49%	2.56%	28.80%	11.58%	15.89%	12.91%
3	13	727	2.056	0.0360	1.455	0.391	0.164	0.267	0.204	70.77%	1.75%	26.87%	11.27%	18.35%	14.02%
3	13	728	2.220	0.0427	1.565	0.432	0.176	0.257	0.203	70.50%	1.92%	27.60%	11.25%	16.42%	12.97%
3	13	729	2.386	0.0663	1.705	0.407	0.186	0.294	0.223	71.46%	2.78%	23.87%	10.91%	17.24%	13.08%
3	13	730	2.406	0.0421	1.715	0.431	0.213	0.274	0.238	71.28%	1.75%	25.13%	12.42%	15.98%	13.88%
Number of Birds		10													
Pen Average			2.209	0.0427	1.568	0.413	0.182	0.262	0.214	70.97%	1.93%	23.76%	11.60%	16.70%	13.64%
2	14	231	2.080	0.0361	1.490	0.352	0.173	0.279	0.230	71.63%	1.74%	23.62%	11.61%	18.72%	15.44%
2	14	232	2.074	0.0393	1.425	0.372	0.166	0.224	0.216	68.71%	1.89%	26.11%	11.65%	15.72%	15.16%
2	14	233	1.620	0.0376	1.140	0.255	0.145	0.191	0.159	70.37%	2.32%	22.37%	12.72%	16.75%	13.95%
2	14	234	2.220	0.0390	1.595	0.375	0.190	0.281	0.232	71.85%	1.76%	23.51%	11.91%	17.62%	14.55%
2	14	235	2.044	0.0398	1.505	0.351	0.169	0.258	0.221	73.63%	1.95%	23.32%	11.23%	17.14%	14.68%
2	14	236	2.150	0.0500	1.515	0.362	0.174	0.247	0.227	70.47%	2.33%	23.89%	11.49%	16.30%	14.98%
2	14	237	1.972	0.0342	1.400	0.372	0.156	0.203	0.187	70.99%	1.73%	26.57%	11.14%	14.50%	13.36%
2	14	238	1.898	0.0462	1.325	0.322	0.166	0.237	0.201	69.81%	2.43%	24.30%	12.53%	17.89%	15.17%
2	14	239	1.868	0.0300	1.325	0.350	0.152	0.215	0.187	70.93%	1.61%	26.42%	11.47%	16.23%	14.11%
2	14	240	2.034	0.0340	1.415	0.356	0.176	0.230	0.190	69.57%	1.67%	25.16%	12.44%	16.25%	13.43%
Number of Birds		10													
Pen Average			1.996	0.0386	1.414	0.347	0.167	0.237	0.205	70.80%	1.94%	24.53%	11.82%	16.71%	14.48%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex-slip (male bird)

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
4	15	731	2.344	0.0448	1.660	0.401	0.191	0.275	0.219	70.82%	1.91%	24.16%	11.51%	16.57%	13.19%
4	15	732	2.296	0.0415	1.620	0.404	0.195	0.270	0.221	70.56%	1.81%	24.94%	12.04%	16.67%	13.64%
4	15	733	2.138	0.0581	1.530	0.436	0.172	0.278	0.200	71.56%	2.72%	28.50%	11.24%	18.17%	13.07%
4	15	734	1.966	0.0270	1.370	0.342	0.166	0.236	0.182	69.68%	1.37%	24.96%	12.12%	17.23%	13.28%
4	15	735	2.378	0.0334	1.700	0.450	0.193	0.294	0.245	71.49%	1.40%	26.47%	11.35%	17.29%	14.41%
4	15	736	2.184	0.0339	1.515	0.378	0.183	0.277	0.210	69.37%	1.55%	24.95%	12.08%	18.28%	13.86%
4	15	737	2.092	0.0382	1.480	0.385	0.177	0.271	0.209	70.75%	1.83%	26.01%	11.96%	18.31%	14.12%
4	15	738	2.314	0.0436	1.635	0.389	0.194	0.269	0.226	70.66%	1.88%	23.79%	11.87%	16.45%	13.82%
4	15	739	2.334	0.0271	1.660	0.423	0.186	0.275	0.230	71.12%	1.16%	25.48%	11.20%	16.57%	13.86%
4	15	740	2.016	0.0315	1.460	0.393	0.172	0.244	0.198	72.42%	1.56%	26.92%	11.78%	16.71%	13.56%
Number of Birds		10													
Pen Average			2.206	0.0379	1.563	0.400	0.183	0.269	0.214	70.84%	1.72%	25.62%	11.71%	17.22%	13.68%
4	18	241	2.052	0.0462	1.450	0.364	0.169	0.246	0.181	70.66%	2.25%	25.10%	11.66%	16.97%	12.48%
4	18	242	1.850	0.0232	1.305	0.343	0.157	0.208	0.173	70.54%	1.25%	26.28%	12.03%	15.94%	13.26%
4	18	243	1.978	0.0334	1.405	0.386	0.167	0.205	0.198	71.03%	1.69%	27.47%	11.89%	14.59%	14.09%
4	18	244	2.326	0.0530	1.670	0.427	0.198	0.278	0.233	71.80%	2.28%	25.57%	11.86%	16.65%	13.95%
4	18	245	2.108	0.0508	1.480	0.366	0.170	0.268	0.191	70.21%	2.41%	24.73%	11.49%	18.11%	12.91%
4	18	246	1.962	0.0422	1.380	0.369	0.174	0.230	0.186	70.34%	2.15%	26.74%	12.61%	16.67%	13.48%
4	18	247	2.064	0.0431	1.455	0.353	0.173	0.254	0.185	70.49%	2.09%	24.26%	11.89%	17.46%	12.71%
4	18	248	2.074	0.0201	1.555	0.442	0.181	0.246	0.207	74.98%	0.97%	28.42%	11.64%	15.82%	13.31%
4	18	249	2.172	0.0389	1.520	0.369	0.177	0.238	0.201	69.98%	1.79%	24.28%	11.64%	15.66%	13.22%
4	18	250	2.268	0.0369	1.630	0.417	0.183	0.272	0.233	71.87%	1.63%	25.58%	11.23%	16.69%	14.29%
Number of Birds		10													
Pen Average			2.085	0.0388	1.485	0.384	0.175	0.245	0.199	71.19%	1.85%	25.84%	11.79%	16.45%	13.37%
6	20	741	2.212	0.0291	1.540	0.400	0.196	0.248	0.206	69.62%	1.32%	25.97%	12.73%	16.10%	13.38%
6	20	742	2.064	0.0344	1.505	0.403	0.161	0.270	0.203	72.92%	1.67%	26.78%	10.70%	17.94%	13.49%
6	20	743	2.312	0.0380	1.665	0.391	0.205	0.287	0.228	72.02%	1.64%	23.48%	12.31%	17.24%	13.69%
6	20	744	1.984	0.0364	1.400	0.386	0.158	0.238	0.194	70.56%	1.83%	27.57%	11.29%	17.00%	13.86%
6	20	745	1.978	0.0326	1.410	0.393	0.166	0.246	0.188	71.28%	1.65%	27.87%	11.77%	17.45%	13.33%
6	20	746	2.172	0.0223	1.575	0.367	0.187	0.281	0.213	72.51%	1.03%	23.30%	11.87%	17.84%	13.52%
6	20	747	1.862	0.0237	1.305	0.312	0.173	0.231	0.198	70.09%	1.27%	23.91%	13.26%	17.70%	15.17%
6	20	748ss	2.664	0.0359	1.900	0.508	0.226	0.318	0.272	71.32%	1.35%	26.74%	11.89%	16.74%	14.32%
6	20	749	2.240	0.0425	1.560	0.420	0.193	0.258	0.206	69.64%	1.90%	26.92%	12.37%	16.54%	13.21%
6	20	750	2.282	0.0361	1.615	0.404	0.189	0.287	0.237	70.77%	1.58%	25.02%	11.70%	17.77%	14.67%
Number of Birds		10													
Pen Average			2.177	0.0331	1.548	0.398	0.185	0.266	0.215	71.07%	1.52%	25.76%	11.99%	17.23%	13.86%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
5	22	751	1.906	0.0470	1.345	0.323	0.148	0.255	0.202	70.57%	2.47%	24.01%	11.00%	18.96%	15.02%
5	22	752	1.972	0.0404	1.370	0.366	0.166	0.226	0.199	69.47%	2.05%	26.72%	12.12%	16.50%	14.53%
5	22	753	2.056	0.0412	1.425	0.325	0.166	0.236	0.195	69.31%	2.00%	22.81%	11.65%	16.56%	13.68%
5	22	754	2.412	0.0657	1.695	0.411	0.200	0.289	0.241	70.27%	2.72%	24.25%	11.80%	17.05%	14.22%
5	22	755	2.018	0.0354	1.445	0.401	0.166	0.242	0.201	71.61%	1.75%	27.75%	11.49%	16.75%	13.91%
5	22	756	2.248	0.0557	1.640	0.443	0.178	0.262	0.221	72.95%	2.48%	27.01%	10.85%	15.98%	13.48%
5	22	757	2.136	0.0360	1.550	0.406	0.186	0.251	0.209	72.57%	1.69%	26.19%	12.00%	16.19%	13.48%
5	22	758	2.154	0.0178	1.570	0.407	0.174	0.274	0.229	72.89%	0.83%	25.92%	11.08%	17.45%	14.59%
5	22	759	2.028	0.0468	1.440	0.418	0.162	0.246	0.189	71.01%	2.31%	29.03%	11.25%	17.08%	13.13%
5	22	760	2.368	0.0378	1.695	0.464	0.192	0.275	0.235	71.58%	1.60%	27.37%	11.33%	16.22%	13.86%
Number of Birds		10													
Pen Average			2.130	0.0424	1.518	0.396	0.174	0.256	0.212	71.22%	1.99%	26.11%	11.46%	16.87%	13.99%
3	23	261	1.986	0.0411	1.375	0.368	0.157	0.221	0.187	69.23%	2.07%	26.76%	11.42%	16.07%	13.60%
3	23	262	1.832	0.0203	1.295	0.346	0.146	0.220	0.186	70.69%	1.11%	26.72%	11.27%	16.99%	14.36%
3	23	263	2.104	0.0419	1.490	0.402	0.167	0.244	0.204	70.82%	1.99%	26.98%	11.21%	16.38%	13.69%
3	23	264	2.220	0.0383	1.555	0.353	0.188	0.288	0.232	70.05%	1.73%	22.70%	12.09%	18.52%	14.92%
3	23	265	1.534	0.0250	1.020	0.248	0.129	0.157	0.154	66.49%	1.63%	24.31%	12.65%	15.39%	15.10%
3	23	266	2.144	0.0394	1.510	0.391	0.176	0.259	0.202	70.43%	1.84%	25.89%	11.66%	17.15%	13.38%
3	23	267	2.170	0.0334	1.530	0.411	0.180	0.230	0.217	70.51%	1.54%	26.86%	11.76%	15.03%	14.18%
3	23	268	2.184	0.0409	1.585	0.424	0.198	0.258	0.204	72.57%	1.87%	26.75%	12.49%	16.28%	12.87%
3	23	269	2.164	0.0410	1.515	0.397	0.181	0.254	0.214	70.01%	1.89%	26.20%	11.95%	16.77%	14.13%
3	23	270	2.252	0.0479	1.610	0.433	0.199	0.260	0.215	71.49%	2.13%	26.89%	12.36%	16.15%	13.35%
Number of Birds		10													
Pen Average			2.059	0.0369	1.449	0.377	0.172	0.239	0.202	70.23%	1.78%	26.01%	11.89%	16.47%	13.96%
1	24	761	2.194	0.0327	1.605	0.401	0.187	0.285	0.216	73.15%	1.49%	24.98%	11.65%	17.76%	13.46%
1	24	762	2.066	0.0316	1.475	0.334	0.166	0.272	0.226	71.39%	1.53%	22.64%	11.25%	18.44%	15.32%
1	24	763	2.150	0.0449	1.520	0.341	0.185	0.252	0.232	70.70%	2.09%	22.43%	12.17%	16.58%	15.26%
1	24	764	2.554	0.0434	1.855	0.501	0.213	0.325	0.262	72.63%	1.70%	27.01%	11.48%	17.52%	14.12%
1	24	765	2.176	0.0367	1.575	0.405	0.173	0.281	0.231	72.38%	1.69%	25.71%	10.98%	17.84%	14.67%
1	24	766	2.152	0.0362	1.535	0.392	0.176	0.263	0.224	71.33%	1.68%	25.54%	11.47%	17.13%	14.59%
1	24	767	2.202	0.0637	1.585	0.362	0.184	0.289	0.223	71.98%	2.89%	22.84%	11.61%	18.23%	14.07%
1	24	768	1.996	0.0361	1.405	0.338	0.182	0.245	0.204	70.39%	1.81%	24.06%	12.95%	17.44%	14.52%
1	24	769	2.210	0.0405	1.575	0.429	0.190	0.282	0.223	71.27%	1.83%	27.24%	12.06%	17.90%	14.16%
1	24	770	2.356	0.0424	1.670	0.413	0.200	0.261	0.228	70.88%	1.80%	24.73%	11.98%	15.63%	13.65%
Number of Birds		10													
Pen Average			2.206	0.0408	1.580	0.392	0.186	0.276	0.227	71.61%	1.85%	24.72%	11.76%	17.45%	14.38%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex-slip (male bird)

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
2	25	271	1.968	0.0362	1.355	0.317	0.166	0.222	0.198	68.85%	1.84%	23.39%	12.25%	16.38%	14.61%
2	25	272	1.890	0.0200	1.310	0.328	0.176	0.206	0.180	69.31%	1.06%	25.04%	13.44%	15.73%	13.74%
2	25	273	2.094	0.0319	1.460	0.360	0.179	0.268	0.211	69.72%	1.52%	24.66%	12.26%	18.36%	14.45%
2	25	274	2.058	0.0393	1.430	0.355	0.169	0.238	0.202	69.48%	1.91%	24.83%	11.82%	16.64%	14.13%
2	25	275	2.040	0.0501	1.445	0.378	0.158	0.233	0.191	70.83%	2.46%	26.16%	10.93%	16.12%	13.22%
2	25	276	2.068	0.0378	1.455	0.370	0.168	0.250	0.212	70.36%	1.83%	25.43%	11.55%	17.18%	14.57%
2	25	277	2.094	0.0397	1.455	0.360	0.166	0.244	0.217	69.48%	1.90%	24.74%	11.41%	16.77%	14.91%
2	25	278	1.990	0.0441	1.390	0.336	0.160	0.230	0.183	69.85%	2.22%	24.17%	11.51%	16.55%	13.17%
2	25	279	1.786	0.0246	1.275	0.336	0.150	0.227	0.192	71.39%	1.38%	26.35%	11.76%	17.80%	15.06%
2	25	280	2.038	0.0291	1.490	0.387	0.176	0.253	0.199	73.11%	1.43%	25.97%	11.81%	16.98%	13.36%
Number of Birds		10													
Pen Average			2.003	0.0353	1.407	0.353	0.167	0.237	0.199	70.24%	1.75%	25.07%	11.87%	16.85%	14.12%
8	29	771	2.126	0.0296	1.475	0.411	0.173	0.275	0.203	69.38%	1.39%	27.86%	11.73%	18.64%	13.76%
8	29	772	2.074	0.0250	1.410	0.378	0.171	0.247	0.199	67.98%	1.21%	26.81%	12.13%	17.52%	14.11%
8	29	773	2.108	0.0397	1.510	0.408	0.174	0.237	0.205	71.63%	1.88%	27.02%	11.52%	15.70%	13.58%
8	29	774	2.052	0.0341	1.450	0.367	0.174	0.240	0.190	70.66%	1.66%	25.31%	12.00%	16.55%	13.10%
8	29	775	1.970	0.0268	1.365	0.350	0.167	0.246	0.207	69.29%	1.36%	25.64%	12.23%	18.02%	15.16%
8	29	776	2.346	0.0290	1.675	0.398	0.198	0.318	0.243	71.40%	1.24%	23.76%	11.82%	18.99%	14.51%
8	29	777	2.246	0.0420	1.580	0.411	0.191	0.279	0.226	70.35%	1.87%	26.01%	12.09%	17.66%	14.30%
8	29	778	1.954	0.0262	1.375	0.318	0.183	0.248	0.201	70.37%	1.34%	23.13%	13.31%	18.04%	14.62%
8	29	779	2.230	0.0462	1.590	0.428	0.169	0.292	0.223	71.30%	2.07%	26.92%	10.63%	18.36%	14.03%
8	29	780	1.942	0.0415	1.340	0.336	0.170	0.233	0.182	69.00%	2.14%	25.07%	12.69%	17.39%	13.58%
Number of Birds		10													
Pen Average			2.105	0.0340	1.477	0.381	0.177	0.262	0.208	70.14%	1.62%	25.75%	12.01%	17.69%	14.08%
8	33	281	2.370	0.0530	1.655	0.418	0.203	0.269	0.229	69.83%	2.24%	25.26%	12.27%	16.25%	13.84%
8	33	282	2.140	0.0178	1.525	0.377	0.199	0.259	0.222	71.26%	0.83%	24.72%	13.05%	16.98%	14.56%
8	33	283	2.086	0.0229	1.440	0.370	0.179	0.224	0.205	69.03%	1.10%	25.69%	12.43%	15.56%	14.24%
8	33	284	2.230	0.0370	1.585	0.407	0.182	0.259	0.217	71.08%	1.66%	25.68%	11.48%	16.34%	13.69%
8	33	285	2.186	0.0251	1.585	0.424	0.182	0.245	0.219	72.51%	1.15%	26.75%	11.48%	15.46%	13.82%
8	33	286	1.882	0.0556	1.315	0.337	0.162	0.228	0.182	69.87%	2.95%	25.63%	12.32%	17.34%	13.84%
8	33	287	2.186	0.0404	1.570	0.448	0.182	0.266	0.217	71.82%	1.85%	28.54%	11.59%	16.94%	13.82%
8	33	288	2.172	0.0438	1.560	0.433	0.174	0.244	0.201	71.82%	2.02%	27.76%	11.15%	15.64%	12.88%
8	33	289	1.798	0.0332	1.250	0.267	0.157	0.237	0.191	69.52%	1.85%	21.36%	12.56%	18.96%	15.28%
8	33	290	2.446	0.0350	1.740	0.465	0.199	0.281	0.239	71.14%	1.43%	26.72%	11.44%	16.15%	13.74%
Number of Birds		10													
Pen Average			2.150	0.0364	1.523	0.395	0.182	0.251	0.212	70.79%	1.71%	25.81%	11.98%	16.56%	13.97%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
3	35	781	2.428	0.0569	1.710	0.418	0.195	0.301	0.236	70.43%	2.34%	24.44%	11.40%	17.60%	13.80%
3	35	782	2.262	0.0391	1.625	0.445	0.188	0.250	0.230	71.84%	1.73%	27.38%	11.57%	15.38%	14.15%
3	35	783	2.150	0.0273	1.525	0.433	0.184	0.259	0.214	70.93%	1.27%	28.39%	12.07%	16.98%	14.03%
3	35	784	2.100	0.0399	1.510	0.402	0.180	0.246	0.190	71.90%	1.90%	26.62%	11.92%	16.29%	12.58%
3	35	785	2.414	0.0282	1.715	0.443	0.201	0.300	0.241	71.04%	1.17%	25.83%	11.72%	17.49%	14.05%
3	35	786	1.934	0.0415	1.340	0.308	0.165	0.230	0.194	69.29%	2.15%	22.99%	12.31%	17.16%	14.48%
3	35	787	2.114	0.0628	1.495	0.400	0.171	0.273	0.182	70.72%	2.97%	26.76%	11.44%	18.26%	12.17%
3	35	788	1.948	0.0310	1.425	0.382	0.175	0.223	0.187	73.15%	1.59%	26.81%	12.28%	15.65%	13.12%
3	35	789ss	2.836	0.0519	1.990	0.501	0.227	0.348	0.275	70.17%	1.83%	25.18%	11.41%	17.49%	13.82%
3	35	790	2.096	0.0366	1.485	0.407	0.169	0.254	0.209	70.85%	1.75%	27.41%	11.38%	17.10%	14.07%
Number of Birds		10													
Pen Average			2.228	0.0415	1.582	0.414	0.186	0.268	0.216	71.03%	1.87%	26.18%	11.75%	16.94%	13.63%
2	38	791	2.028	0.0400	1.445	0.376	0.164	0.261	0.208	71.25%	1.97%	26.02%	11.35%	18.06%	14.39%
2	38	792	2.094	0.0383	1.480	0.390	0.166	0.247	0.200	70.68%	1.83%	26.35%	11.22%	16.69%	13.51%
2	38	793	1.878	0.0378	1.335	0.332	0.169	0.216	0.200	71.09%	2.01%	24.87%	12.66%	16.18%	14.98%
2	38	794	2.040	0.0502	1.480	0.427	0.157	0.260	0.203	72.55%	2.46%	28.85%	10.61%	17.57%	13.72%
2	38	795	2.270	0.0403	1.625	0.423	0.182	0.288	0.242	71.59%	1.78%	26.03%	11.20%	17.72%	14.89%
2	38	796	1.936	0.0333	1.335	0.313	0.171	0.219	0.180	68.96%	1.72%	23.45%	12.81%	16.40%	13.48%
2	38	797	1.806	0.0286	1.285	0.353	0.154	0.193	0.168	71.15%	1.58%	27.47%	11.98%	15.02%	13.07%
2	38	798ss	2.640	0.0678	1.865	0.466	0.212	0.293	0.257	70.64%	2.57%	24.99%	11.37%	15.71%	13.78%
2	38	799	1.154	0.0081	0.745	0.141	0.100	0.127	0.103	64.56%	0.70%	18.93%	13.42%	17.05%	13.83%
2	38	800	1.886	0.0285	1.310	0.315	0.162	0.227	0.184	69.46%	1.51%	24.05%	12.37%	17.33%	14.05%
Number of Birds		10													
Pen Average			1.973	0.0373	1.391	0.354	0.164	0.233	0.195	70.19%	1.81%	25.10%	11.90%	16.77%	13.97%
1	41	301	1.990	0.0308	1.435	0.360	0.183	0.224	0.185	72.11%	1.55%	25.09%	12.75%	15.61%	12.89%
1	41	302	2.160	0.0422	1.585	0.454	0.177	0.269	0.211	73.38%	1.95%	28.64%	11.17%	16.97%	13.31%
1	41	303	2.008	0.0357	1.460	0.416	0.162	0.265	0.218	72.71%	1.78%	28.49%	11.10%	18.15%	14.93%
1	41	304	2.066	0.0425	1.475	0.373	0.166	0.249	0.191	71.39%	2.06%	25.29%	11.25%	16.88%	12.95%
1	41	305	1.884	0.0476	1.300	0.324	0.164	0.205	0.183	69.00%	2.53%	24.92%	12.62%	15.77%	14.08%
1	41	306	1.994	0.0337	1.440	0.390	0.163	0.230	0.207	72.22%	1.69%	27.08%	11.32%	15.97%	14.38%
1	41	307	2.076	0.0315	1.430	0.347	0.173	0.229	0.204	68.88%	1.52%	24.27%	12.10%	16.01%	14.27%
1	41	308	2.006	0.0301	1.430	0.387	0.181	0.225	0.181	71.29%	1.50%	27.06%	12.66%	15.73%	12.66%
1	41	309	2.134	0.0385	1.530	0.422	0.161	0.266	0.205	71.70%	1.80%	27.58%	10.52%	17.39%	13.40%
1	41	310	2.204	0.0461	1.565	0.369	0.196	0.262	0.220	71.01%	2.09%	23.58%	12.52%	16.74%	14.06%
Number of Birds		10													
Pen Average			2.052	0.0379	1.465	0.384	0.173	0.242	0.201	71.37%	1.85%	26.20%	11.80%	16.52%	13.69%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex-slip (male bird)

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
4	43	801	2.262	0.0396	1.655	0.454	0.179	0.271	0.218	73.17%	1.75%	27.43%	10.82%	16.37%	13.17%
4	43	802	2.144	0.0447	1.525	0.363	0.181	0.273	0.206	71.13%	2.08%	23.80%	11.87%	17.90%	13.51%
4	43	803	2.176	0.0453	1.605	0.389	0.190	0.278	0.229	73.76%	2.08%	24.24%	11.84%	17.32%	14.27%
4	43	804	2.284	0.0444	1.625	0.446	0.188	0.286	0.229	71.15%	1.94%	27.45%	11.57%	17.60%	14.09%
4	43	805	1.900	0.0258	1.355	0.354	0.158	0.205	0.189	71.32%	1.36%	26.13%	11.66%	15.13%	13.95%
4	43	806	2.488	0.0478	1.810	0.473	0.193	0.302	0.234	72.75%	1.92%	26.13%	10.66%	16.69%	12.93%
4	43	807	2.076	0.0282	1.470	0.390	0.184	0.234	0.211	70.81%	1.36%	26.53%	12.52%	15.92%	14.35%
4	43	808	2.192	0.0488	1.555	0.394	0.180	0.252	0.204	70.94%	2.23%	25.34%	11.58%	16.21%	13.12%
4	43	809	1.946	0.0295	1.405	0.318	0.180	0.229	0.208	72.20%	1.52%	22.63%	12.81%	16.30%	14.80%
4	43	810	2.300	0.0440	1.645	0.428	0.183	0.286	0.221	71.52%	1.91%	26.02%	11.12%	17.39%	13.43%
Number of Birds		10													
Pen Average			2.177	0.0398	1.565	0.401	0.182	0.262	0.215	71.87%	1.82%	25.57%	11.64%	16.68%	13.76%
6	44	311	1.880	0.0349	1.305	0.302	0.159	0.202	0.184	69.41%	1.86%	23.14%	12.18%	15.48%	14.10%
6	44	312	1.904	0.0288	1.365	0.330	0.168	0.228	0.193	71.69%	1.51%	24.18%	12.31%	16.70%	14.14%
6	44	313	2.040	0.0374	1.440	0.361	0.182	0.243	0.210	70.59%	1.83%	25.07%	12.64%	16.88%	14.58%
6	44	314	2.180	0.0457	1.615	0.454	0.173	0.248	0.227	74.08%	2.10%	28.11%	10.71%	15.36%	14.06%
6	44	315	2.614	0.0497	1.880	0.425	0.213	0.333	0.261	71.92%	1.90%	22.61%	11.33%	17.71%	13.88%
6	44	316	2.296	0.0419	1.630	0.445	0.193	0.257	0.217	70.99%	1.82%	27.30%	11.84%	15.77%	13.31%
6	44	317	2.040	0.0344	1.470	0.395	0.172	0.266	0.198	72.06%	1.69%	26.87%	11.70%	18.10%	13.47%
6	44	318	1.958	0.0399	1.405	0.352	0.171	0.221	0.193	71.76%	2.04%	25.05%	12.17%	15.73%	13.74%
6	44	319	2.050	0.0381	1.445	0.366	0.170	0.250	0.198	70.49%	1.86%	25.33%	11.76%	17.30%	13.70%
6	44	320	2.096	0.0290	1.515	0.372	0.187	0.275	0.215	72.28%	1.38%	24.55%	12.34%	18.15%	14.19%
Number of Birds		10													
Pen Average			2.106	0.0380	1.507	0.380	0.179	0.252	0.210	71.53%	1.80%	25.22%	11.90%	16.72%	13.92%
5	46	811	2.336	0.0567	1.680	0.462	0.182	0.296	0.245	71.92%	2.43%	27.50%	10.83%	17.62%	14.58%
5	46	812	2.054	0.0509	1.480	0.407	0.168	0.219	0.219	72.05%	2.48%	27.50%	11.35%	14.80%	14.80%
5	46	813	1.982	0.0321	1.430	0.367	0.162	0.239	0.190	72.15%	1.62%	25.66%	11.33%	16.71%	13.29%
5	46	814	2.102	0.0319	1.515	0.410	0.170	0.246	0.227	72.07%	1.52%	27.06%	11.22%	16.24%	14.98%
5	46	815	2.192	0.0395	1.600	0.408	0.192	0.273	0.213	72.99%	1.80%	25.50%	12.00%	17.06%	13.31%
5	46	816	2.032	0.0558	1.430	0.361	0.162	0.237	0.180	70.37%	2.75%	25.24%	11.33%	16.57%	12.59%
5	46	817	2.060	0.0366	1.505	0.387	0.174	0.266	0.208	73.06%	1.78%	25.71%	11.56%	17.67%	13.82%
5	46	818	2.328	0.0366	1.645	0.445	0.192	0.267	0.214	70.66%	1.57%	27.05%	11.67%	16.23%	13.01%
5	46	819	2.166	0.0373	1.570	0.391	0.172	0.261	0.213	72.48%	1.72%	24.90%	10.96%	16.62%	13.57%
5	46	820	2.164	0.0536	1.550	0.404	0.188	0.249	0.215	71.63%	2.48%	26.06%	12.13%	16.06%	13.87%
Number of Birds		10													
Pen Average			2.142	0.0431	1.541	0.404	0.176	0.255	0.212	71.94%	2.01%	26.22%	11.44%	16.56%	13.78%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
1	51	321	2.228	0.0436	1.610	0.368	0.190	0.270	0.225	72.26%	1.96%	22.86%	11.80%	16.77%	13.98%
1	51	322	1.880	0.0271	1.330	0.356	0.168	0.217	0.188	70.74%	1.44%	26.77%	12.63%	16.32%	14.14%
1	51	323	2.042	0.0282	1.455	0.399	0.159	0.262	0.205	71.25%	1.38%	27.42%	10.93%	18.01%	14.09%
1	51	324	2.300	0.0437	1.610	0.445	0.180	0.276	0.221	70.00%	1.90%	27.64%	11.18%	17.14%	13.73%
1	51	325	2.040	0.0342	1.440	0.365	0.177	0.234	0.186	70.59%	1.68%	25.35%	12.29%	16.25%	12.92%
1	51	326	2.098	0.0427	1.460	0.367	0.180	0.242	0.205	69.59%	2.04%	25.14%	12.33%	16.58%	14.04%
1	51	327	1.810	0.0173	1.255	0.313	0.165	0.207	0.190	69.34%	0.96%	24.94%	13.15%	16.49%	15.14%
1	51	328	1.886	0.0319	1.330	0.322	0.160	0.209	0.198	70.52%	1.69%	24.21%	12.03%	15.71%	14.89%
1	51	329	2.032	0.0391	1.420	0.357	0.167	0.260	0.199	69.88%	1.92%	25.14%	11.76%	18.31%	14.01%
1	51	330	2.230	0.0396	1.590	0.425	0.188	0.273	0.218	71.30%	1.78%	26.73%	11.82%	17.17%	13.71%
Number of Birds		10													
Pen Average			2.055	0.0347	1.450	0.372	0.173	0.245	0.204	70.55%	1.67%	25.62%	11.99%	16.87%	14.06%
5	52	822	1.770	0.0267	1.230	0.336	0.153	0.190	0.170	69.49%	1.51%	27.32%	12.44%	15.45%	13.82%
5	52	823	2.268	0.0530	1.595	0.399	0.187	0.275	0.224	70.33%	2.34%	25.02%	11.72%	17.24%	14.04%
5	52	824	2.002	0.0299	1.430	0.368	0.176	0.247	0.210	71.43%	1.49%	25.73%	12.31%	17.27%	14.69%
5	52	825	1.888	0.0232	1.350	0.323	0.155	0.232	0.193	71.50%	1.23%	23.93%	11.48%	17.19%	14.30%
5	52	826	2.038	0.0539	1.460	0.385	0.162	0.250	0.180	71.64%	2.64%	26.37%	11.10%	17.12%	12.33%
5	52	827	2.472	0.0387	1.735	0.385	0.192	0.338	0.253	70.19%	1.57%	22.19%	11.07%	19.48%	14.58%
5	52	828	1.744	0.0350	1.195	0.250	0.152	0.215	0.181	68.52%	2.01%	20.92%	12.72%	17.99%	15.15%
5	52	829	2.156	0.0416	1.525	0.391	0.181	0.258	0.220	70.73%	1.93%	25.64%	11.87%	16.92%	14.43%
5	52	830	1.894	0.0432	1.335	0.341	0.159	0.228	0.193	70.49%	2.28%	25.54%	11.91%	17.08%	14.46%
Number of Birds		9													
Pen Average			2.026	0.0384	1.428	0.353	0.169	0.248	0.203	70.48%	1.89%	24.74%	11.85%	17.30%	14.20%
4	53	331	1.872	0.0373	1.315	0.344	0.149	0.251	0.187	70.25%	1.99%	26.16%	11.33%	19.09%	14.22%
4	53	332	2.336	0.0505	1.670	0.456	0.179	0.293	0.215	71.49%	2.16%	27.31%	10.72%	17.54%	12.87%
4	53	333	2.008	0.0294	1.460	0.414	0.173	0.247	0.197	72.71%	1.46%	28.36%	11.85%	16.92%	13.49%
4	53	334	2.058	0.0322	1.450	0.378	0.167	0.264	0.232	70.46%	1.56%	26.07%	11.52%	18.21%	16.00%
4	53	335	2.040	0.0459	1.395	0.312	0.176	0.245	0.205	68.38%	2.25%	22.37%	12.62%	17.56%	14.70%
4	53	336	2.288	0.0394	1.645	0.426	0.189	0.286	0.239	71.90%	1.72%	25.90%	11.49%	17.39%	14.53%
4	53	337	2.222	0.0481	1.590	0.420	0.184	0.252	0.210	71.56%	2.16%	26.42%	11.57%	15.85%	13.21%
4	53	338	2.120	0.0524	1.505	0.364	0.177	0.257	0.205	70.99%	2.47%	24.19%	11.76%	17.08%	13.62%
4	53	339	2.444	0.0306	1.760	0.473	0.197	0.310	0.243	72.01%	1.25%	26.88%	11.19%	17.61%	13.81%
4	53	340	2.404	0.0902	1.690	0.428	0.188	0.306	0.217	70.30%	3.75%	25.33%	11.12%	18.11%	12.84%
Number of Birds		10													
Pen Average			2.179	0.0456	1.548	0.402	0.178	0.271	0.215	71.00%	2.08%	25.90%	11.52%	17.54%	13.93%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex-slip (male bird)

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
6	57	831	2.172	0.0400	1.540	0.365	0.178	0.263	0.220	70.90%	1.84%	23.70%	11.56%	17.08%	14.29%
6	57	832ss	2.976	0.0619	2.175	0.526	0.255	0.378	0.332	73.08%	2.08%	24.18%	11.72%	17.38%	15.26%
6	57	833	2.348	0.0431	1.685	0.463	0.208	0.278	0.226	71.76%	1.84%	27.48%	12.34%	16.50%	13.41%
6	57	834	2.188	0.0356	1.560	0.417	0.195	0.262	0.213	71.30%	1.63%	26.73%	12.50%	16.79%	13.65%
6	57	835	2.258	0.0479	1.560	0.391	0.179	0.294	0.218	69.09%	2.12%	25.06%	11.47%	18.85%	13.97%
6	57	836	2.300	0.0542	1.685	0.482	0.209	0.281	0.225	73.26%	2.36%	28.61%	12.40%	16.68%	13.35%
6	57	837	1.832	0.0211	1.315	0.339	0.159	0.211	0.185	71.78%	1.15%	25.78%	12.09%	16.05%	14.07%
6	57	838	2.032	0.0298	1.470	0.352	0.164	0.230	0.215	72.34%	1.47%	23.95%	11.16%	15.65%	14.63%
6	57	839	2.054	0.0540	1.450	0.386	0.172	0.246	0.191	70.59%	2.63%	26.62%	11.86%	16.97%	13.17%
6	57	840	1.994	0.0452	1.390	0.313	0.188	0.247	0.190	69.71%	2.27%	22.52%	13.53%	17.77%	13.67%
Number of Birds		10													
Pen Average			2.215	0.0433	1.583	0.403	0.191	0.269	0.222	71.38%	1.94%	25.46%	12.06%	16.97%	13.95%
8	59	341	2.000	0.0385	1.410	0.384	0.174	0.226	0.188	70.50%	1.93%	27.23%	12.34%	16.03%	13.33%
8	59	342	1.890	0.0389	1.350	0.319	0.159	0.255	0.200	71.43%	2.06%	23.63%	11.78%	18.89%	14.81%
8	59	343	2.222	0.0442	1.530	0.350	0.187	0.286	0.222	68.86%	1.99%	22.88%	12.22%	18.69%	14.51%
8	59	344	2.104	0.0413	1.495	0.365	0.175	0.264	0.197	71.06%	1.96%	24.41%	11.71%	17.66%	13.18%
8	59	345	2.074	0.0220	1.510	0.399	0.184	0.270	0.200	72.81%	1.06%	26.42%	12.19%	17.88%	13.25%
8	59	346	2.018	0.0310	1.450	0.379	0.176	0.229	0.211	71.85%	1.54%	26.14%	12.14%	15.79%	14.55%
8	59	347	1.936	0.0299	1.375	0.371	0.171	0.227	0.201	71.02%	1.54%	26.98%	12.44%	16.51%	14.62%
8	59	348	2.144	0.0428	1.510	0.399	0.166	0.274	0.202	70.43%	2.00%	26.42%	10.99%	18.15%	13.38%
8	59	349	2.176	0.0308	1.560	0.401	0.171	0.265	0.220	71.69%	1.42%	25.71%	10.96%	16.99%	14.10%
8	59	350	2.214	0.0291	1.550	0.369	0.191	0.265	0.223	70.01%	1.31%	23.81%	12.32%	17.10%	14.39%
Number of Birds		10													
Pen Average			2.078	0.0349	1.474	0.374	0.175	0.256	0.206	70.97%	1.68%	25.36%	11.91%	17.37%	14.01%
3	60	841	2.204	0.0350	1.570	0.413	0.182	0.273	0.229	71.23%	1.59%	26.31%	11.59%	17.39%	14.59%
3	60	842	1.956	0.0361	1.405	0.363	0.177	0.232	0.191	71.83%	1.85%	25.84%	12.60%	16.51%	13.59%
3	60	843	2.070	0.0310	1.515	0.390	0.173	0.263	0.214	73.19%	1.50%	25.74%	11.42%	17.36%	14.13%
3	60	844	1.866	0.0206	1.305	0.312	0.167	0.235	0.204	69.94%	1.10%	23.91%	12.80%	18.01%	15.63%
3	60	845	2.050	0.0413	1.460	0.356	0.181	0.253	0.189	71.22%	2.01%	24.38%	12.40%	17.33%	12.95%
3	60	846	1.970	0.0291	1.415	0.363	0.177	0.234	0.198	71.83%	1.48%	25.65%	12.51%	16.54%	13.99%
3	60	847	2.152	0.0448	1.530	0.414	0.180	0.271	0.215	71.10%	2.08%	27.06%	11.76%	17.71%	14.05%
3	60	848	2.066	0.0331	1.505	0.403	0.176	0.251	0.206	72.85%	1.60%	26.78%	11.69%	16.68%	13.69%
3	60	849	2.160	0.0395	1.555	0.449	0.186	0.250	0.204	71.99%	1.83%	28.87%	11.96%	16.08%	13.12%
3	60	850	2.040	0.0215	1.450	0.352	0.182	0.259	0.231	71.08%	1.05%	24.28%	12.55%	17.86%	15.93%
Number of Birds		10													
Pen Average			2.053	0.0332	1.471	0.382	0.178	0.252	0.208	71.62%	1.61%	25.88%	12.13%	17.15%	14.17%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
2	63	851	2.152	0.0282	1.555	0.431	0.174	0.283	0.220	72.26%	1.31%	27.72%	11.19%	18.20%	14.15%
2	63	852	2.202	0.0464	1.585	0.440	0.187	0.270	0.205	71.98%	2.11%	27.76%	11.80%	17.03%	12.93%
2	63	853	2.284	0.0515	1.615	0.417	0.186	0.296	0.220	70.71%	2.25%	25.82%	11.52%	18.33%	13.62%
2	63	854	2.088	0.0373	1.470	0.372	0.166	0.263	0.210	70.40%	1.79%	25.31%	11.29%	17.89%	14.29%
2	63	855	2.272	0.0426	1.600	0.419	0.183	0.303	0.214	70.42%	1.88%	26.19%	11.44%	18.94%	13.38%
2	63	856	2.110	0.0254	1.485	0.359	0.187	0.259	0.226	70.38%	1.20%	24.18%	12.59%	17.44%	15.22%
2	63	857	2.082	0.0491	1.490	0.425	0.169	0.248	0.207	71.57%	2.36%	28.52%	11.34%	16.64%	13.89%
2	63	858	2.270	0.0457	1.600	0.455	0.176	0.256	0.206	70.48%	2.01%	28.44%	11.00%	16.00%	12.88%
2	63	859	2.048	0.0338	1.435	0.372	0.172	0.258	0.192	70.07%	1.65%	25.92%	11.99%	17.98%	13.38%
2	63	860	2.288	0.0513	1.665	0.423	0.194	0.281	0.221	72.77%	2.24%	25.41%	11.65%	16.88%	13.27%
Number of Birds		10													
Pen Average			2.180	0.0411	1.550	0.411	0.179	0.272	0.212	71.10%	1.88%	26.53%	11.58%	17.53%	13.70%
5	65	361	2.436	0.0376	1.760	0.495	0.181	0.270	0.257	72.25%	1.54%	28.13%	10.28%	15.34%	14.60%
5	65	362	2.204	0.0490	1.545	0.369	0.184	0.273	0.208	70.10%	2.22%	23.88%	11.91%	17.67%	13.46%
5	65	363	2.300	0.0402	1.635	0.444	0.186	0.288	0.208	71.09%	1.75%	27.16%	11.38%	17.61%	12.72%
5	65	364	2.332	0.0620	1.655	0.411	0.182	0.303	0.227	70.97%	2.66%	24.83%	11.00%	18.31%	13.72%
5	65	365	2.108	0.0161	1.470	0.366	0.183	0.247	0.209	69.73%	0.76%	24.90%	12.45%	16.80%	14.22%
5	65	366	2.086	0.0400	1.500	0.416	0.166	0.251	0.206	71.91%	1.92%	27.73%	11.07%	16.73%	13.73%
5	65	367	2.208	0.0415	1.580	0.433	0.176	0.258	0.223	71.56%	1.88%	27.41%	11.14%	16.33%	14.11%
5	65	368	2.172	0.0389	1.515	0.386	0.181	0.263	0.204	69.75%	1.79%	25.48%	11.95%	17.36%	13.47%
5	65	369	2.026	0.0375	1.450	0.409	0.163	0.236	0.195	71.57%	1.85%	28.21%	11.24%	16.28%	13.45%
5	65	370	1.970	0.0366	1.390	0.322	0.174	0.231	0.208	70.56%	1.86%	23.17%	12.52%	16.62%	14.96%
Number of Birds		10													
Pen Average			2.184	0.0399	1.550	0.405	0.178	0.262	0.215	70.95%	1.82%	26.09%	11.49%	16.91%	13.84%
8	66	861	2.296	0.0349	1.625	0.450	0.189	0.284	0.227	70.78%	1.52%	27.69%	11.63%	17.48%	13.97%
8	66	862	2.164	0.0134	1.550	0.412	0.180	0.246	0.219	71.63%	0.62%	26.58%	11.61%	15.87%	14.13%
8	66	863ss	2.584	0.0406	1.855	0.416	0.219	0.347	0.291	71.79%	1.57%	22.43%	11.81%	18.71%	15.69%
8	66	864	2.030	0.0222	1.445	0.350	0.163	0.257	0.196	71.18%	1.09%	24.22%	11.28%	17.79%	13.56%
8	66	865	2.228	0.0379	1.540	0.389	0.170	0.270	0.218	69.12%	1.70%	25.26%	11.04%	17.53%	14.16%
8	66	866	2.370	0.0364	1.710	0.459	0.188	0.285	0.245	72.15%	1.54%	26.84%	10.99%	16.67%	14.33%
8	66	867	2.022	0.0683	1.415	0.315	0.168	0.278	0.204	69.98%	3.38%	22.26%	11.87%	19.65%	14.42%
8	66	868	2.156	0.0526	1.545	0.383	0.178	0.279	0.220	71.66%	2.44%	24.79%	11.52%	18.06%	14.24%
8	66	869	2.186	0.0335	1.540	0.369	0.181	0.287	0.219	70.45%	1.53%	23.96%	11.75%	18.64%	14.22%
8	66	870	1.926	0.0250	1.400	0.429	0.191	0.296	0.222	72.69%	1.30%	30.64%	13.64%	21.14%	15.86%
Number of Birds		10													
Pen Average			2.196	0.0365	1.563	0.397	0.183	0.283	0.226	71.14%	1.67%	25.47%	11.72%	18.15%	14.46%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex-slip (male bird)

Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
4	72	871	1.992	0.0300	1.455	0.418	0.165	0.223	0.181	73.04%	1.51%	28.73%	11.34%	15.33%	12.44%
4	72	872	2.090	0.0365	1.500	0.382	0.177	0.270	0.214	71.77%	1.75%	25.47%	11.80%	18.00%	14.27%
4	72	873	2.130	0.0564	1.505	0.349	0.170	0.258	0.213	70.66%	2.65%	23.19%	11.30%	17.14%	14.15%
4	72	874	2.010	0.0374	1.440	0.365	0.166	0.238	0.188	71.64%	1.86%	25.35%	11.53%	16.53%	13.06%
4	72	875	2.370	0.0562	1.700	0.381	0.167	0.256	0.218	71.73%	2.37%	22.41%	9.82%	15.06%	12.82%
4	72	876	2.516	0.0321	1.790	0.438	0.201	0.295	0.241	71.14%	1.28%	24.47%	11.23%	16.48%	13.46%
4	72	877	2.068	0.0372	1.450	0.383	0.186	0.238	0.207	70.12%	1.80%	26.41%	12.83%	16.41%	14.28%
4	72	878	1.884	0.0569	1.310	0.317	0.153	0.219	0.183	69.53%	3.02%	24.20%	11.68%	16.72%	13.97%
4	72	879	2.168	0.0391	1.585	0.404	0.172	0.273	0.228	73.11%	1.80%	25.49%	10.85%	17.22%	14.38%
4	72	880	2.056	0.0299	1.460	0.369	0.175	0.242	0.189	71.01%	1.45%	25.27%	11.99%	16.58%	12.95%
Number of Birds		10													
Pen Average			2.128	0.0412	1.520	0.381	0.173	0.251	0.206	71.38%	1.95%	25.10%	11.44%	16.55%	13.58%
2	73	381	2.132	0.0413	1.505	0.342	0.174	0.271	0.222	70.59%	1.94%	22.72%	11.56%	18.01%	14.75%
2	73	382	2.110	0.0363	1.510	0.396	0.173	0.276	0.209	71.56%	1.72%	26.23%	11.46%	18.28%	13.84%
2	73	383	2.416	0.0396	1.730	0.479	0.203	0.304	0.257	71.61%	1.64%	27.69%	11.73%	17.57%	14.86%
2	73	384	2.148	0.0505	1.520	0.378	0.176	0.252	0.200	70.76%	2.35%	24.87%	11.58%	16.58%	13.16%
2	73	385	2.126	0.0292	1.525	0.396	0.177	0.268	0.230	71.73%	1.37%	25.97%	11.61%	17.57%	15.08%
2	73	386	2.014	0.0390	1.455	0.383	0.168	0.250	0.210	72.24%	1.94%	26.32%	11.55%	17.18%	14.43%
2	73	387	2.272	0.0462	1.615	0.414	0.184	0.267	0.226	71.08%	2.03%	25.63%	11.39%	16.53%	13.99%
2	73	388	2.164	0.0509	1.510	0.377	0.185	0.241	0.194	69.78%	2.35%	24.97%	12.25%	15.96%	12.85%
2	73	389	2.236	0.0563	1.575	0.374	0.187	0.283	0.227	70.44%	2.52%	23.75%	11.87%	17.97%	14.41%
2	73	390	2.220	0.0315	1.565	0.386	0.184	0.255	0.214	70.50%	1.42%	24.66%	11.76%	16.29%	13.67%
Number of Birds		10													
Pen Average			2.184	0.0421	1.551	0.393	0.181	0.267	0.219	71.03%	1.93%	25.28%	11.68%	17.19%	14.10%
6	74	881	2.178	0.0417	1.545	0.389	0.183	0.243	0.211	70.94%	1.91%	25.18%	11.84%	15.73%	13.66%
6	74	882ss	2.920	0.0211	2.105	0.543	0.236	0.343	0.313	72.09%	0.72%	25.80%	11.21%	16.29%	14.87%
6	74	883	2.072	0.0439	1.460	0.364	0.164	0.259	0.224	70.46%	2.12%	24.93%	11.23%	17.74%	15.34%
6	74	884	2.288	0.0433	1.625	0.357	0.189	0.299	0.245	71.02%	1.89%	21.97%	11.63%	18.40%	15.08%
6	74	885	2.182	0.0504	1.555	0.403	0.198	0.267	0.217	71.26%	2.31%	25.92%	12.73%	17.17%	13.95%
6	74	886	1.944	0.0277	1.405	0.398	0.168	0.225	0.185	72.27%	1.42%	28.33%	11.96%	16.01%	13.17%
6	74	887	1.966	0.0371	1.410	0.350	0.166	0.260	0.207	71.72%	1.89%	24.82%	11.77%	18.44%	14.68%
6	74	888	2.334	0.0498	1.665	0.404	0.195	0.290	0.235	71.34%	2.13%	24.26%	11.71%	17.42%	14.11%
6	74	889	2.264	0.0484	1.630	0.419	0.178	0.294	0.225	72.00%	2.14%	25.71%	10.92%	18.04%	13.80%
6	74	890	1.824	0.0337	1.295	0.326	0.155	0.216	0.186	71.00%	1.85%	25.17%	11.97%	16.68%	14.36%
Number of Birds		10													
Pen Average			2.197	0.0397	1.570	0.395	0.183	0.270	0.225	71.41%	1.84%	25.21%	11.70%	17.19%	14.30%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight

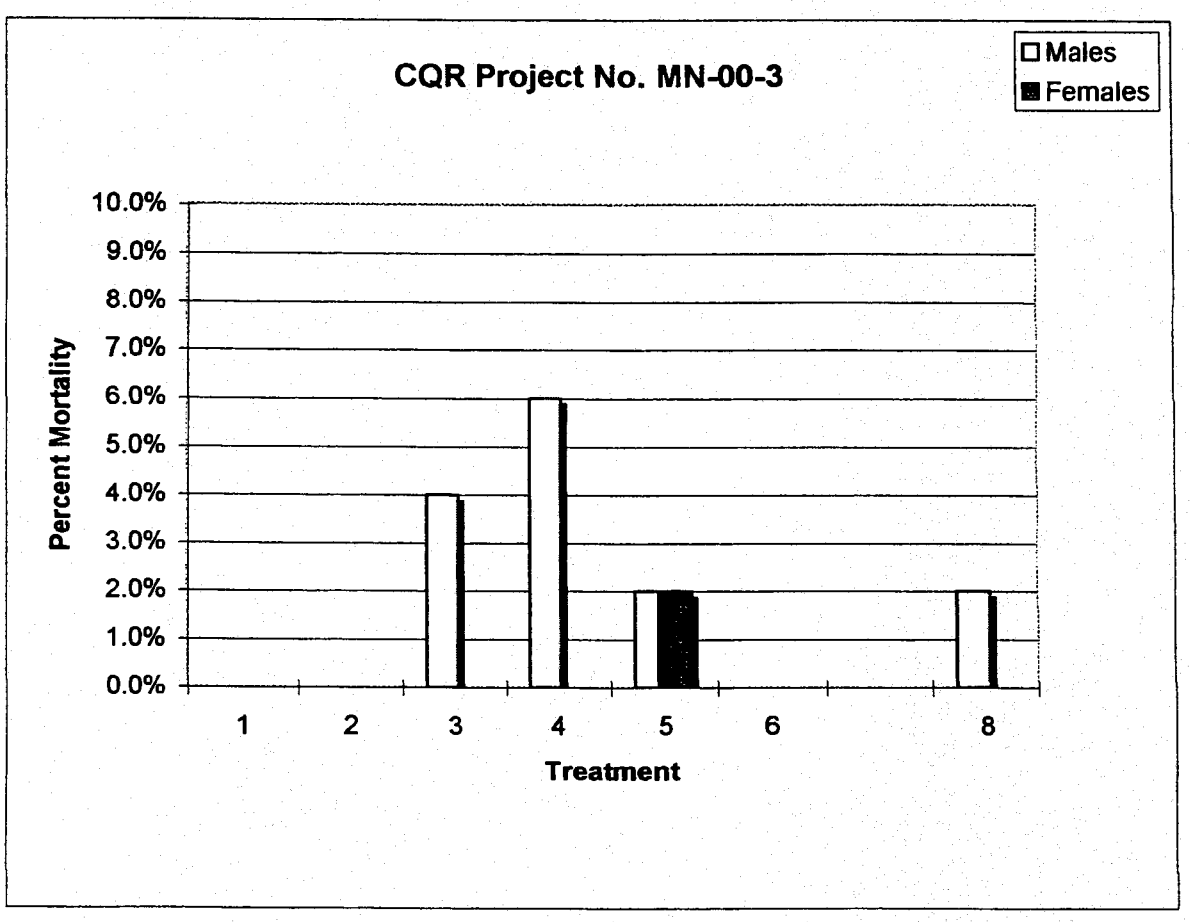
Table P3. Individual female bird processing data at 44 days of age (8/25//00) Project No. MN-00-3 (Monsanto #2000-01-39-02)
(live wt is after ~12 hr feed withdrawal)

Treatment	Pen	Bird No.	Live Wt. (kg)	Fat Pad Wt. (kg)	Chill Wt. (kg)	Breast Wt. (kg)	Wings Wt. (kg)	Thighs Wt. (kg)	Drums Wt. (kg)	% Chill	% Fat Pad	Percent of Chill Weight			
												Breast	Wings	Thighs	Drums
1	76	391	2.176	0.0454	1.545	0.401	0.177	0.250	0.216	71.00%	2.09%	25.95%	11.46%	16.18%	13.98%
1	76	392	1.924	0.0358	1.360	0.337	0.158	0.224	0.189	70.69%	1.86%	24.78%	11.62%	16.47%	13.90%
1	76	393	2.298	0.0425	1.610	0.428	0.186	0.277	0.234	70.06%	1.85%	26.58%	11.55%	17.20%	14.53%
1	76	394	2.140	0.0489	1.575	0.445	0.173	0.263	0.218	73.60%	2.29%	28.25%	10.98%	16.70%	13.84%
1	76	395	2.350	0.0283	1.770	0.537	0.199	0.302	0.241	75.32%	1.20%	30.34%	11.24%	17.06%	13.62%
1	76	396	2.192	0.0362	1.535	0.416	0.171	0.264	0.216	70.03%	1.65%	27.10%	11.14%	17.20%	14.07%
1	76	397	2.282	0.0513	1.705	0.509	0.191	0.288	0.205	74.72%	2.25%	29.85%	11.20%	16.89%	12.02%
1	76	398	2.236	0.0311	1.620	0.427	0.190	0.277	0.207	72.45%	1.39%	26.36%	11.73%	17.10%	12.78%
1	76	399	1.884	0.0321	1.350	0.331	0.167	0.232	0.190	71.66%	1.70%	24.52%	12.37%	17.19%	14.07%
1	76	400	2.362	0.0312	1.720	0.468	0.206	0.295	0.230	72.82%	1.32%	27.21%	11.98%	17.15%	13.37%
Number of Birds		10													
Pen Average			2.184	0.0383	1.579	0.430	0.182	0.267	0.215	72.23%	1.76%	27.10%	11.53%	16.91%	13.62%
3	80	891	2.154	0.0389	1.545	0.399	0.185	0.259	0.213	71.73%	1.81%	25.83%	11.97%	16.76%	13.79%
3	80	892ss	2.634	0.0276	1.880	0.482	0.218	0.307	0.281	71.37%	1.05%	25.64%	11.60%	16.33%	14.95%
3	80	893	2.248	0.0500	1.620	0.446	0.186	0.268	0.226	72.06%	2.22%	27.53%	11.48%	16.54%	13.95%
3	80	894	1.972	0.0522	1.370	0.315	0.155	0.225	0.189	69.47%	2.65%	22.99%	11.31%	16.42%	13.80%
3	80	895	2.048	0.0397	1.495	0.374	0.187	0.239	0.199	73.00%	1.94%	25.02%	12.51%	15.99%	13.31%
3	80	896	2.234	0.0287	1.580	0.411	0.185	0.269	0.230	70.73%	1.28%	26.01%	11.71%	17.03%	14.56%
3	80	897	2.120	0.0283	1.510	0.381	0.182	0.248	0.207	71.23%	1.33%	25.23%	12.05%	16.42%	13.71%
3	80	898	2.366	0.0710	1.695	0.440	0.181	0.287	0.212	71.64%	3.00%	25.96%	10.68%	16.93%	12.51%
3	80	899	2.094	0.0716	1.460	0.357	0.157	0.266	0.206	69.72%	3.42%	24.45%	10.75%	18.22%	14.11%
3	80	900	2.238	0.0464	1.620	0.447	0.188	0.263	0.225	72.39%	2.07%	27.59%	11.60%	16.23%	13.89%
Number of Birds		10													
Pen Average			2.211	0.0454	1.578	0.405	0.182	0.263	0.219	71.33%	2.08%	25.63%	11.57%	16.69%	13.86%

Percent chill and fat pad are percent of live weight, percent breast, wings, thighs and drums are percent of chill weight
ss = sex-slip (male bird)

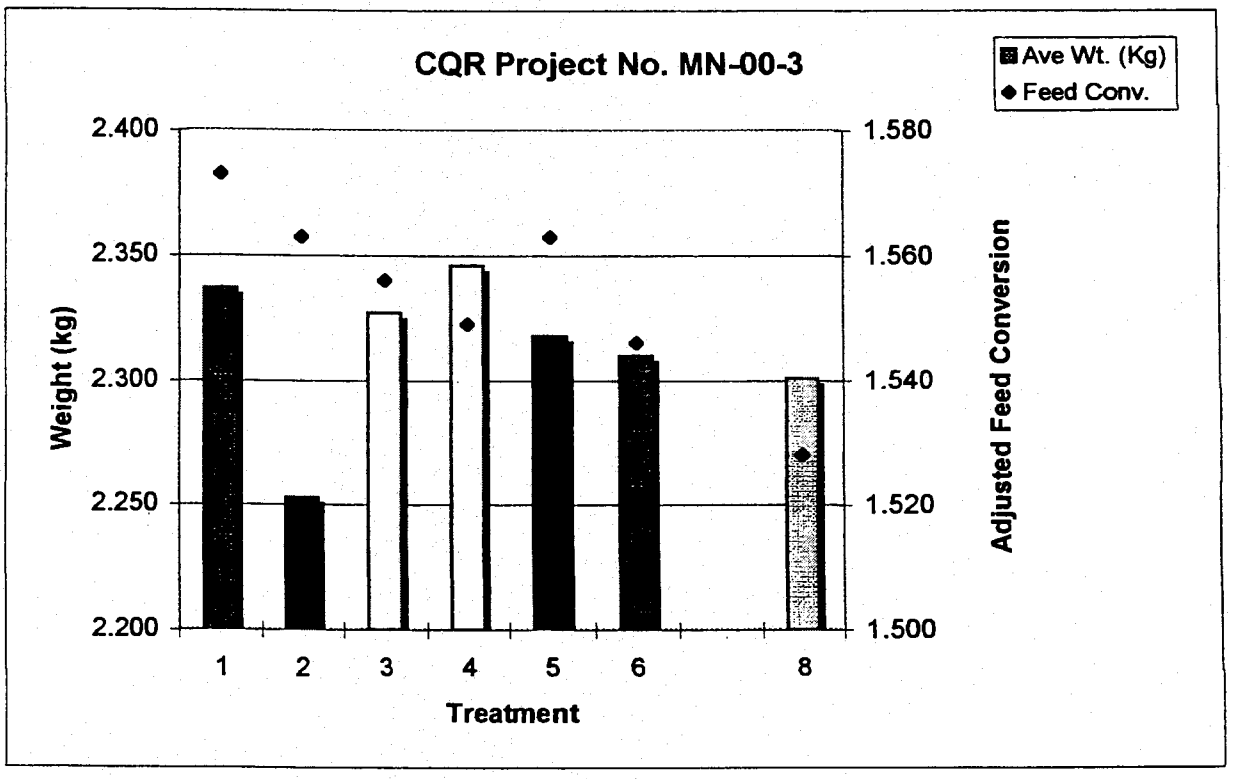
Graph G1. Summary of Day 7-42 mortality, by sex. Project No. MN-00-3
(Monsanto #2000-01-39-02)

Treatment	Percent Mortality		Treatment Description
	Males	Females	
1	0.0%	0.0%	RX826
2	0.0%	0.0%	RX770
3	4.0%	0.0%	DK493
4	6.0%	0.0%	LH235 x LH185
5	2.0%	2.0%	MON847
6	0.0%	0.0%	B73HT x LH82
8	2.0%	0.0%	NK603



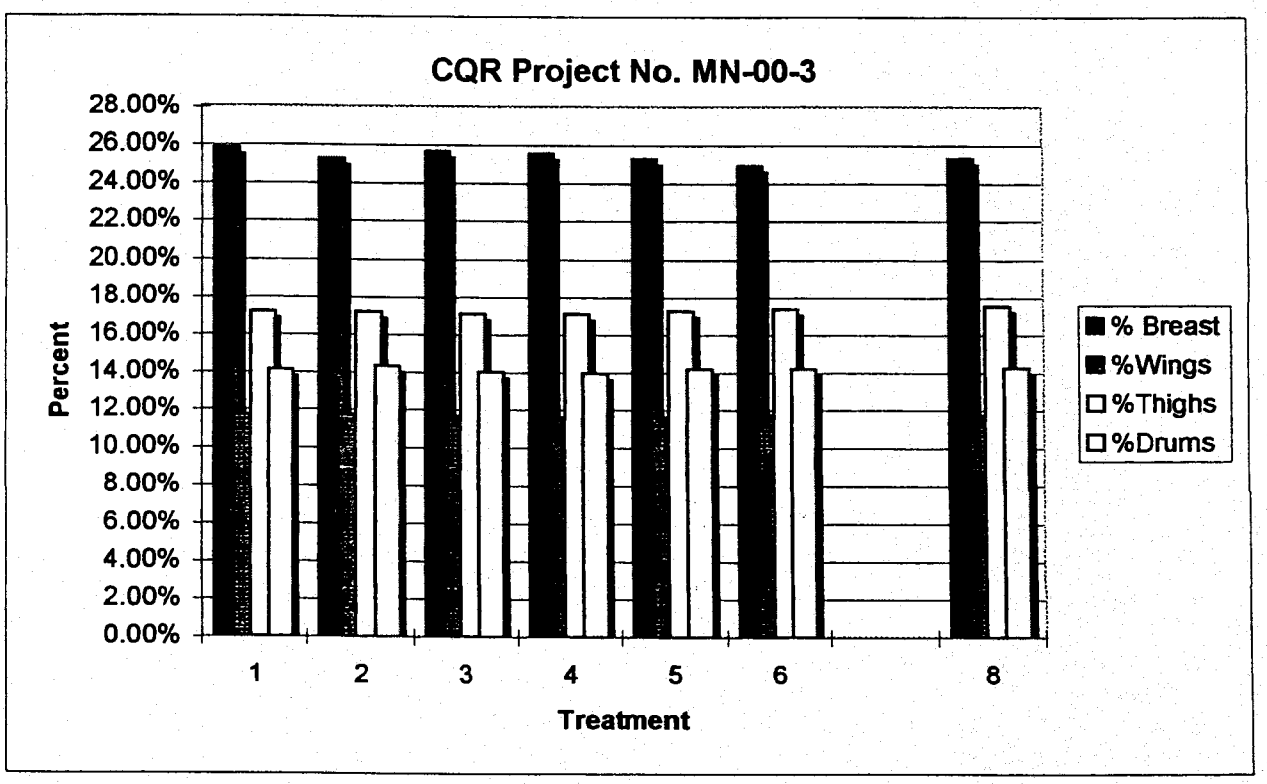
Graph G2. Summary of Day 42 Treatment Average Bird Weight and Adjusted Feed Conversion
Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	Day 42 Ave Wt. (Kg)	Adjusted Feed Conv.	Treatment Description
1	2.337	1.573	RX826
2	2.253	1.563	RX770
3	2.327	1.556	DK493
4	2.346	1.549	LH235 x LH185
5	2.318	1.563	MON847
6	2.310	1.546	B73HT x LH82
8	2.301	1.528	NK603



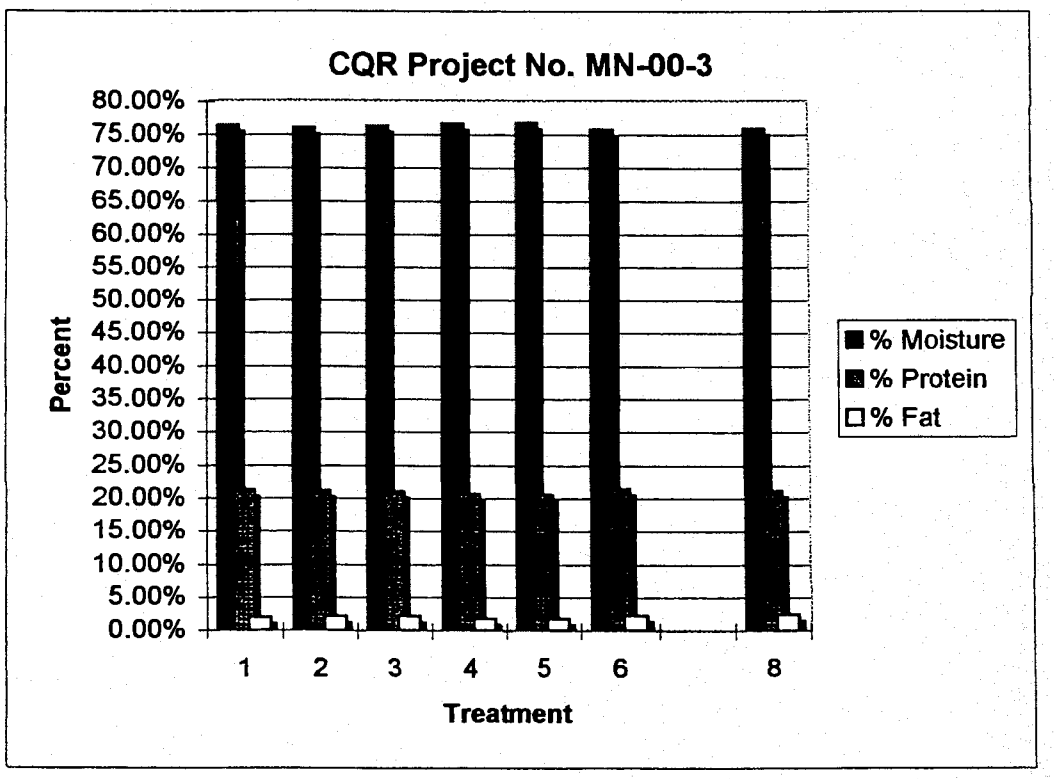
Graph G3. Summary of Day 43 and Day 44 Processing Data - Male & Female combined
Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	% Breast	%Wings	%Thighs	%Drums	Treatment Description
1	25.83%	11.69%	17.19%	14.12%	RX826
2	25.29%	11.73%	17.20%	14.34%	RX770
3	25.68%	11.67%	17.08%	14.03%	DK493
4	25.56%	11.59%	17.08%	13.98%	LH235 x LH185
5	25.29%	11.62%	17.27%	14.19%	MON847
6	24.93%	11.75%	17.37%	14.21%	B73HT x LH82
8	25.33%	11.74%	17.53%	14.27%	NK603



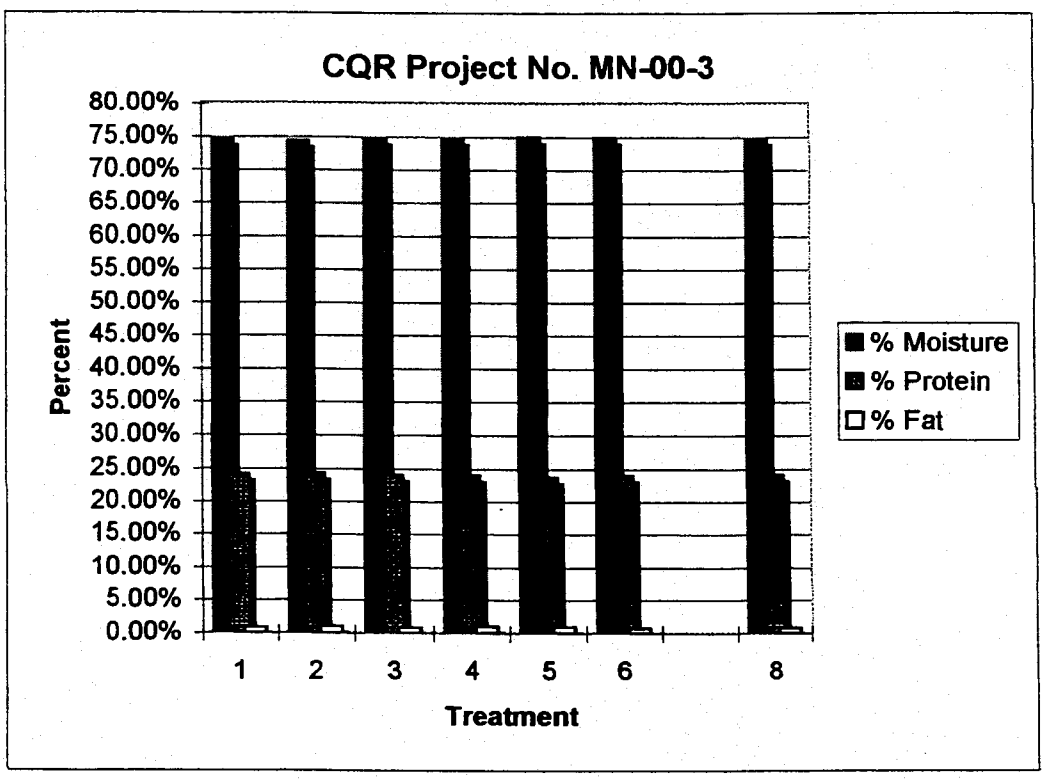
Graph G4. Summary analysis of thigh meat samples - Male & Female combined
Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	% Moisture	% Protein	% Fat	Treatment Description
1	76.36%	21.16%	1.97%	RX826
2	76.04%	21.13%	2.15%	RX770
3	76.29%	21.02%	2.14%	DK493
4	76.61%	20.66%	1.85%	LH235 x LH185
5	76.80%	20.50%	1.83%	MON847
6	75.75%	21.34%	2.31%	B73HT x LH82
8	75.89%	21.06%	2.46%	NK603



Graph G5. Summary analysis of breast meat samples - Male & Female combined
Project No. MN-00-3 (Monsanto #2000-01-39-02)

Treatment	% Moisture	% Protein	% Fat	Treatment Description
1	74.72%	24.24%	0.81%	RX826
2	74.44%	24.35%	1.04%	RX770
3	74.77%	24.16%	0.81%	DK493
4	74.73%	24.01%	1.04%	LH235 x LH185
5	74.99%	23.71%	0.93%	MON847
6	74.88%	24.02%	0.80%	B73HT x LH82
8	74.74%	24.11%	0.87%	NK603



STATEMENT FROM CQR QUALITY ASSURANCE UNIT

Project No. MN-00-3
(Monsanto Study No. 2000-01-39-02)

This study was conducted in compliance with the FDA Good Laboratory Practice Regulations 21CFR 58. Quality Assurance inspections of study phases were carried out on the following dates and results reported to Management and the Study Director.

Study Phase Inspected	Inspected By	Dates Inspected	Date Reported to Study Director/ Management
Draft Protocol	J. Knoll-Brown	6/1/00	8/16/00
Corn grinding & bagging and sampling	J. Knoll-Brown	5/9/00	8/21/00
Diet preparation phase	J. Knoll-Brown	7/6 & 7/7/00	8/17/00
Chick placement	J. Knoll-Brown	7/12/00	8/16/00
Bird and feed weights	J. Knoll-Brown	8/23/00	8/24/00
Processing males & females	J. Knoll-Brown	8/24 & 8/25/00	8/29/00
Data Audit	J. Knoll-Brown	8/25 & 8/28/00	12/13/00
Data Audit	J. Knoll-Brown	10/4 & 10/9/00	11/9/00
Final report review (NK603)	J. Knoll-Brown	1/31/01	1/31/01

Joelyn Knoll-Brown
Quality Assurance Officer

1/31/01
Date

REPORT AMENDMENT

Project No.: MN-00-3 (Monsanto Study No. 2000-01-39-02)
"Comparison of Broiler Performance When Fed Diets Containing Event NK603, Parental Line or Commercial Corn"

Study Director: Beverly George, Ph.D.
Colorado Quality Research, Inc.
400 East County Road 72
Wellington, Colorado 80549

Sponsor: Monsanto Company
700 Chesterfield Parkway North
St. Louis, Missouri 63198

Amendment No. 1 (one)

Effective Date: February 21, 2001

Report Section: Table 1. Pesticide, nutrient and amino acid assays of corn (as-is basis)

Amendment:

The values for calcium, magnesium, phosphorus, potassium and sodium were off by one decimal place and have been corrected in the attached Table 1.

Reason for Amendment:

The assay lab reported the results in ppm. The values for the above minerals were converted from ppm to percent for the report table. A calculation error was made and the values were off by one decimal place.

Effect on Study:

The changes made in Table 1 will have no effect on the study. The diets were formulated using the correct values because the corn assay results provided to the nutritionist were as reported by the assay lab (i.e. the units were ppm).

Signature: Beverly George Date 2-21-01
Beverly George, Ph.D.
Study Director

Table 1. Pesticide, nutrient and amino acid assays of corn (as-is basis). CQR Project No. MN-00-3 (Monsanto 2000-01-39-02)

CQR Treatment ID	1	2	3	4	5	6	8
Monsanto Corn ID	**RX826**	**RX770**	**DK 493**	**LH235 x LH185**	**MON847**	**B73HT x LH82**	**NK603**
Covance Lab ID	**00105823**	**00401502**	**00105818**	**00600599**	**00401499**	**00600602**	**00600597**
Pesticides (ppm)							
Organophosphates	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Organonitrogens	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Organochlorinated	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
N-Methylcarbamates	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Nutrients (%)							
Crude protein	7.85	8.45	7.22	7.50	9.11	8.84	8.53
Moisture	12.3	10.30	11.6	9.26	11.5	11.4	10.1
Total fat	2.37	2.80	2.53	2.52	3.50	3.41	3.43
Ash	1.10	1.25	1.06	1.10	1.05	1.03	1.38
Carbohydrates	76.4	77.20	77.6	79.6	74.8	75.3	76.6
Neutral Detergent Fiber (%)	7.94	8.82	9.21	13.00	14.60	10.70	8.97
Acid Detergent Fiber (%)	2.48	3.11	2.34	2.99	4.53	3.00	3.07
Crude Fiber (%)	1.71	1.63	1.67	2.08	2.07	1.73	1.79
Minerals							
Calcium, %	0.00310	0.00441	0.00482	0.00332	0.00403	0.00288	0.00285
Magnesium, %	0.0957	0.1110	0.1080	0.0715	0.1120	0.0851	0.1050
Phosphorus, %	0.2750	0.3040	0.2880	0.1890	0.2970	0.2280	0.3010
Potassium, %	0.3330	0.3300	0.3880	0.3220	0.3100	0.2930	0.3580
Sodium, %	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Sulfur (%)	0.076	0.097	0.069	0.058	0.088	0.073	0.071
Chloride (%)	0.060	0.047	0.056	0.075	0.054	0.058	0.055
Copper, ppm	1.14	1.73	1.31	2.13	1.75	1.49	1.71
Iron, ppm	16.0	31.6	13.8	16.1	51.8	18.9	19.7
Manganese, ppm	4.83	5.80	6.09	6.35	4.54	5.81	6.15
Zinc, ppm	16.2	18.9	20.3	13.7	19.3	17.0	19.3

Table 1. Pesticide, nutrient and amino acid assays of corn (as-is basis). CQR Project No. MN-00-3 (Monsanto 2000-01-39-02)

CQR Treatment ID	1	2	3	4	5	6	8
Monsanto Corn ID	RX826	RX770	DK 493	LH235 x LH185	MON847	B73HT x LH82	NK603
Covance Lab ID	00105823	00401502	00105818	00600599	00401499	00600602	00600597
Amino Acids (mg/g)							
Aspartic Acid	5.30	5.41	5.08	5.20	6.67	5.97	5.86
Threonine	2.72	3.05	2.54	2.66	3.36	3.05	2.96
Serine	3.67	4.15	3.43	3.49	4.53	4.25	4.07
Glutamic Acid	14.5	16.30	13.00	13.80	19.1	17.00	16.20
Proline	7.50	8.56	6.38	7.18	9.52	8.65	8.28
Glycine	3.20	3.24	2.95	2.97	3.59	3.39	3.46
Alanine	5.92	6.51	5.27	5.61	7.43	6.99	6.63
Cystine	1.77	1.98	1.51	1.72	2.01	1.97	1.97
Valine	4.09	4.32	3.63	3.91	4.83	4.44	4.34
Methionine	1.61	2.00	1.30	1.54	1.70	1.73	1.83
Isoleucine	2.82	3.11	2.53	2.77	3.56	3.28	3.22
Leucine	9.72	11.40	8.49	9.11	12.90	11.20	10.80
Tyrosine	2.59	3.09	2.48	2.58	3.46	3.04	2.88
Phenylalanine	3.74	4.25	3.42	3.70	4.93	4.47	4.32
Histidine	2.56	2.73	2.13	2.35	2.94	2.52	2.52
Lysine	2.58	2.49	2.49	2.47	2.90	2.75	2.89
Arginine	3.91	3.86	3.51	3.49	4.21	4.01	4.14
Tryptophan	0.506	0.559	0.509	0.498	0.554	0.529	0.597

mg/g = mg per g of corn

Appendix 2

Trilogy Consulting Corporation Statistical Report

pp. 97-162

Report Submitted By:

David Mark Carpenter

1/8/01

David Mark Carpenter, Ph.D.
Statistician
Trilogy Consulting Corporation

Date

Statistical Report
CQR Project No. MN-00-3
Monsanto Study No. 2000-01-39-02
Comparison of Broiler Performance When Fed Diets Containing Events NK603 Parental Lines or Commercial Corn
David Mark Carpenter, Ph.D.
1/4/01

Data

The data consist of several responses: live weight, live pen weight on day 1, live bird weight on day 1 (g/bird), fat pad weight, chill weight, breast weight, wing weight, thigh weight, drum weight, percent fat pad, percent chill weight (chill weight/live weight), percent breast weight (breast weight/chill weight), percent wings weight (wings weight/chill weight), percent thighs weight (thighs weight/chill weight), percent drums weight (drums weight/chill weight), final pen weight, R/M weight (final pen weight plus the weight of all removed and dead birds), food consumption, feed intake average weight, feed efficiency, adjusted feed efficiency, and moisture protein, and fat for both breasts and thighs. These responses were measured on chicks fed one of eight corn diets and are listed in Table 1.

Raw data was supplied by CQR in the form of EXCEL spreadsheets. These data were sorted and/or combined and saved in several text files. The text files were read and saved in a form amenable to analysis by Release 8 of the Statistical Analysis System (SAS®).

Statistical Analyses

Pens were set up as a randomized complete block experimental design with 8 diets (treatments) in each of five replicated blocks of pens. Each block contained 16 pens (eight male and eight female) with 10 birds/pen for a total of 80 pens and 800 birds (400 male, 400 female). Note that the data from all eight diets were used to build the models described below. However, only 7 diets, one transgenic line NK603 and the 6 commercial lines, were compared in detail. The GLM and Mixed procedures in Release 8 of the Statistical Analysis System (SAS®) were used to analyses each experiment.

Two statistical analyses were done. The first analysis used the model:

Model 1: $$y_{ijk} = \mu + \tau_i + \beta_j + (\tau\beta)_{ij} + \eta_k + \varepsilon_{ijk}$$

where

y_{ijk} is the value of the pen response for diet i, sex j, in block k
μ is the overall mean
τ_i is the mean effect for diet i, i=1, ..., 8
β_j is the mean effect for sex j, j=1,2.
$(\tau\beta)_{ij}$ is the diet by sex interaction
η_k is the effect of block k, k=1, ..., 5.
ε_{ijk} is the random error for the pen corresponding to diet i, sex j, and block k.

The second analysis is similar to Model 1 except that a separate analysis was performed for each sex. The model used in this case is:

Model 2: $$y_{ik} = \mu + \tau_i + \eta_k + \varepsilon_{ik}.$$

The general linear model (GLM) procedure in SAS was used to fit both models. The results of the analyses from the first model are in Tables 2 - 29 while the results of the analyses from the second model are in Tables 30 - 57. The tables contain the means along with 5% LSD values for a comparison of the transgenic (NK603) to its non-transgenic parent and the commercial controls. Means, followed by the same letter, are not significantly different. The convention used is that if the overall ANOVA F-test is not significant, $p > 0.05$, then all pairwise comparisons are also not significant and thus each mean was assigned the same letter in Tables 2-57. In addition, plots of the means, for final pen weight, food consumption, feed efficiency, adjusted feed efficiency, along with error bars, which are ± one half of the 5% LSD, are in Figures 1 - 4. The overall p-values for blocks, diets, gender and the interaction between diets and gender are also provided at the top of each table. If the overall ANOVA p-value > 0.05 then none of the effects, blocks, diets, etc., are considered significant.

As a further assessment of the diets, Tables 30 - 57 include a comparison of the NK603 transgenic diet to the population of commercial varieties. The hypothesis being tested is: H_0: the expected response for chicks fed the NK603 diet is consistent with the variation of the response from diets containing different commercial varieties. This analysis uses the following linear mixed model:

Model 3: $$y_{ijk} = \mu + \beta_i + \tau_j + \delta_{k(j)} + \varepsilon_{ijk}$$

where

y_{ijk} is the value of the pen response corresponding to block i, treatment j (either NK603 or commercial), and diet k within treatment j

μ is overall mean

β_i is ith block effect, i=1, ..., 5
τ_j is jth treatment effect, j=1,2
$\delta_{k(j)}$ is the random diet effect.
ε_{ijk} is random pen error for block i fed diet k within treatment j.

In most cases of Model 3, block effects were negligible in the overall analyses of variance, i.e., p-value > 0.05. In these cases, the model was refitted without block effects, i.e., the block effects were pooled in the error term, to get a more powerful test. The mixed procedure in SAS was used to do the actual analysis.

Results/Conclusions

There are only a few responses for which statistical significance between diets was observed (five cases in Model 1, four in Model 2 and three cases in Model 3). In these few cases there are no clear-cut patterns in differences between the NK603 and the non-transgenic diets. In most cases, significant differences between blocks and significant differences between males and females were observed.

1. Model 1, i.e., analysis across sex, there was only one instance, Percent Wing Weight, for which statistical significant diet*sex interaction was observed. In this case the analysis for Percent Wing Weight on a per sex basis, given in number 2, below, is more appropriate. All other diet*sex interactions were not significant. There were only five cases in which statistical significance between diets were observed:
    a. Fat Pad Weight (overall ANOVA p<0.001 and treatment p=0.012). Closer inspection via the LSD multiple comparisons indicates that NK603 is statistically different from all of the commercial diets except RX826 (and none of the commercial diets are statistically significant from each other).
    b. Breast Weight (overall ANOVA p<0.001 and treatment p=0.033). Closer inspection via the LSD multiple comparisons indicates that NK603 is not statistically different from any of the commercial lines.
    c. Adjusted Feed Efficiency (overall ANOVA p<0.001 and treatment p=0.013). Through LSD comparisons, NK603 is statistically different from RX826, DK493, MON847, and RX770 but not statistically different than LH235xLH185 or B73HTxLH82.
    d. Thigh Moisture (overall ANOVA p=0.016 and treatment p=0.002). Through LSD comparisons, NK603 is statistically different from the LH235xLH185 and MON847 diets only.
    e. Percent Fat Pad (overall ANOVA p<0.001 and treatment p=0.007). Through LSD comparisons, NK603 is statistically different from all commercial lines except RX826.
2. Model 2, i.e., analysis by sex, statistical differences due to diets were seen in four instances:

a. Percent Wing Weight – male, no statistical significance (overall ANOVA p=0.520); female, statistical significance (overall ANOVA p<0.001 and treatments p=0.001), with the LSD test yielding that NK603 is statistically different than LH235xLH185 and MON847, but not statistically different than the other four commercial lines.
b. Feed Efficiency – male, no statistical significance (overall ANOVA p=0.692); female, statistical significance (overall ANOVA p<0.001 and treatments p=0.005) with NK603 testing significantly different that RX826, DK493 and MON847 only.
c. Thigh Moisture – male, statistical significance (overall ANOVA p=0.048 and treatments p=0.038), with NK603 testing statistically different than LH235xLH185, DK493, and MON847, but it is not statistically different than the other three commercial diets; female, no statistical significance (overall ANOVA p=0.166).
d. Thigh Protein – male, no statistical significance (overall ANOVA p=0.488); female, statistical significance (overall ANOVA p=0.036 and treatments p=0.025), with NK603 testing statistically different than MON847 only.

3. Model 3, i.e., direct comparison of NK603 to the population of commercial diets, in three cases:
   a. Fat Pad Weight – male, statistical significance (p=0.008); female, statistical significance (p=0.024).
   b. Percent Fat Pad – Male, no statistical significance (p=0.051); female, statistical significance (p=0.010).
   c. Percent Thigh Weight – male, no statistical significance (p=0.659); female, statistical significance (p=0.003).

Table 1: Diets

Type	Code
Test Article	1. MON853 2. NK603
Control Article	1. B73Ht x LH82 (parental control for NK603)
Commercial controls varieties)	Non-genetically modified corn (commercial 1. RX770 2. LH235 x LH185 3. MON847 4. RX826 5. DK493

Table 2 - Statistical Analysis Across Sex for Live Weight, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.018
p-value, Diets	0.067
p-value, Sex	<0.001
p-value, Diets*Sex	0.915
LSD 5%	0.0658

Diet Means

NK603	2.246a
RX826	2.299a
LH235 x LH185	2.287a
DK493	2.263a
MON847	2.254a
B73HTxLH82	2.225a
RX770	2.195a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 3 - Statistical Analysis Across Sex for Live Pen Weight, kg/pen, Day1

ANOVA Summary

p-value, Overall	0.510
p-value, Blocks	0.021
p-value, Diets	0.977
p-value, Sex	0.480
p-value, Diets*Sex	0.800
LSD 5%	9.5645

Diet Means

NK603	458.200a
RX826	462.000a
LH235 x LH185	457.200a
DK493	460.600a
MON847	460.000a
B73HTxLH82	461.000a
RX770	459.000a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 4 - Statistical Analysis Across Sex for Live Weight Day 1, g/bird

ANOVA Summary

p-value, Overall	0.510
p-value, Blocks	0.021
p-value, Diets	0.977
p-value, Sex	0.480
p-value, Diets*Sex	0.800
LSD 5%	0.797

Diet Means

NK603	38.183a
RX826	38.500a
LH235 x LH185	38.100a
DK493	38.383a
MON847	38.333a
B73HTxLH82	38.417a
RX770	38.250a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 5- Statistical Analysis Across Sex for Fat Pad Weight, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.155
p-value, Diets	0.012
p-value, Sex	<0.001
p-value, Diets*Sex	0.943
LSD 5%	0.0028

Diet Means

NK603	0.034b
RX826	0.036ab
LH235 x LH185	0.039a
DK493	0.039a
MON847	0.037a
B73HTxLH82	0.037a
RX770	0.037a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 6 - Statistical Analysis Across Sex for Chill Weight, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.010
p-value, Diets	0.086
p-value, Sex	<0.001
p-value, Diets*Sex	0.964
LSD 5%	0.0515

Diet Means

NK603	1.592a
RX826	1.637a
LH235 x LH185	1.622a
DK493	1.605a
MON847	1.598a
B73HTxLH82	1.580a
RX770	1.556a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 7 - Statistical Analysis Across Sex for Breast Weight, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.091
p-value, Diets	0.033
p-value, Sex	<0.001
p-value, Diets*Sex	0.878
LSD 5%	0.0183

Diet Means

NK603	0.407abcd
RX826	0.423a
LH235 x LH185	0.415ab
DK493	0.413abc
MON847	0.404bcd
B73HTxLH82	0.394d
RX770	0.394cd

[a,b,c,d] Individual diet means with the same letter are not statistically different at the 5% level.

Table 8 - Statistical Analysis Across Sex for Wings Weight, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.049
p-value, Diets	0.132
p-value, Sex	<0.001
p-value, Diets*Sex	0.526
LSD 5%	0.0055

Diet Means

NK603	0.186a
RX826	0.191a
LH235 x LH185	0.188a
DK493	0.187a
MON847	0.185a
B73HTxLH82	0.185a
RX770	0.182a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 9 - Statistical Analysis Across Sex for Thighs Weight, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.048
p-value, Diets	0.296
p-value, Sex	<0.001
p-value, Diets*Sex	0.886
LSD 5%	0.0101

Diet Means

NK603	0.279a
RX826	0.282a
LH235 x LH185	0.277a
DK493	0.274a
MON847	0.276a
B73HTxLH82	0.275a
RX770	0.268a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 10 - Statistical Analysis Across Sex for Drums Weight, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	<0.001
p-value, Diets	0.509
p-value, Sex	<0.001
p-value, Diets*Sex	0.958
LSD 5%	0.0074

Diet Means

NK603	0.227a
RX826	0.231a
LH235 x LH185	0.227a
DK493	0.225a
MON847	0.227a
B73HTxLH82	0.224a
RX770	0.223a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 11 - Statistical Analysis Across Sex for % Fat Pad Weight, (FatPad wt / Live Wt),

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.562
p-value, Diets	0.007
p-value, Sex	<0.001
p-value, Diets*Sex	0.891
LSD 5%	0.0011

Diet Means

NK603	0.015c
RX826	0.016bc
LH235 x LH185	0.017a
DK493	0.017a
MON847	0.017ab
B73HTxLH82	0.017ab
RX770	0.017ab

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 12 - Statistical Analysis Across Sex for Percent Chill Weight

ANOVA Summary

p-value, Overall	0.104
p-value, Blocks	0.029
p-value, Diets	0.702
p-value, Sex	0.015
p-value, Diets*Sex	0.455
LSD 5%	0.0046

Diet Means

NK603	0.709a
RX826	0.712a
LH235 x LH185	0.709a
DK493	0.709a
MON847	0.709a
B73HTxLH82	0.710a
RX770	0.708a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 13 - Statistical Analysis Across Sex for Percent Breast Weight

ANOVA Summary

p-value, Overall	0.033
p-value, Blocks	0.845
p-value, Diets	0.051
p-value, Sex	<0.001
p-value, Diets*Sex	0.560
LSD 5%	0.0054

Diet Means

NK603	0.255a
RX826	0.258a
LH235 x LH185	0.256a
DK493	0.257a
MON847	0.253a
B73HTxLH82	0.249a
RX770	0.253a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 14 - Statistical Analysis Across Sex for Percent Wing Weight

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.026
p-value, Diets	0.185
p-value, Sex	<0.001
p-value, Diets*Sex	0.012
LSD 5%	0.0014

Diet Means

NK603	0.117a
RX826	0.117a
LH235 x LH185	0.116a
DK493	0.117a
MON847	0.116a
B73HTxLH82	0.118a
RX770	0.117a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 15 - Statistical Analysis Across Sex for Percent Thigh Weight

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.268
p-value, Diets	0.052
p-value, Sex	<0.001
p-value, Diets*Sex	0.243
LSD 5%	0.0029

Diet Means

NK603	0.175a
RX826	0.172a
LH235 x LH185	0.171a
DK493	0.171a
MON847	0.173a
B73HTxLH82	0.174a
RX770	0.172a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 16 - Statistical Analysis Across Sex for Percent Drum Weight

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.008
p-value, Diets	0.103
p-value, Sex	<0.001
p-value, Diets*Sex	0.977
LSD 5%	0.0025

Diet Means

NK603	0.143a
RX826	0.141a
LH235 x LH185	0.140a
DK493	0.140a
MON847	0.142a
B73HTxLH82	0.142a
RX770	0.143a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 17 - Statistical Analysis Across Sex for Final Pen Weight, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.069
p-value, Diets	0.849
p-value, Sex	<0.001
p-value, Diets*Sex	0.488
LSD 5%	1.1087

Diet Means

NK603	22.770a
RX826	23.370a
LH235 x LH185	22.720a
DK493	22.760a
MON847	22.480a
B73HTxLH82	22.850a
RX770	22.530a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 18 - Statistical Analysis Across Sex for R/M Weight, kg

ANOVA Summary

p-value, Overall	0.294
p-value, Blocks	0.478
p-value, Diets	0.538
p-value, Sex	0.169
p-value, Diets*Sex	0.157
LSD 5%	0.383

Diet Means

NK603	0.224a
RX826	0.170a
LH235 x LH185	0.474a
DK493	0.429a
MON847	0.310a
B73HTxLH82	0.142a
RX770	0.156a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 19 - Statistical Analysis Across Sex for Food Consumption, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.007
p-value, Diets	0.349
p-value, Sex	<0.001
p-value, Diets*Sex	0.535
LSD 5%	1.4846

Diet Means

NK603	35.090a
RX826	36.940a
LH235 x LH185	35.870a
DK493	36.040a
MON847	35.570a
B73HTxLH82	35.470a
RX770	35.430a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 20 - Statistical Analysis Across Sex for Average Food Consumption, kg

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.035
p-value, Diets	0.063
p-value, Sex	<0.001
p-value, Diets*Sex	0.976
LSD 5%	0.1318

Diet Means

NK603	3.547a
RX826	3.694a
LH235 x LH185	3.706a
DK493	3.689a
MON847	3.667a
B73HTxLH82	3.586a
RX770	3.543a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level

Table 21 - Statistical Analysis Across Sex for Average Weight, kg/bird

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.016
p-value, Diets	0.229
p-value, Sex	<0.001
p-value, Diets*Sex	0.914
LSD 5%	0.0688

Diet Means

NK603	2.301a
RX826	2.337a
LH235 x LH185	2.346a
DK493	2.327a
MON847	2.318a
B73HTxLH82	2.310a
RX770	2.253a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 22 - Statistical Analysis Across Sex for Feed Efficiency

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.187
p-value, Diets	0.059
p-value, Sex	<0.001
p-value, Diets*Sex	0.363
LSD 5%	0.032

Diet Means

NK603	1.543a
RX826	1.585a
LH235 x LH185	1.581a
DK493	1.587a
MON847	1.587a
B73HTxLH82	1.555a
RX770	1.574a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 23 - Statistical Analysis Across Sex for Adjusted Feed Efficiency

ANOVA Summary

p-value, Overall	<0.001
p-value, Blocks	0.042
p-value, Diets	0.013
p-value, Sex	<0.001
p-value, Diets*Sex	0.582
LSD 5%	0.024

Diet Means

NK603	1.528c
RX826	1.573a
LH235 x LH185	1.549bc
DK493	1.556ab
MON847	1.563ab
B73HTxLH82	1.546bc
RX770	1.563ab

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 24 - Statistical Analysis Across Sex for Breast Moisture

ANOVA Summary

p-value, Overall	0.019
p-value, Blocks	0.152
p-value, Diets	0.434
p-value, Sex	0.002
p-value, Diets*Sex	0.074
LSD 5%	0.4669

Diet Means

NK603	74.741a
RX826	74.716a
LH235 x LH185	74.726a
DK493	74.774a
MON847	74.993a
B73HTxLH82	74.879a
RX770	74.439a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 25 - Statistical Analysis Across Sex for Breast Protein

ANOVA Summary

p-value, Overall	0.163
p-value, Blocks	0.662
p-value, Diets	0.445
p-value, Sex	0.018
p-value, Diets*Sex	0.151
LSD 5%	0.5355

Diet Means

NK603	24.111a
RX826	24.235a
RX770	24.346a
DK493	24.157a
LH235 x LH185	24.008a
MON847	23.712a
B73HTxLH82	24.019a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 26 - Statistical Analysis Across Sex for Breast Fat

ANOVA Summary

p-value, Overall	0.286
p-value, Blocks	0.530
p-value, Diets	0.064
p-value, Sex	0.281
p-value, Diets*Sex	0.756
LSD 5%	0.1987

Diet Means

NK603	0.867a
RX826	0.810a
RX770	1.035a
DK493	0.809a
LH235 x LH185	1.036a
MON847	0.931a
B73HTxLH82	0.798a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 27 - Statistical Analysis Across Sex for Thigh Moisture

ANOVA Summary

p-value, Overall	0.016
p-value, Blocks	0.213
p-value, Diets	0.002
p-value, Sex	0.701
p-value, Diets*Sex	0.379
LSD 5%	0.5203

Diet Means

NK603	75.894bc
RX826	76.360ab
LH235 x LH185	76.606a
DK493	76.293ab
MON847	76.804a
B73HTxLH82	75.752c
RX770	76.039bc

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 28 - Statistical Analysis Across Sex for Thigh Protein

ANOVA Summary

p-value, Overall	0.066
p-value, Blocks	0.203
p-value, Diets	0.064
p-value, Sex	0.857
p-value, Diets*Sex	0.143
LSD 5%	0.5538

Diet Means

NK603	21.061a
RX826	21.161a
RX770	21.133a
DK493	21.025a
LH235 x LH185	20.659a
MON847	20.502a
B73HTxLH82	21.339a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 29 - Statistical Analysis Across Sex for Thigh Fat

ANOVA Summary

p-value, Overall	0.669
p-value, Blocks	0.752
p-value, Diets	0.321
p-value, Sex	0.603
p-value, Diets*Sex	0.642
LSD 5%	0.5661

Diet Means

NK603	2.455a
RX826	1.966a
LH235 x LH185	1.847a
DK493	2.139a
MON847	1.833a
B73HTxLH82	2.311a
RX770	2.153a

[a,b,c] Individual diet means with the same letter are not statistically different at the 5% level.

Table 30 - Statistical Analysis For Each Sex for Live Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.052	0.534
p-value, Blocks	0.026	0.442
p-value, Diets	0.214	0.522
LSD 5%	0.0967	0.0935
Diet Means	**Male**	**Female**
NK603	2.377a	2.115a
RX826	2.472a	2.127a
LH235 x LH185	2.418a	2.155a
DK493	2.397a	2.129a
MON847	2.402a	2.107a
B73HTxLH82	2.361a	2.088a
RX770	2.338a	2.052a
All Commercial*	2.398	2.110
p-value for NK603 compared to population of commercial diets *	0.690**	0.902
5% LSD for NK603 compared to population of commercial diets	0.1293	0.1002

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

**p-value for Blocks is 0.019.

Table 31 - Statistical Analysis For Each Sex for Live Pen Weight Day 1, kg/pen

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.250	0.765
p-value, Blocks	0.043	0.301
p-value, Diets	0.830	0.948
LSD 5%	12.6690	15.1300
Diet Means	**Male**	**Female**
NK603	459.200a	457.200a
RX826	462.000a	462.000a
LH235 x LH185	460.400a	454.000a
DK493	464.000a	457.200a
MON847	458.000a	462.00a
B73HTxLH82	465.200a	456.800a
RX770	457.200a	460.800a
All Commercial*	461.130	458.800
p-value for NK603 compared to population of commercial diets *	0.668**	0.782
5% LSD for NK603 compared to population of commercial diets	9.1149	11.6543

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

**p-value for Blocks is 0.024.

Table 32 - Statistical Analysis For Each Sex for Live Weight Day 1, g/bird

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.250	0.765
p-value, Blocks	0.043	0.301
p-value, Diets	0.830	0.948
LSD 5%	1.0558	1.2608
Diet Means	**Male**	**Female**
NK603	38.267a	38.100a
RX826	38.500a	38.500a
LH235 x LH185	38.367a	37.833a
DK493	38.667a	38.100a
MON847	38.167a	38.500a
B73HTxLH82	38.767a	38.067a
RX770	38.100a	38.400a
All Commercial*	38.428	38.233
p-value for NK603 compared to population of commercial diets *	0.668**	0.782
5% LSD for NK603 compared to population of commercial diets	0.7596	0.9704

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

**p-value for Blocks is 0.024.

Table 33 - Statistical Analysis For Each Sex for Fat Pad Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.071	0.243
p-value, Blocks	0.131	0.276
p-value, Diets	0.090	0.255
LSD 5%	0.0037	0.0043
Diet Means	**Male**	**Female**
NK603	0.032a	0.036a
RX826	0.035a	0.038a
LH235 x LH185	0.037a	0.041a
DK493	0.038a	0.040a
MON847	0.034a	0.040a
B73HTxLH82	0.035a	0.039a
RX770	0.036a	0.038a
All Commercial*	0.036	0.039
p-value for NK603 compared to population of commercial diets *	0.008	0.024
5% LSD for NK603 compared to population of commercial diets	0.0030	0.0032

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 34 - Statistical Analysis For Each Sex for Chill Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.098	0.398
p-value, Blocks	0.031	0.332
p-value, Diets	0.393	0.427
LSD 5%	0.0785	0.0714
Diet Means	**Male**	**Female**
NK603	1.685a	1.499a
RX826	1.754a	1.521a
LH235 x LH185	1.709a	1.536a
DK493	1.697a	[illegible]
MON847		
[illegible]		[illegible]
RX770	[illegible]0a	1.452a
All Commercial*	1.698	1.502
p-value for NK603 compared to population of commercial diets *	0.727**	0.948
5% LSD for NK603 compared to population of commercial diets	0.0908	0.0824

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

**p-value for Blocks is 0.023.

Table 35 - Statistical Analysis For Each Sex for Breast Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.175	0.386
p-value, Blocks	0.232	0.365
p-value, Diets	0.190	0.383
LSD 5%	0.0288	0.0247
Diet Means	**Male**	**Female**
NK603	0.426a	0.388a
RX826	0.452a	0.395a
LH235 x LH185	0.436a	0.393a
DK493	0.431a	0.394a
MON847	0.423a	0.386a
B73HTxLH82	0.411a	0.378a
RX770	0.420a	0.369a
All Commercial*	0.429	0.386
p-value for NK603 compared to population of commercial diets *	0.887	0.854
5% LSD for NK603 compared to population of commercial diets	0.0403	0.0294

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 36 - Statistical Analysis For Each Sex for Wings Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.113	0.430
p-value, Blocks	0.060	0.607
p-value, Diets	0.297	0.304
LSD 5%	0.0083	0.0077
Diet Means	**Male**	**Female**
NK603	0.195a	0.178a
RX826	0.204a	0.178a
LH235 x LH185	0.197a	0.178a
DK493	0.196a	0.178a
MON847	0.198a	0.173a
B73HTxLH82	0.193a	0.177a
RX770	0.194a	0.170a
All Commercial*	0.197	0.176
p-value for NK603 compared to population of commercial diets *	0.662	0.571
5% LSD for NK603 compared to population of commercial diets	0.0105	0.0093

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 37 - Statistical Analysis For Each Sex for Thigh Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.087	0.550
p-value, Blocks	0.026	0.302
p-value, Diets	0.393	0.681
LSD 5%	0.0133	0.0153
Diet Means	**Male**	**Female**
NK603	0.296a	0.262a
RX826	0.306a	0.258a
LH235 x LH185	0.295a	0.259a
DK493	0.295a	0.254a
MON847	0.299a	0.253a
B73HTxLH82	0.297a	0.253a
RX770	0.289a	0.248a
All Commercial*	0.297	0.254
p-value for NK603 compared to population of commercial diets *	0.943	0.217
5% LSD for NK603 compared to population of commercial diets	0.0158	0.0118

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 38 - Statistical Analysis For Each Sex for Drum Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.007	0.719
p-value, Blocks	<0.001	0.305
p-value, Diets	0.523	0.901
LSD 5%	0.0103	0.0103
Diet Means	**Male**	**Female**
NK603	0.243a	0.210a
RX826	0.252a	0.211a
LH235 x LH185	0.244a	0.210a
DK493	0.241a	0.209a
MON847	0.246a	0.208a
B73HTxLH82	0.242a	0.206a
RX770	0.242a	0.204a
All Commercial*	0.244	0.208
p-value for NK603 compared to population of commercial diets *	0.832**	0.544
5% LSD for NK603 compared to population of commercial diets	0.0109	0.0079

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

**p-value for Blocks is 0.002.

Table 39 - Statistical Analysis For Each Sex for % Fat Pad Weight (FatPad wt / Live Wt),

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.089	0.247
p-value, Blocks	0.261	0.457
p-value, Diets	0.072	0.177
LSD 5%	0.0015	0.0017
Diet Means	**Male**	**Female**
NK603	0.013a	0.017a
RX826	0.014a	0.018a
LH235 x LH185	0.015a	0.019a
DK493	0.016a	0.019a
MON847	0.014a	0.019a
B73HTxLH82	0.015a	0.018a
RX770	0.015a	0.018a
All Commercial*	0.015	0.019
p-value for NK603 compared to population of commercial diets *	0.051	0.010
5% LSD for NK603 compared to population of commercial diets	0.0016	0.0013

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 40 - Statistical Analysis For Each Sex for Percent Chill Weight

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.549	0.074
p-value, Blocks	0.112	0.099
p-value, Diets	0.972	0.118
LSD 5%	0.0073	0.0057
Diet Means	**Male**	**Female**
NK603	0.708a	0.709a
RX826	0.709a	0.715a
LH235 x LH185	0.706a	0.713a
DK493	0.708a	0.711a
MON847	0.706a	0.712a
B73HTxLH82	0.708a	0.712a
RX770	0.709a	0.707a
All Commercial*	0.708	0.711
p-value for NK603 compared to population of commercial diets *	0.844	0.436
5% LSD for NK603 compared to population of commercial diets	0.0052	0.0076

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 41 - Statistical Analysis For Each Sex for Percent Breast Weight

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.200	0.695
p-value, Blocks	0.579	0.838
p-value, Diets	0.110	0.482
LSD 5%	0.0084	0.0074
Diet Means	**Male**	**Female**
NK603	0.252a	0.259a
RX826	0.258a	0.259a
LH235 x LH185	0.255a	0.256a
DK493	0.254a	0.260a
MON847	0.249a	0.257a
B73HTxLH82	0.245a	0.254a
RX770	0.253a	0.253a
All Commercial*	0.252	0.257
p-value for NK603 compared to population of commercial diets *	0.946	0.544
5% LSD for NK603 compared to population of commercial diets	0.0129	0.0078

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 42 - Statistical Analysis For Each Sex for Percent Wing Weight

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.520	<0.001
p-value, Blocks	0.236	0.010
p-value, Diets	0.725	0.001
LSD 5%	0.0021	0.0017
Diet Means	**Male**	**Female**
NK603	0.116a	0.119ab
RX826	0.116a	0.117bcd
LH235 x LH185	0.116a	0.116de
DK493	0.116a	0.118abc
MON847	0.117a	0.116e
B73HTxLH82	0.116a	0.119a
RX770	0.117a	0.118abcd
All Commercial*	0.116	0.117
p-value for NK603 compared to population of commercial diets *	0.693	0.312**
5% LSD for NK603 compared to population of commercial diets	0.0016	0.0037

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

**p-value for Blocks is 0.008..

Table 43 - Statistical Analysis For Each Sex for Percent Thigh Weight

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.277	0.031
p-value, Blocks	0.650	0.039
p-value, Diets	0.154	0.080
LSD 5%	0.0039	0.0041
Diet Means	**Male**	**Female**
NK603	0.176a	0.175a
RX826	0.174a	0.169a
LH235 x LH185	0.173a	0.169a
DK493	0.174a	0.168a
MON847	0.177a	0.169a
B73HTxLH82	0.178a	0.170a
RX770	0.174a	0.170a
All Commercial*	0.175	0.169
p-value for NK603 compared to population of commercial diets *	0.659	0.003
5% LSD for NK603 compared to population of commercial diets	0.0054	0.0035

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 44 - Statistical Analysis For Each Sex for Percent Drum Weight

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.022	0.284
p-value, Blocks	0.002	0.484
p-value, Diets	0.514	0.204
LSD 5%	0.0037	0.003
Diet Means	**Male**	**Female**
NK603	0.145a	0.140a
RX826	0.144a	0.139a
LH235 x LH185	0.143a	0.137a
DK493	0.142a	0.138a
MON847	0.145a	0.139a
B73HTxLH82	0.145a	0.139a
RX770	0.146a	0.141a
All Commercial*	0.144	0.139
p-value for NK603 compared to population of commercial diets *	0.651**	0.279
5% LSD for NK603 compared to population of commercial diets	0.0039	0.0037

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

**p-value for Blocks is 0.01.

Table 45 - Statistical Analysis For Each Sex for Final Pen Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.553	0.239
p-value, Blocks	0.255	0.113
p-value, Diets	0.748	0.463
LSD 5%	1.9771	1.1367
Diet Means	**Male**	**Female**
NK603	24.280a	21.260a
RX826	25.380a	21.360a
LH235 x LH185	23.800a	21.640a
DK493	23.860a	21.660a
MON847	24.160a	20.800a
B73HTxLH82	24.220a	21.480a
RX770	24.280a	20.780a
All Commercial*	24.283	21.287
p-value for NK603 compared to population of commercial diets *	0.997	0.953
5% LSD for NK603 compared to population of commercial diets	1.5373	0.9182

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 46 - Statistical Analysis For Each Sex for R/M Weight, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.546	0.133
p-value, Blocks	0.852	0.046
p-value, Diets	0.318	0.430
LSD 5%	0.7198	0.3332
Diet Means	**Male**	**Female**
NK603	0.308a	0.140a
RX826	0.196a	0.145a
LH235 x LH185	0.814a	0.133a
DK493	0.726a	0.132a
MON847	0.194a	0.426a
B73HTxLH82	0.134a	0.150a
RX770	0.180a	0.132a
All Commercial*	0.374	0.186
p-value for NK603 compared to population of commercial diets *	0.852	0.733
5% LSD for NK603 compared to population of commercial diets	0.8581	0.3268

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 47 - Statistical Analysis For Each Sex for Food Consumption, kg

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.183	0.330
p-value, Blocks	0.073	0.184
p-value, Diets	0.452	0.498
LSD 5%	2.4231	1.9223
Diet Means	**Male**	**Female**
NK603	36.820a	33.360a
RX826	39.120a	34.760a
LH235 x LH185	37.160a	34.580a
DK493	37.220a	34.860a
MON847	37.060a	34.080a
B73HTxLH82	36.800a	34.140a
RX770	37.640a	33.220a
All Commercial*	37.500	34.273
p-value for NK603 compared to population of commercial diets *	0.481	0.236
5% LSD for NK603 compared to population of commercial diets	1.9386	1.5404

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 48 - Statistical Analysis For Each Sex for Average Food Consumption, g/bird.

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.296	0.168
p-value, Blocks	0.231	0.086
p-value, Diets	0.374	0.366
LSD 5%	0.2083	0.1734
Diet Means	**Male**	**Female**
NK603	3.757a	3.336a
RX826	3.912a	3.476a
LH235 x LH185	3.955a	3.458a
DK493	3.892a	3.486a
MON847	3.859a	3.476a
B73HTxLH82	3.757a	3.414a
RX770	3.764a	3.322a
All Commercial*	3.856	3.439
p-value for NK603 compared to population of commercial diets *	0.306	0.146
5% LSD for NK603 compared to population of commercial diets	0.2234	0.1403

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 49 - Statistical Analysis For Each Sex for Average Weight, kg/bird

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.296	0.383
p-value, Blocks	0.140	0.172
p-value, Diets	0.520	0.615
LSD 5%	0.1081	0.0945
Diet Means	**Male**	**Female**
NK603	2.477a	2.126a
RX826	2.538a	2.136a
LH235 x LH185	2.529a	2.164a
DK493	2.487a	2.166a
MON847	2.515a	2.120a
B73HTxLH82	2.471a	2.148a
RX770	2.428a	2.078a
All Commercial*	2.495	2.135
p-value for NK603 compared to population of commercial diets *	0.707	0.805
5% LSD for NK603 compared to population of commercial diets	0.1145	0.0770

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 50 - Statistical Analysis For Each Sex for Feed Efficiency

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.692	<0.001
p-value, Blocks	0.768	0.002
p-value, Diets	0.517	0.005
LSD 5%	0.0539	0.0328
Diet Means	**Male**	**Female**
NK603	1.517a	1.570d
RX826	1.542a	1.627ab
LH235 x LH185	1.564a	1.598bcd
DK493	1.564a	1.609abc
MON847	1.535a	1.640a
B73HTxLH82	1.521a	1.590cd
RX770	1.551a	1.597bcd
All Commercial*	1.546	1.610
p-value for NK603 compared to population of commercial diets *	0.153	0.112**
5% LSD for NK603 compared to population of commercial diets	0.0402	0.0542

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

**p-value for Blocks is 0.014.

Table 51 - Statistical Analysis For Each Sex for Adjusted Feed Efficiency

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.161	0.085
p-value, Blocks	0.237	0.147
p-value, Diets	0.167	0.105
LSD 5%	0.033	0.0361
Diet Means	**Male**	**Female**
NK603	1.497a	1.559a
RX826	1.530a	1.616a
LH235 x LH185	1.510a	1.588a
DK493	1.513a	1.600a
MON847	1.522a	1.605a
B73HTxLH82	1.512a	1.579a
RX770	1.540a	1.587a
All Commercial*	1.521	1.596
p-value for NK603 compared to population of commercial diets *	0.116	0.057
5% LSD for NK603 compared to population of commercial diets	0.0324	0.0380

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 52 - Statistical Analysis For Each Sex for Breast Moisture

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.205	0.371
p-value, Blocks	0.242	0.830
p-value, Diets	0.226	0.182
LSD 5%	0.8740	0.4028
Diet Means	**Male**	**Female**
NK603	74.684a	74.798a
RX826	74.388a	75.044a
LH235 x LH185	74.656a	74.796a
DK493	74.604a	74.944a
MON847	74.708a	75.278a
B73HTxLH82	74.774a	74.984a
RX770	73.790a	75.088a
All Commercial*	74.487	75.022
p-value for NK603 compared to population of commercial diets *	0.639	0.253
5% LSD for NK603 compared to population of commercial diets	1.0157	0.4459

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 53 - Statistical Analysis For Each Sex for Breast Protein

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.557	0.122
p-value, Blocks	0.568	0.845
p-value, Diets	0.466	0.040
LSD 5%	0.9911	0.4913
Diet Means	**Male**	**Female**
NK603	24.098a	24.125a
RX826	24.541a	23.929a
LH235 x LH185	24.191a	23.826a
DK493	24.370a	23.944a
MON847	24.060a	23.363a
B73HTxLH82	24.026a	24.012a
RX770	24.856a	23.835a
All Commercial*	24.341	23.818
p-value for NK603 compared to population of commercial diets *	0.518	0.279
5% LSD for NK603 compared to population of commercial diets	0.7561	0.6491

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 54 - Statistical Analysis For Each Sex for Breast Fat

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.403	0.260
p-value, Blocks	0.209	0.864
p-value, Diets	0.582	0.106
LSD 5%	0.2940	0.2786
Diet Means	**Male**	**Female**
NK603	0.862a	0.872a
RX826	0.768a	0.852a
LH235 x LH185	1.000a	1.072a
DK493	0.878a	0.740a
MON847	1.018a	0.844a
B73HTxLH82	0.878a	0.718a
RX770	1.030a	1.040a
All Commercial*	0.929	0.880
p-value for NK603 compared to population of commercial diets *	0.579	0.973
5% LSD for NK603 compared to population of commercial diets	0.2893	0.4125

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 55 - Statistical Analysis For Each Sex for Thigh Moisture

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.048	0.166
p-value, Blocks	0.216	0.742
p-value, Diets	0.038	0.069
LSD 5%	0.5603	0.9446
Diet Means	**Male**	**Female**
NK603	75.790c	75.998a
RX826	76.350abc	76.370a
LH235 x LH185	76.808a	76.404a
DK493	76.360ab	76.226a
MON847	76.544ab	77.064a
B73HTxLH82	76.106bc	75.398a
RX770	76.098bc	75.980a
All Commercial*	76.378	76.240
p-value for NK603 compared to population of commercial diets *	0.101	0.699
5% LSD for NK603 compared to population of commercial diets	0.7512	1.5205

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 56 - Statistical Analysis For Each Sex for Thigh Protein

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.488	0.036
p-value, Blocks	0.374	0.235
p-value, Diets	0.516	0.025
LSD 5%	0.8035	0.7985
Diet Means	**Male**	**Female**
NK603	20.927a	21.196ab
RX826	21.434a	20.887bc
LH235 x LH185	20.525a	20.793bc
DK493	20.990a	21.059ab
MON847	20.817a	20.187c
B73HTxLH82	20.866a	21.812a
RX770	21.155a	21.111ab
All Commercial*	20.965	20.975
p-value for NK603 compared to population of commercial diets *	0.915	0.714
5% LSD for NK603 compared to population of commercial diets	0.8622	1.4628

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Table 57 - Statistical Analysis For Each Sex for Thigh Fat

ANOVA Summary	**Male**	**Female**
p-value, Overall	0.268	0.745
p-value, Blocks	0.332	0.410
p-value, Diets	0.253	0.839
LSD 5%	0.8707	0.7219
Diet Means	**Male**	**Female**
NK603	2.672a	2.238a
RX826	2.202a	1.730a
LH235 x LH185	1.598a	2.096a
DK493	2.212a	2.066a
MON847	1.694a	1.972a
B73HTxLH82	2.328a	2.294a
RX770	2.318a	1.988a
All Commercial*	2.059	2.024
p-value for NK603 compared to population of commercial diets *	0.141	0.427
5% LSD for NK603 compared to population of commercial diets	0.9032	0.5404

[a,b] Individual diet means with the same letter are not statistically different at the 5% level.

* Derived from a mixed linear model accounting for variation among as well as within diets.

Figure 1. Average Weight (expressed as kg/bird) for broilers fed each variety. Error bars are ± one half the 5% Least Significant Difference (LSD). Therefore any two non-overlapping varieties are statistically different at the 5% level of significance.

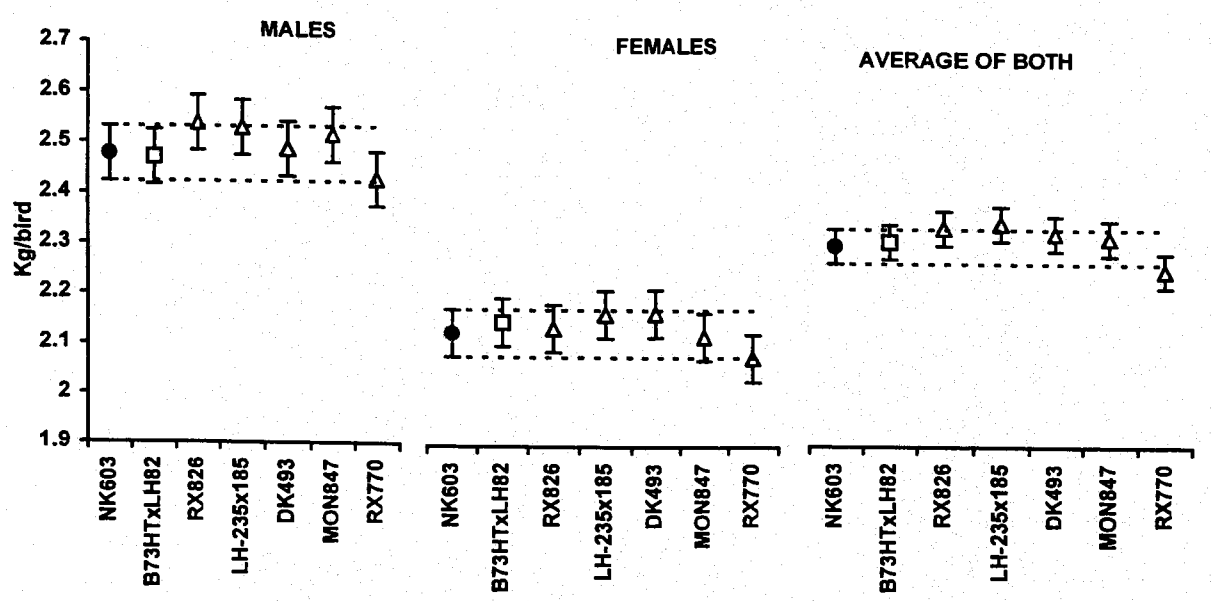


Figure 2. Average Food Consumption for broilers fed each variety. Error bars are ± one half the 5% Least Significant Difference (LSD). Therefore any two non-overlapping varieties are statistically different at the 5% level of significance.

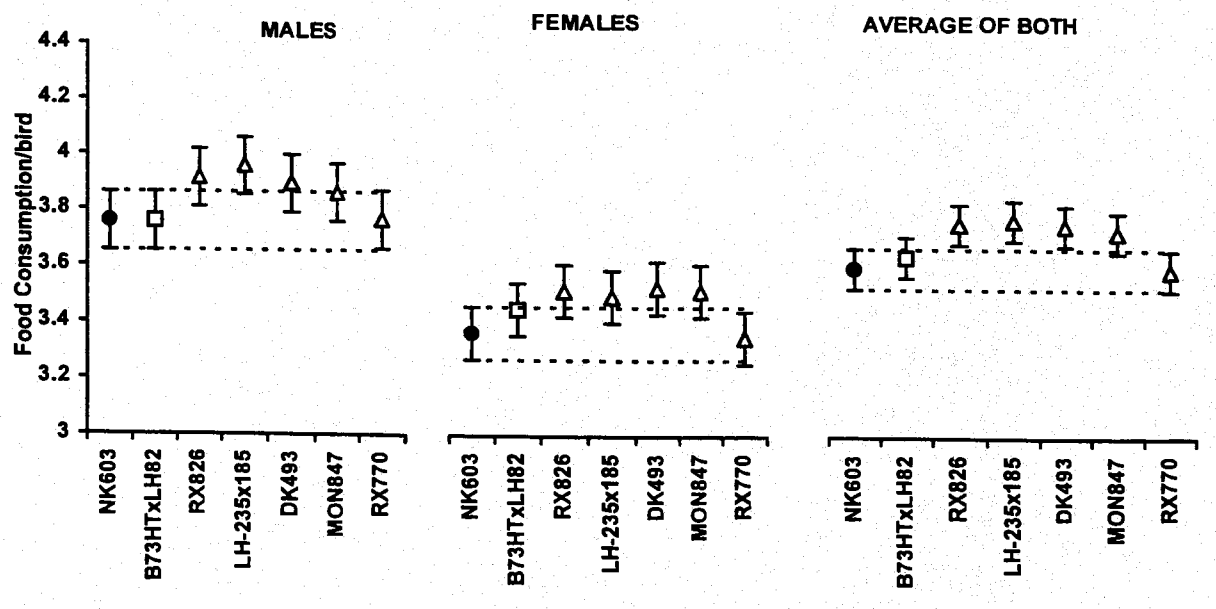


Figure 3. Mean feed efficiency for broilers fed each variety. Error bars are ± one half the 5% Least Significant Difference (LSD). Therefore any two non-overlapping varieties are statistically different at the 5% level of significance.

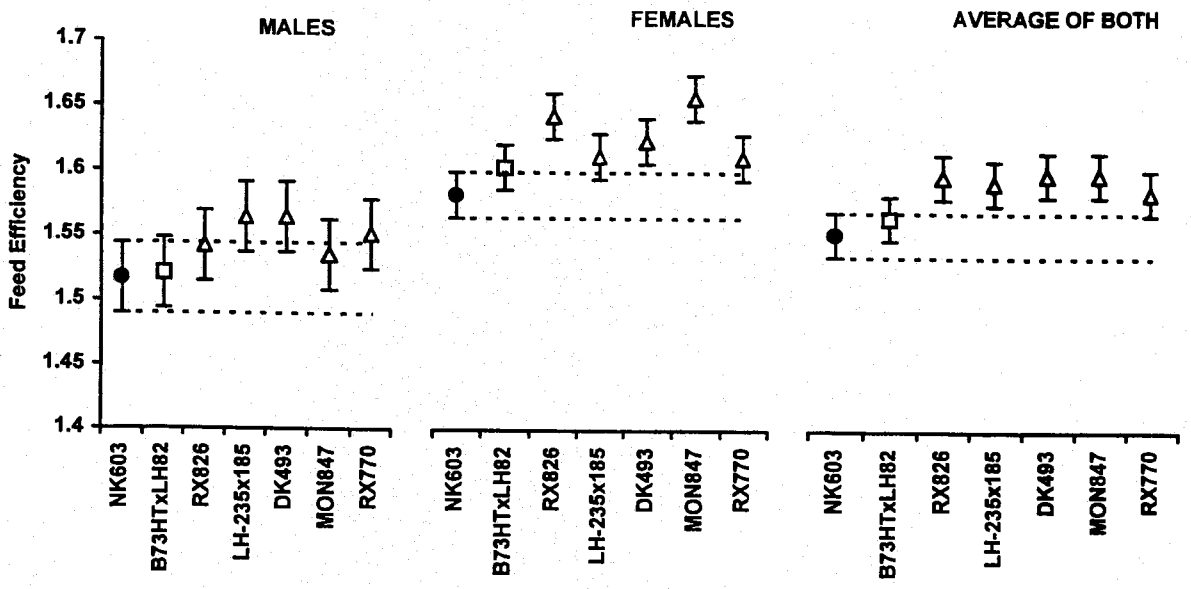
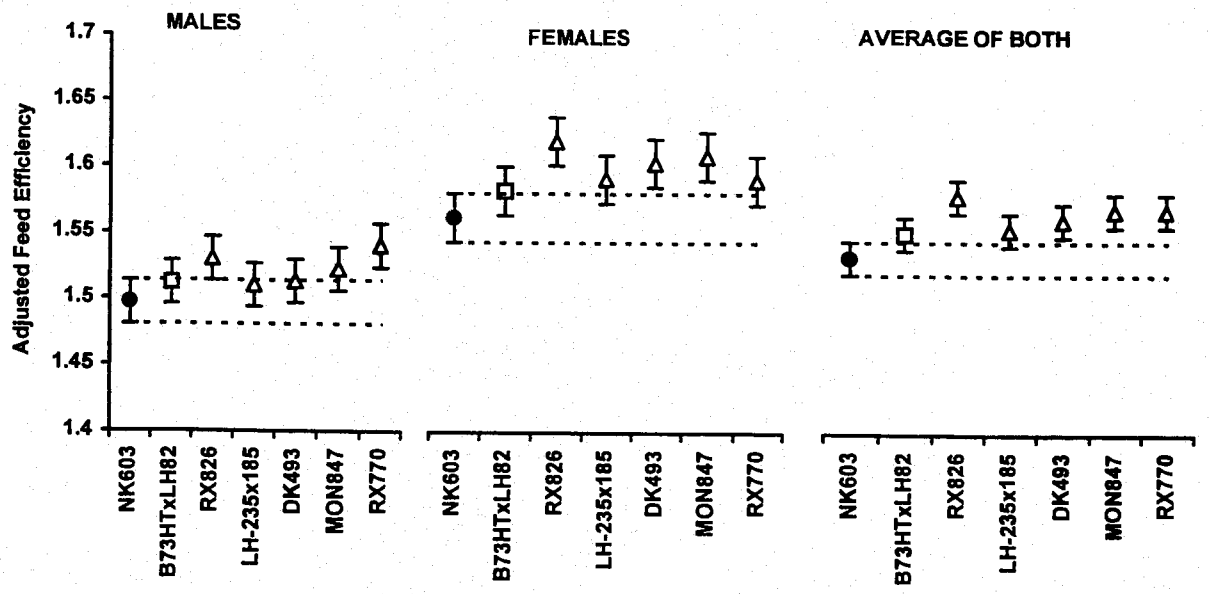


Figure 4. Adjusted feed efficiency for broilers fed each variety. Error bars are ± one half the 5% Least Significant Difference (LSD). Therefore any two non-overlapping varieties are statistically different at the 5% level of significance.



QA Statement

Study Title: Comparison of Broiler Performance When Fed Diets Containing Events MON853 and NK603, Parental Lines or Commercial Corn

Unique Identifier for the Portion of the Study: Statistical Analysis Report

Study Number: 2000-01-39-02 (MN-00-3)

Reviews conducted by the QAU confirm the sub-report reflects the raw data.

Following is a list of reviews conducted by the Monsanto Regulatory QAU on the portion of the study reported herein.

Dates of Inspection/Audit	Phase	Date Reported to Study Director	Date Reported to Management
01/04/2001	Draft Report Audit	01/04/2001	01/04/2001

Paula A. Price
Quality Assurance Unit
Monsanto Regulatory, Monsanto Company

January 9, 2001
Date

Study Title

Pesticide Profile, Mycotoxin, and Compositional Analyses of Corn Events MON853 and NK603, Parental Control Events, and Reference Lines Produced in the U.S.

Authors

Mary L. Taylor, James A. Astwood, Matthew Breeze*, and Charla Stone**

Study Completed On

January 22, 2001

Performing Laboratories

Monsanto Company
Monsanto Regulatory
700 Chesterfield Parkway North
St. Louis, MO 63198

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3301 Kinsman
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****Romer Labs**
1301 Stylemaster Drive
Union, MO 63084

Laboratory Project ID

Study Number: 00-01-39-07
Monsanto Report No: MSL-16799

Received 9 April 2001

Statement of No Data Confidentiality Claims

No claim of confidentially is made for any information contained in this study on the basis of its falling within the scope of FIFRA § 10(d) (1) (A), (B), and (C).

We submit this material to the United States Environmental Protection Agency specifically under the requirements set forth in FIFRA as amended, and consent to the use and disclosure of this material by EPA strictly in accordance with FIFRA. By submitting this material to EPA in accordance with the method and format requirements contained in PR Notice 86-5, we reserve and do not waive any rights involving this material that are or can be claimed by the company notwithstanding this submission to EPA.

Company

Company Agent

Title

Signature

Statement of Compliance

This study meets the GLP requirements for 40 CFR Part 160 (EPA) except for the following:

The mycotoxin analyses completed at Romer Labs was conducted using a non-GLP assay. These analyses were a part of the pre-study requirement for subsequent animal feeding studies and were conducted under high scientific standards.

For the compositional analyses at Covance, the reference standards were not characterized according to GLP standards, reserve samples from each batch of the reference standards were not retained. These exceptions had no effect on the integrity or quality of the study.

For the test, control, and reference characterization of the grain performed at Monsanto, the Traitcheck strip data for the negative quality control re-analysis to confirm the first set of data was not retained, however it was noted as similar to the first set of data.

Submitter — Date

Ravinder S Sidhu — Jan 22, 2001
Sponsor Representative — Date

Mary L. Taylor — Jan 22, 2001
Study Director — Date

Quality Assurance Unit Statement

Study Title: Pesticide Profile, Mycotoxin, and Compositional Analyses of Corn Events MON 853 and NK603, Parental Control Events and Reference Lines Produced in the U.S.

Study Number: 00-01-39-07

Reviews conducted by the QAU confirm that the final report reflects the raw data.

The following is a list of reviews conducted by the Monsanto AG Regulatory QAU on the study reported herein.

Dates of Inspection/Audit	Phase	Date Reported to Study Director	Date Reported to Management
04/12/2000	T/C/R Audit	04/12/2000	04/12/2000
01/17/2001	ELISA	01/17/2001	01/17/2001
01/19/2001	Raw Data/Draft Report	01/19/2001	01/19/2001

Paula A. Price — January 19, 2001

Quality Assurance Unit
Monsanto Regulatory

Date

Signatures of Approval

Study Number: 00-01-39-07

MSL Number: MSL-16799

Title: Pesticide Profile, Mycotoxin, and Compositional Analyses of Corn Events MON 853 and NK603, Parental Control Lines, and Reference Lines Produced in the U.S.

Facilities

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700 Chesterfield Parkway North
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Romer Labs
1301 Stylemaster Drive
Union, MO 63084

Principal Investigators: Mary L. Taylor, Matthew Breeze, and Charla Stone

Experimental Start Date: 3/1/00

Experimental Completion Date: 1/22/01

Records Retention: Study specific raw data generated at Monsanto, protocol, final reports from Covance and Monsanto, and data summaries and copies of the raw data from Romer Labs will be retained at Monsanto, St. Louis. Study specific raw data and facility records will be retained at Covance Labs and Romer Labs.

Sample Storage: Any unused study samples that are not destroyed will be stored at Monsanto, St. Louis.

Signatures of Final Report Approval:

Mary Taylor — Jan 22, 2001
Study Director — Date

Ravinder S Sidhu — Jan 22, 2001
Sponsor Representative — Date

Product Safety Center Representative — Jan 22, 2001
Date

Abbreviations and Definitions

SOP	Standard Operating Procedure
EPSPS	5-enolpyruvyl shikimate-3-phosphate synthase
g, mg	gram, milligram
AACC	American Association of Cereal Chemists
AOCS	American Oil Chemists Society
AOAC	Association of Official Analytical Chemists
fw	fresh weight
ppm	Parts per million
NDFE	Neutral Detergent Fiber, Enzyme Method
ADF	Acid Detergent Fiber
PAM	Pesticide Analytical Manual
FDA	Food and Drug Administration
Cry3Bb1	A natural isolate, and holotype, of the Cry3Bb class of *B.t.* Cry proteins
v/v	volume to volume

Table of Contents

Section **Page**

1.0 Summary

The purpose of this study was to conduct pesticide profile, mycotoxin, and compositional analyses of grain from corn events MON853 and Roundup Ready® NK603. The corn event MON853 expresses the insect control protein, Cry3Bb1.11231. The corn event NK603 expresses CP4 EPSP synthase (CP4 EPSPS) which confers tolerance to the Roundup® herbicide. The study includes analyses of non-transgenic parental control corn events (MON847 and B73Ht x LH82 for MON853 and NK603, respectively) that have background genetics representative of their corresponding test events but do not express the Cry3Bb1.11231 insect control protein or CP4 EPSPS protein. In addition, the study included five non-transgenic commercial reference lines grown at the same locations as the test and control events.

All values for the pesticide screen were below the limit of detection. All values for the mycotoxin screen were acceptable for all samples. Limits of detection for both screens are described in section 5.0. Compositional data on test, control, and reference substances was used to formulate diets in subsequent animal feeding studies.

2.0 Purpose

The purpose of this study was to conduct pesticide profile, mycotoxin, and compositional analyses of grain from corn events MON853 and NK603. Compositional data on test, control, and reference substances was used to formulate animal diets in subsequent animal feeding studies.

3.0 Timelines

3.1 *Experimental Start Date:* March, 2000

3.2 *Experimental Termination Date:* January, 2001

4.0 Test, Control and Reference Substances

4.1 *Test Substances.* The first test substance is the corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. The second test substance is the corn event NK603 produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03 during the 2000 field season.

4.2 *Parental Control Substances.* The first parental (negative) control substance, MON847, is the non-transgenic parental control corn event for MON 853. It was also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. The second parental (negative) control substance, B73Ht x LH82, is the non-transgenic parental control corn event for NK603.

It was also produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03 during the 2000 field season.

4.3 *Reference Control Substances.* Reference control substances in this study include: the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season; in addition, four non-transgenic commercial corn variety reference substances were grown under Production Plan #00-01-46-03 during the 2000 field season in Kaunakakai, Hawaii: HC33 x LH283, LH235 x LH185, LH242 x LH262, and LH200 x LH172.

4.4 *Test and Control Substance Characterization.* The identity of the test substances were confirmed by molecular PCR analysis and by field and chain-of-custody records. The parental (negative) control substance MON847 and the RX770 reference control substance were identified by ELISA, chain-of-custody records, and other documentation. For test substance NK603, parental control substance B73Ht x LH82, reference controls HC33 x LH283, LH235 x LH185, LH242 x LH262, and LH200 x LH172, RR Traitcheck strip method was used to confirm identity and chain-of-custody records in addition to molecular analysis of the test substance NK603. These characterizations are archived under this study with the exception of the PCR data for NK603 which is archived under production plan 00-01-46-03.

4.5 *Test and Control Substance Seed Production and Shipment.* Test, parental control, and reference substances were all produced during the 1999/2000 growing seasons in the US. For test substance MON853 and parental control substance MON847, two replicates were harvested. Both replicates of each line were screened for mycotoxin and pesticides and were determined to be within acceptable values. Grain from both replicates except 250 lbs of replicate 1 of both MON853 and MON847 (reserved for the rat toxicity study) was pooled. Bulk grain of all test, parental control, and reference substances were shipped at ambient temperature to Colorado Quality Research (Wellington, CO) for subsequent feeding studies. The remaining reference substance grain was shipped to Monsanto for potential use in other studies. Chain of custody documentation accompanied all shipments. Grain was stored at ambient temperature and humidity.

5.0 Analytical Methods

5.1 *Pesticide Profile and Compositional Analyses at Covance.* All corn grain samples (including two replicates for both MON853 and MON847) were analyzed for the presence of pesticides using the FDA PAM 304 pesticide screen (M304)-Appendix 1.

The following compositional analyses were performed on the grain samples MON853 (replicate 1 and pooled grain), MON847 (replicate 1 and pooled grain), NK603, B73Ht x LH82, RX770, HC33 x LH283, LH235 x LH185, LH242 x LH262, and LH200 x LH172: proximates [moisture (M100), protein (PGEN), fat (FSOX), ash (ASHM)], crude fiber (CFIB), amino acid composition (TAAP), fatty acid profile (FAPM) acid detergent fiber (ADF), neutral detergent fiber (NDFE), sulfur (SULA), calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, zinc (ICPS), cadmium (CDA), selenium (SEAS), and chloride (CLA). Carbohydrate (CHO) values were estimated by calculation.

a) **Acid detergent fiber (ADF).** The method used was based on a modified version of a USDA method (1970). The sample was placed in a fritted vessel and washed with an acidic boiling detergent solution that dissolved the protein, carbohydrate, and ash. An acetone wash removed the fats and pigments. The lignocellulose fraction was collected on the frit and determined gravimetrically. The limit of detection of the method for this study was 0.1% fresh weight (fw). There was no analytical reference substance for this analysis.

b) **Amino acid composition (TAAP).** The method used was based on a modified version of AOAC method 982.30 (2000) which estimates the levels of 18 amino acids in the sample: alanine, arginine, aspartic acid (including asparagine), cystine (including cysteine), glutamic acid (including glutamine), glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine, and valine. The sample was assayed by three methods to obtain the full profile. Tryptophan required a base hydrolysis with sodium hydroxide. The sulfur containing amino acids required an oxidation with performic acid prior to hydrolysis with hydrochloric acid. Analysis of the samples for the remaining amino acids was accomplished through direct hydrolysis with hydrochloric acid. Once hydrolyzed, the individual amino acids were quantitated using an automated amino acid analyzer. The limit of detection of the method was 0.1 mg/g fw. The reference standards were: Beckman K18, 2.5 µmol/mL per constituent except cystine (1.25 µmol/mL), lot no. S911165; Aldrich L-tryptophan, 99%, lot no. 12729HS; Aldrich L-cysteic acid monohydrate, 98.0%, lot no. 04615MS; and Sigma L-methionine sulfone, 100%, lot no. 012H3349.

c) **Ash (ASHM).** The method used was based on a modified version of AOAC method 923.03 (2000). The sample was placed in an electric furnace at 550 °C and ignited to drive off all volatile organic matter. The nonvolatile matter remaining was quantitated gravimetrically and calculated to determine percent ash. The limit of detection for this study was 0.1% fw. There is no analytical reference for this analysis.

% fw = (g/g fw) x 100

d) **Cadmium (CDA).** The method used was based on modified versions of AOAC method 974.27 (2000), U.S. EPA method Metals 1-19 and Method 213.1 (1979), and Perkin-Elmer method (1982). The sample was either dry-ashed, wet-ashed, or read directly. If dry-ashed, the sample was dried, pre-charred and ashed at 500 °C ± 50 °C in a muffle furnace for 5 to 16 hours. The sample was removed from the muffle furnace, cooled, treated with nitric acid, re-ashed, and dissolved in hydrochloric acid solution. If wet-ashed, the sample was digested on a hot plate with nitric acid, hydrochloric acid, and/or hydrogen peroxide. The amount of cadmium was determined by comparing the signal of the unknown sample, measured by the atomic absorption (AA) spectrophotometer, with the signal of the standard solutions. The limit of detection for this assay is 0.04 ppm. Reference Standard: Fisher Scientific, 1000 ppm cadmium, Lot Number 981734-24.

e) **Carbohydrates (CHO).** The total carbohydrate level was calculated by difference using the fresh weight-derived data and the following equation:

% carbohydrates = 100% - (% protein + % fat + % moisture + % ash)

The limit of detection for this study was 1.0%. There was no analytical reference standard for the analysis.

f) **Chloride (CLA).** The method used was based on modified versions of AOAC methods 963.05, 969.10, and 971.27 (2000). The sample was put into solution with double deionized water and then made acidic with nitric acid. Chloride was determined potentiometrically by titrating with a standard silver nitrate solution to a predetermined endpoint. The limit of detection for this assay was 0.004%. The analytical reference substance used for this method was Mallinckrodt, 1,000 ppm sodium chloride, 99.9%, Lot Number 7581.

g) **Crude Fiber (CFIB).** The method used was based on a modified version of AOAC method 962.09 (2000). Crude fiber was quantitated as the loss on ignition of dried residue remaining after digestion of the sample with 1.25% sulfuric acid and 1.25% sodium hydroxide solutions under specific conditions. The limit of detection for this study was 0.1% fw. There is no analytical reference substance for this analysis.

h) **Fat by Soxhlet Extraction (FSOX).** The method used was based on a modified version of AOAC method 960.39 (2000). The sample was weighed into a cellulose thimble containing sand or sodium sulfate and dried to remove excess moisture. Pentane was dripped through the sample to remove the fat. The extract was evaporated, dried and weighed. The limit of detection of this method for this study was 0.1% fw. There was no analytical reference substance for this analysis.

i) **Fatty Acid Profile (FAPM).** The method used was based on a modified version of AOCS method Ce 1-62 (1997) which estimates the levels of 22 fatty acids in the sample: 8:0 caprylic acid, 10:0 capric acid, 12:0 lauric acid, 14:0 myristic acid, 14:1 myristoleic acid, 15:0 pentadecanoic acid, 15:1 pentadecenoic acid, 16:0 palmitic acid, 16:1 palmitoleic acid, 17:0 heptadecanoic acid, 17:1 heptadecenoic acid, 18:0 stearic acid, 18:1 oleic acid, 18:2 linoleic acid, 18:3 linolenic, 18:3 gamma linolenic acid, 20:0 arachidic acid, 20:1 eicosenoic acid, 20:2 eicosadienoic acid, 20:3 eicosatrienoic acid, 20:4 arachidonic acid, and 22:0 behenic acid. The lipid in grain was extracted and saponified with 0.5 N sodium hydroxide in methanol. The saponification mixture was methylated with 14% (v/v) boron trifluoride:methanol. The resulting methyl esters were extracted with heptane containing an internal standard. The methyl esters of the fatty acids were analyzed by gas chromatography using external standards for quantitation. The limit of detection of this method for this study was 0.004%. The analytical reference standards (purity 100%) were: Nu Chek Prep Hazelton special prep no. 1 (lot no. JA10-I) and no. 4 (lot no. JY26-J), Nu Chek special prep no. 2 (lot no. S10-G) and no. 3 (lot no. F23-J), and Nu Chek Prep methyl gamma linolenate (lot nos. U-63M-F25-J).

j) **Minerals/ICP emission spectrometry (ICPS).** The method used was based on modified version of AOAC methods 984.27 and 985.01 (2000) and a literature method (Dahlquist *et al.*, 1978). This method estimates the levels of nine minerals in the sample: calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, and zinc. The sample was dried, precharred, and ashed overnight at 500 °C ± 50 °C . The ashed sample was treated with hydrochloric acid, taken to dryness, and put into a solution of 5% (v/v) hydrochloric acid. The amount of each element was determined at appropriate wavelengths by comparing the emission of the unknown sample, measured by the inductively coupled plasma, with the emission of the standard solutions described below.

Table A
Spex Certiprep Reference Standards and Limits of Detection

Mineral	Lot Numbers	Concentration (ppm)	Limit of Detection (ppm)
Calcium	L6-59CA	10,000	20.0
Copper	6-242CU	1,000	0.500
Iron	7-97FE	1,000	2.00
Magnesium	L5-187MG	10,000	20.0
Manganese	6-201MN	1,000	0.300
Phosphorus	K6-54P	10,000	20.0
Potassium	M6-16K	10,000	100
Sodium	M6-41NA	10,000	100
Zinc	6-264ZN	1,000	0.400

k) **Moisture (M100).** The method used was based on a modified version of AOAC methods 926.08 and 925.09 (2000). The sample was dried in a vacuum oven at 100 °C to a constant weight. The moisture loss was determined and converted to percent moisture. The limit of detection of this method for this study was 0.1% fw. There was no analytical reference substance for this analysis.

l) **Neutral detergent fiber, enzyme method (NDFE).** The method used was based on modified versions of an AACC method 32.20 (1998) and a USDA method (1970). The sample was placed in a fritted vessel and washed with a neutral boiling detergent solution that dissolved the protein, carbohydrate, enzyme and ash. An acetone wash removed the fats and pigments. The hemicellulose, cellulose and lignin fractions were collected on the frit and determined gravimetrically. The limit of detection of this method for this study was 0.1% fw. There was no analytical reference substance for this analysis.

m) **Pesticide Profile (M304).** The method used was based on a modified version of a FDA method (1999). The sample was blended with ethyl acetate and cleaned up by gel permeation chromatography. The extract was analyzed for organophosphates, chlorinated, and nitrogen on a gas chromatography system. A high performance liquid chromatography system was used for the analysis of carbamates. The limits of detection (ppm) for this assay were: Organophosphates (0.050), Organonitrogens (0.500), Organochlorinated (0.200), and N-Methylcarbamates (0.100). Reference standards include:
Restek Corporation Custom Chlorinated Pesticide Mix, catalog # 54609, lot number A011108;
Restek Corporation Custom Organophosphorus Pesticides Mix, catalog # 54610, lot number A011117;
Restek Corporation Custom Nitrogen List catalog # 54611, lot number A011122;
Restek Corporation Carbamates I Mixture catalog # 54612, lot number A011493 and Restek Corporation Carbamates II Mixture catalog # 54613, lot number A011612.

n) **Protein (PGEN).** The method used was based on modifications of AOAC methods 955.04 and 979.09 (2000) and literature methods (Bradstreet, 1965; Kalthoff and Sandell, 1948). Protein and other nitrogenous compounds in the sample were reduced to ammonia by digesting the sample with sulfuric acid containing a mercury catalyst mixture. The acid digest was made alkaline, and the ammonia was distilled and titrated with a standard acid. The percent nitrogen was determined and converted to percent protein by multiplication with 6.25. The limit of detection of this method for this study was 0.1% fw. There was no analytical reference substance for this analysis.

o) **Selenium (SEAS).** The method used was based on a modified version of AOAC methods 969.06 and 986.15 (2000) and modified literature methods (Watkinson, J.H., 1966; Haddad, P.R. and Smythe, L.E., 1974; and Bayfield, R.F. and Romalis, L.F., 1985). The sample was digested in a nitric-perchloric-hydrochloric acid mixture, in which any selenium present formed selenous acid. The selenous acid is reacted with 2,3-4,5-benzopiazselenol. This compound was extracted into an organic solvent. The amount of selenium is then determined by comparing the absorbance of the unknown sample, measured by fluorescence spectroscopy, with the absorbance of standard solutions. The limit of detection for this assay was 0.05 ppm. Reference Standard: Fisher Scientific, 1000 ppm selenium, Lot Number 994379-18.

p) **Sulfur (SULA).** The method used was based on a modification of a literature method (Soil Society of America Proceedings, 1965). The sample was weighed into a volumetric flask and refluxed with nitric acid. Perchloric acid was added and refluxed again. Hydrochloric acid was added and the sample was heated to break down nitroso compounds. Sulfur seed and sulfur buffer solution were added. The analysis was completed by measuring the extent of turbidity in the sample after the addition of barium chloride. The percent transmittance of the samples is compared to that of standards for determining sulfur concentrations. The limit of detection for this study was 0.015%.

5.2 *Mycotoxin Analysis at Romer Labs.* Grain samples (including the two replicates for both MON853 and MON847) were analyzed at Romer Labs, Union, MO for potential mycotoxin contamination according to the methods employed for the 'Mycotoxin Screen': *Aflatoxin By HPLC*, Version: 96.3 (AFLAHPLC); *Ochratoxin by HPLC*, Version: 97.4 (OCHRAHPLC); *Analysis of Mixed Feed for Type A and B Trichohecenes By TLC*, Version: 95.4 (FD Method); *HPLC Analyses for Zearalenone and Zearalenol*, Version: 95.5 (Zolzonlower); *Fumonisin By HPLC*, Version: 98.3 (FUMHPLC) and *Ochratoxin and Citrinin By TLC*, Version: 95.5 (OCHRA). These non-GLP assays were a part of the pre-study requirement for subsequent animal feeding studies.

Test descriptions with limits of detection are as follows: Aflatoxin B1, B2, G1, and G2, 1.0 ppb; Ochratoxin A, 5 ppb; Citrinin, 0.2 ppm; T-2 and HT-2 Toxin, 0.1 ppm; Diacetoxyscirpenol, 0.3 ppm; Neosolaniol, 0.5 ppm; Fusarenon X, 0.5 ppm; Deoxynivalenol, 0.1 ppm; 15 Acetyl-DON and 3-Acetyl-DON, 0.1 ppm, Nivalenol, 0.5 ppm, Zearalenone, 100 ppb; and Fumonisin B1, B2, and B3, 0.1 ppm.

6.0 Control of Bias and Quality Control Measures

Samples were treated in a similar manner for all test, control and reference substances. All samples generated were properly labeled with name, date, and any other relevant information. Chain of custody documentation accompanied all shipments.

7.0 Results and Discussion

The identity of the test substances were confirmed by molecular PCR analysis and by field and chain-of-custody records. The parental (negative) control substance MON847 and the RX770 reference control substance were identified by ELISA, chain-of-custody records, and other documentation. For test substance NK603, parental control substance B73Ht x LH82, reference controls HC33 x LH283, LH235 x LH185, LH242 x LH262, and LH200 x LH172, RR Traitcheck strip method was used to confirm identity and chain-of-custody records in addition to molecular analysis of the test substance NK603. All samples tested as expected using the methods indicated above for test, control, and reference characterization, thereby confirming identity before use in subsequent analyses.

Initially, the corn grain was measured for potential pesticide and mycotoxin contamination. All values for the pesticide screen were below the limits of detection (see attached Covance subreport). All values for the mycotoxin screen were acceptable for all test, control, and reference substances (see attached Romer Labs data summary). The limits of detection (ppm) for the pesticide screen were: Organophosphates (0.050), Organonitrogens (0.500), Organochlorinated (0.200), and N-Methylcarbamates (0.100). Mycotoxin test descriptions with limits of dectection are as follows: Aflatoxin B1, B2, G1, and G2, 1.0 ppb; Ochratoxin A, 5 ppb; Citrinin, 0.2 ppm; T-2 and HT-2 Toxin, 0.1 ppm; Diacetoxyscirpenol, 0.3 ppm; Neosolaniol, 0.5 ppm; Fusarenon X, 0.5 ppm; Deoxynivalenol, 0.1 ppm; 15 Acetyl-DON and 3-Acetyl-DON, 0.1 ppm, Nivalenol, 0.5 ppm, Zearalenone, 100 ppb; and Fumonisin B1, B2, and B3, 0.1 ppm.

Compositional analyses were conducted on test, control, and reference grain to aid in formulating diets for subsequent feeding studies. The data for proximates (protein, moisture, fat, ash, and carbohydrates), crude fiber, neutral detergent fiber, and acid detergent fiber, sulfur, chloride, fatty acids, amino acids, selenium, cadmium, and minerals (calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, and zinc) is summarized in Tables 1-5. All values are on a fresh weight basis. All values were generally within normal ranges for corn (Ridley, et al, 2000) and similar to values of the commercial reference ranges obtained in this study. All excess grain was disposed of at Covance Laboratories upon completion of the study.

8.0 Conclusion

The test, control, and reference corn grain was analyzed for potential pesticide and mycotoxin contamination. All values for the pesticide screen were below the limit of detection. All values for the mycotoxin screen were acceptable for all samples. Compositional data on test and control were generally within normal ranges for corn (Ridley, et al, 2000) and similar to values of the commercial reference ranges obtained within the study.

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Appendix 1.
Standard Compounds for M304 Pesticides Screen Provided by Covance Labs

Organochlorinateds	Organophosphates	Organonitrogens	n-Methyl Carbamates
Cypermethrin	Demeton-S	Ethalfluralin	3-Hydroxycarbofuran
Aldrin	Vapona	Fenpropathrin	Aldicarb
Endosulfan I	Dichlofenthion	Benfluralin	Aldicarb Sulfone
Endosulfan II	Methyl Chlorpyrifos	Ametryne	Aldicarb Sulfoxide
Oxadiazon	Prothiophos	Methoprotryne	Bendiocarb
DCNA	Dimethoate	Ethoxyquin	Butocarboxim
p,p'-DDE	Ethion	Aminocarb	Butoxycarboxim
Delta-BHC	Propetamphos	Myclobutanil	Carbaryl
DCPA	Fonofos	Metribuzin	Carbofuran
Captan	Acephate	Ethiolate	Dioxacarb
Chlorothalonil	Thimet	Nitralin	Ethiofencarb
Beta-BHC	Mevinphos	Pendimethalin	Fenobucarb
Endosulfan Sulfate	Parathion	Oxythioquinox	Isoprocarb
Folpet	Fenitrothion	Primacarb	Methiocarb
Technazene	Coumaphos	Diphenylamine	Methomyl
Endrin	Ronnel	Fluazifop-butyl	Metolcarb
Heptachlor Epoxide	Ethyl Parathion	Dinitramine	Oxamyl
Propyzamide	Phosalone	Procyazine	Promecarb
Alpha-BHC	Methamidiphos	Metalaxyl	Propoxur
p,p-DDT	Phosmet	Napropamide	Thiofanox
Mirex	Methidathion	Prometryne	
Permethrin	Azinphos-methyl	Propham	
Dicofol	Disulfoton	Simazine	
HCB	Malathion	Simetryn	
PCNB	EPN	Terbumeton	
Heptachlor	Ethyl Chlorpyrifos	Terbuthylazine	
Gamma-BHC (Lindane)	Methyl Pirimiphos	Terbutryn	
p,p-DDD	Trithion	Tetramethrin	
Captifol	Omethoate	Thiabendazole	
Methoxychlor	Chlorfenvinphos	THPI	
Dieldrin	Diazinon	Trifluralin	
Tetradifon			
Vinclozolin			

TABLE 1
Content of Proximates in Test, Control, and Reference Corn Grain (% FW)*

Line	Moisture	Protein	Fat	Ash	Carbohydrates
(Test) MON853 Rep 1	10.1	8.18	3.81	1.16	76.8
(Parental) MON847 Rep 1	11.4	8.93	3.34	1.34	75.0
(Test) MON853 Pool	10.1	8.50	2.97	1.39	77.0
(Parental) MON847 Pool	11.5	9.11	3.50	1.05	74.8
(Test) NK603	10.1	8.53	3.43	1.38	76.6
(Parental) B73Ht x LH82	11.4	8.84	3.41	1.03	75.3

Reference Controls	Moisture	Protein	Fat	Ash	Carbohydrates
RX770	10.3	8.45	2.80	1.25	77.2
HC33 x LH283	9.86	8.51	3.42	1.18	77.0
LH235 x LH185	9.26	7.50	2.52	1.10	79.6
LH242 x LH262	10.4	8.28	3.39	1.17	76.8
LH200 x LH172	9.95	8.17	3.75	1.31	76.8

*% = [g/g fresh weight] × 100

TABLE 2

Content of Fiber, Sulfur, Chloride, Cadmium, and Selenium in Test, Control, and Reference Corn Grain

Events	Crude Fiber (% FW)*	NDFE (% FW)	ADF (% FW)	Sulfur (% FW)	Chloride (% FW)	Selenium (ppm)**	Cadmium (ppm)
(Test) MON 853 Rep 1	1.69	9.65	3.98	0.079	0.050	0.25	<0.04
(Parental) MON847 Rep 1	1.65	10.9	4.09	0.089	0.046	0.47	<0.04
(Test) MON853 Pool	1.78	15.0	4.58	0.086	0.052	0.22	<0.04
(Parental) MON847 Pool	2.07	14.6	4.53	0.088	0.054	0.24	<0.04
(Test) NK603	1.79	8.97	3.07	0.071	0.055	<.05	<0.04
(Parental) B73Ht x LH82	1.73	10.7	3.00	0.073	0.058	<.05	<0.04

Reference Controls	Crude Fiber (% FW)	NDFE (% FW)	ADF (% FW)	Sulfur (% FW)	Chloride (% FW)	Selenium (ppm)	Cadmium (ppm)
RX770	1.63	8.82	3.11	0.097	0.047	0.32	<0.04
HC33 x LH283	1.95	10.1	2.87	0.075	0.051	<.05	<0.04
LH235 x LH185	2.08	13.0	2.99	0.058	0.075	<.05	<0.04
LH242 x LH262	1.92	8.75	3.36	0.070	0.080	<.05	<0.04
LH200 x LH172	1.49	5.84	2.28	0.053	0.065	<.05	<0.04

*% = [g/g fresh weight] × 100, **ppm = µg/g fresh weight

TABLE 3

Content of Fatty Acids in Test, Control, and Reference Corn Grain (% FW)*

Events	8:0 caprylic	10:0 capric	12:0 lauric	14:0 myristic	14:1 myristoleic	15:0 pentadecanoic	15:1 pentadecenoic	16:0 palmitic
(Test) MON853 Rep 1	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.372
(Parental) MON 847 Rep 1	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.327
(Test) MON853 Pool	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.291
(Parental) MON847 Pool	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.351
(Test) NK603	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.293
(Parental) B73Ht x LH82	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.301

Reference Controls	8:0 caprylic	10:0 capric	12:0 lauric	14:0 myristic	14:1 myristoleic	15:0 pentadecanoic	15:1 pentadecenoic	16:0 palmitic
RX770	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.299
HC33 x LH283	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.346
LH235 x LH185	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.288
LH242 x LH262	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.386
LH200 x LH172	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.393

(continued)

*% = [g/g fresh weight] × 100

TABLE 3

Content of Fatty Acids in Test, Control, and Reference Corn Grain (% FW)*

Events	16:1 palmitoleic	17:0 heptadecanoic	17:1 heptadecenoic	18:0 stearic	18:1 oleic	18:2 linoleic	18:3 gamma linoleic
(Test) MON853 Rep 1	0.00405	<0.004	<0.004	0.0635	0.783	2.25	<0.004
(Parental) MON 847 Rep 1	<0.004	<0.004	<0.004	0.0545	0.718	1.59	<0.004
(Test) MON853 Pool	<0.004	<0.004	<0.004	0.0504	0.601	1.70	<0.004
(Parental) MON847 Pool	0.00449	<0.004	<0.004	0.0556	0.792	2.04	<0.004
(Test) NK603	0.00421	<0.004	<0.004	0.0615	0.756	2.04	<0.004
(Parental) B73Ht x LH82	0.00433	<0.004	<0.004	0.0599	0.774	2.08	<0.004

Reference Controls	16:1 palmitoleic	17:0 heptadecanoic	17:1 heptadecenoic	18:0 stearic	18:1 oleic	18:2 linoleic	18:3 gamma linoleic
RX770	<0.004	<0.004	<0.004	0.0401	0.662	1.32	<0.004
HC33 x LH283	0.00491	<0.004	<0.004	0.0553	1.03	1.72	<0.004
LH235 x LH185	<0.004	<0.004	<0.004	0.0458	0.508	1.46	<0.004
LH242 x LH262	<0.004	<0.004	<0.004	0.0579	0.891	1.81	<0.004
LH200 x LH172	0.00471	<0.004	<0.004	0.0642	0.846	2.21	<0.004

(continued)

*% = [g/g fresh weight] × 100

TABLE 3
Content of Fatty Acids in Test, Control, and Reference Corn Grain (% FW)*

Events	18:3 linoleic	20:0 arachidic	20:1 eicosenoic	20:2 eicosadienoic	20:3 eicosatrienoic	20:4 arachidonic	22:0 behenic
(Test) MON853 Rep 1	0.0309	0.0131	0.0103	<0.004	<0.004	<0.004	0.00572
(Parental) MON 847 Rep 1	0.0201	0.0114	0.00995	<0.004	<0.004	<0.004	0.00861
(Test) MON853 Pool	0.0226	0.00999	0.00801	<0.004	<0.004	<0.004	0.00567
(Parental) MON847 Pool	0.0300	0.0112	0.00906	<0.004	<0.004	<0.004	0.00524
(Test) NK603	0.0362	0.0121	0.00949	<0.004	<0.004	<0.004	0.00490
(Parental) B73Ht x LH82	0.0366	0.0124	0.00979	<0.004	<0.004	<0.004	0.00467

Reference Controls	18:3 linoleic	20:0 arachidic	20:1 eicosenoic	20:2 eicosadienoic	20:3 eicosatrienoic	20:4 arachidonic	22:0 behenic
RX770	0.0234	0.0105	0.00916	<0.004	<0.004	<0.004	0.00624
HC33 x LH283	0.0328	0.0125	0.00999	<0.004	<0.004	<0.004	0.00473
LH235 x LH185	0.0274	0.00961	0.00598	<0.004	<0.004	<0.004	<0.004
LH242 x LH262	0.0280	0.0139	0.00939	<0.004	<0.004	<0.004	0.00472
LH200 x LH172	0.0408	0.0142	0.0105	<0.004	<0.004	<0.004	0.00590

*% = [g/g fresh weight] × 100

TABLE 4
Content of Amino Acids in Test, Control, and Reference Corn Grain (mg/g FW)

Events	Aspartic Acid	Threonine	Serine	Glutamic Acid	Proline	Glycine	Alanine	Cystine	Valine
(Test) MON853 Rep 1	5.38	2.94	3.87	15.6	8.22	3.13	6.30	1.87	4.23
(Parental) MON 847 Rep 1	6.02	3.24	4.40	17.6	9.27	3.37	7.05	1.94	4.65
(Test) MON853 Pool	6.09	3.28	4.4	17.6	8.93	3.46	6.99	1.95	4.57
(Parental) MON847 Pool	6.67	3.36	4.53	19.1	9.52	3.59	7.43	2.01	4.83
(Test) NK603	5.86	2.96	4.07	16.2	8.28	3.46	6.63	1.97	4.34
(Parental) B73Ht x LH82	5.97	3.05	4.25	17.0	8.65	3.39	6.99	1.97	4.44

Reference Controls	Aspartic Acid	Threonine	Serine	Glutamic Acid	Proline	Glycine	Alanine	Cystine	Valine
RX770	5.41	3.05	4.15	16.3	8.56	3.24	6.51	1.98	4.32
HC33 x LH283	5.70	2.93	4.05	16.7	8.25	3.26	6.95	1.84	4.31
LH235 x LH185	5.20	2.66	3.49	13.8	7.18	2.97	5.61	1.72	3.91
LH242 x LH262	5.89	2.95	4.01	15.5	7.50	3.30	6.36	1.82	4.23
LH200 x LH172	5.62	2.95	3.93	15.4	7.96	3.29	6.37	1.89	4.17

(continued)

TABLE 4
Content of Amino Acids in Test, Control, and Reference Corn Grain (mg/g FW)

Events	Methionine	Isoleucine	Leucine	Tyrosine	Phenylalanine	Histidine	Lysine	Arginine	Tryptophan
(Test) MON853 Rep 1	1.64	3.08	10.8	2.03	4.07	2.64	2.67	3.64	0.530
(Parental) MON 847 Rep 1	1.65	3.46	12.4	3.27	4.69	2.87	2.67	4.40	0.623
(Test) MON853 Pool	1.70	3.32	12.0	3.14	4.57	2.82	2.86	4.26	0.589
(Parental) MON847 Pool	1.70	3.56	12.9	3.46	4.93	2.94	2.90	4.21	0.554
(Test) NK603	1.83	3.22	10.8	2.88	4.32	2.52	2.89	4.14	0.597
(Parental) B73Ht x LH82	1.73	3.28	11.2	3.04	4.47	2.52	2.75	4.01	0.529

Reference Controls	Methionine	Isoleucine	Leucine	Tyrosine	Phenylalanine	Histidine	Lysine	Arginine	Tryptophan
RX770	2.00	3.11	11.4	3.09	4.25	2.73	2.49	3.86	0.559
HC33 x LH283	1.60	3.19	11.0	2.90	4.23	2.53	2.76	3.85	0.554
LH235 x LH185	1.54	2.77	9.11	2.58	3.70	2.35	2.47	3.49	0.498
LH242 x LH262	1.60	3.23	10.7	3.07	4.35	2.47	2.87	4.12	0.552
LH200 x LH172	1.79	3.08	10.2	3.00	4.17	2.43	2.71	3.85	0.517

TABLE 5
Content of Minerals in Test, Control, and Reference Corn Grain (ppm)*

Events	Calcium	Copper	Iron	Magnesium	Manganese	Phosphorus	Potassium	Sodium	Zinc
(Test) MON853 Rep 1	41.9	1.62	24.3	1110	3.33	3040	3470	<100	18.0
(Parental) MON847 Rep 1	38.7	1.67	35.4	1130	4.62	3060	3330	<100	18.3
(Test) MON853 Pool	43.1	1.42	27.3	1040	3.54	2840	3340	<100	16.6
(Parental) MON847 Pool	40.3	1.75	51.8	1120	4.54	2970	3100	<100	19.3
(Test) NK603	28.5	1.71	19.7	1050	6.15	3010	3580	<100	19.3
(Parental) B73Ht x LH82	28.8	1.49	18.9	851	5.81	2280	2930	<100	17.0

Reference Controls	Calcium	Copper	Iron	Magnesium	Manganese	Phosphorus	Potassium	Sodium	Zinc
RX770	44.1	1.73	31.6	1110	5.80	3040	3300	<100	18.9
HC33 x LH283	34.4	2.05	16.2	826	6.44	2510	3060	<100	15.9
LH235 x LH185	33.2	2.13	16.1	715	6,35	1890	3220	<100	13.7
LH242 x LH262	29.6	1.54	16.3	745	6.74	2060	3010	<100	11.8
LH200 x LH172	34.9	1.61	20.1	852	6.32	2730	3610	<100	19.9

* ppm = µg/g fresh weight

Attachment 1.

Protocol and Amendments pp. 29-48

Study Number:	00-01-39-07
Covance Study Number:	6103-266
Study Title:	Pesticide Profile, Mycotoxin, and Compositional Analyses of Corn Event MON853 and Control Line MON847 Produced in the U.S. in 1999
Sponsor:	Monsanto Company Biotechnology Regulatory Sciences 700 Chesterfield Parkway North St. Louis, MO 63198
Study Director:	Mary L. Taylor Monsanto Company - BB5F 700 Chesterfield Parkway North St. Louis, MO 63198 Phone: (636) 737-6229 FAX: (636) 737-6189 e-mail: mary.l.taylor@monsanto.com
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[redacted]

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Approved By:

Mar 1, 2000
Date

Patrick T. Weston
Testing Facility Management Representative
Monsanto Company
Biotechnology Regulatory Sciences

March 1, 2000
Date

Mary L. Taylor
Study Director
Monsanto Company
Biotechnology Regulatory Sciences

March 1, 2000
Date

Ravi Sidhu
Sponsor Representative
Monsanto Company
Regulatory Affairs

March 2, 2000
Date

James D. Astwood
Director, Product Safety Center
Monsanto Company
Biotechnology Regulatory Sciences

[redacted]

[redacted]

1.0 Regulatory Compliance

1.1 *GLP Compliance.* This is a product characterization study as defined by section §160.135(b) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); Good Laboratory Practice Standards (40 CFR Part 160) intended to characterize the physical and/or chemical properties of a potential commercial product. This study will be conducted in compliance with all requirements of section §160.135 (b) with the following exception: Romer Labs is not a GLP facility and mycotoxin analyses performed there will not be conducted according to GLPs. However, the Monsanto Quality Assurance Unit (QAU) periodically visits Romer Labs to conduct facility and data audits.

2.0 Purpose

The purpose of this study is to conduct pesticide profile, mycotoxin, and compositional analyses of grain from of corn event MON853 and control line MON847. The test event MON853 expresses the insect control protein, Cry3Bb1. The study includes analyses of non-transgenic parental control corn line MON847 that has background genetics representative of their corresponding test event but does not express the Cry3Bb1 insect control protein, and one additional non-transgenic commercial line grown at the same location as the test event and parental control in the US in 1999.

Compositional data on test, control, and reference substances will be used to formulate animal diets in subsequent animal feeding studies.

3.0 Timelines

3.1 Proposed Experimental Start Date: March, 2000
3.2 Proposed Experimental Termination Date: August, 2000

4.0 Test, Parental Control and Reference Control Substances

4.1 *Test Substance.* The test substance is the corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the test substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). If results demonstrate no unacceptable contamination, the grain from rep 1 and rep 2 plots will be pooled. A pooled sample will be provided to Covance for compositional analyses.

4.2 *Parental Control Substance.* The parental (negative) control substance MON847 is the non-transgenic parental control corn line produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the control substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). If results demonstrate unacceptable contamination, the grain from rep 1 and rep 2 plots will be pooled. A pooled sample will be provided to Covance for compositional analyses.

4.3 *Reference Control Substance.* One reference control substance is included in the study: the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. All analyses in section 5.1 will be conducted on this sample should initial mycotoxin and pesticide screen results demonstrate acceptable levels.

4.4 *Characterization of Test, Control and Reference Substances.* The test substance identity was confirmed by molecular analysis and by field and chain-of-custody records. The parental (negative) control line and the reference control substance were identified by ELISA, chain-of-custody records, and other documentation.

5.0 Experimental Design

Corn grain samples from the test, parental control, and reference lines will be analyzed for pesticide profile, mycotoxins and composition described in section 5.1. A sub-sample representative of the bulk whole grain samples was shipped at ambient temperature to Monsanto for identity confirmation. The bulk grain from each line was shipped at ambient temperature to the Colorado Quality Research for use in subsequent animal feeding studies. Grain samples for pesticide, mycotoxin, and compositional analyses were ground (Monsanto, V141) prior to shipment on dry ice to the appropriate testing facility (200 g to Covance and 100 g to Romer Labs) for analysis. Grain samples will be appropriately labeled and identified in worksheets and/or sample transfer forms. Not all analyses will necessarily be performed on all grain samples from all lines. The reference control line will be eliminated if it has unacceptable levels of contamination

with mycotoxins or pesticides. Grain samples will be returned or discarded at the end of the study at the direction of the study director.

5.1 *Sample Analyses.* The test, parental control, and reference control corn grain samples will be analyzed according to the following methodology. Any additional compositional analyses or re-analyses will be documented and justified in the raw data file.

5.1.1 *Pesticide Profile and Compositional Analyses at Covance.* All corn grain samples will be analyzed for the presence of pesticides using the FDA PAM 304 pesticide screen (M304).

The following compositional analyses will be performed on all composite grain samples: proximates [moisture (M100), protein (PGEN), fat (FSOX), ash (ASHM)], crude fiber (CFIB), amino acid composition (TAAP), fatty acid composition (FAAH), acid detergent fiber (ADF), neutral detergent fiber (NDFE), sulfur (SULA), selenium (SEAS), cadmium (CDA), calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, zinc (ICPS), and chloride (CLA). Carbohydrate (CHO) values will be estimated by calculation.

5.1.2 *Mycotoxin Analysis at Romer Labs.* Grain samples from all lines will be analyzed at Romer Labs, Union, MO for potential mycotoxin contamination according to the methods employed for the 'Mycotoxin Screen' test presented in Appendix 1. This non-GLP assay is referenced in this protocol, as it is an integral part of the pre-study requirement for subsequent animal feeding studies.

6.0 Records to be Maintained

Records will be maintained of all sample transfers, analyses, the protocol and all deviations and amendments thereto and copies of all letters memoranda and other correspondence related to this study. Upon completion of the study, all Monsanto study records and final report will be archived by the Sponsor. Original data will be archived at the following facilities: Monsanto facility (molecular analyses), Covance facility (pesticide profile and compositional analysis), and Romer Labs facility (mycotoxin analyses).

6.1 *Covance Subreport.* Original data or copies will be available at Covance to facilitate auditing the study during its progress and before acceptance of Covance's final subreport. The subreport will audited and accepted by the Covance quality assurance unit which will include: (1) a spreadsheet that summarizes the analytical report for each sample; (2) information on reference standards used (where applicable); and (3) analytical method summaries.

One copy of the draft report and two copies of the final subreport will be submitted to the Study Director.

When the final subreport is completed, original study documentation, such as: paper data, computer printouts, chromatograms, worksheets, data sheets, notes by investigators, forms specified by SOP and magnetically encoded records, will be retained in the archives of Covance in accordance with 40 CFR Part 160. Ten years after signing of the final report, all original or copies of data will be sent to the Sponsor. Supporting facility records will be retained at Covance but will not be archived with the study data, including refrigerator and freezer temperature records, instrument calibration and maintenance records.

6.2 *Romer Labs Data Summary.* Original data or copies will be available at Romer Labs to facilitate auditing the study during its progress, if warranted, before acceptance of Romer Lab's final data summary. Original data will be archived at Romer Labs for 10 years, and facility records will be stored indefinitely. A certified copy of the data summary generated at Romer Labs will be archived at Monsanto.

7.0 Changes to the Protocol

Planned changes to the protocol will be documented in the form of written protocol amendments and signed by the Study Director. Amendments become part of the protocol and will be archived with the protocol. All other changes will be in the form of written protocol deviations and will be filed with the raw data. All changes to the protocol will be addressed in the final report.

[redacted]

Appendix 1

Mycotoxin Screen

Aflatoxin B1, B2, G1, G2
Ochratoxin A
Citrinin
T-2 toxin
HT-2 toxin
Diacetoxyscirpenol
Neosolaniol
Fusarenon-x
Deoxynivalenol (DON)
15 Acetyl DON
3 Acetyl DON
Nivalenol
Zearalenone
Fumonisin B1, B2, B3

[redacted]

Monsanto Company Biotechnology Regulatory Sciences	SOP/Protocol Amendment Form SOP Ref.: GEN-POL-005

Study #/SOP#: 00-01-39-07 **Amendment #: 1**

Date Change Implemented: March 28, 2000

Page No/s. &/or Section/s: p 5, Section 4.0

Production Plan originally stated:

4.0 Test, Parental Control and Reference Control Substances

4.1 *Test Substance.* The test substance is the corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the test substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). If results demonstrate no unacceptable contamination, the grain from rep 1 and rep 2 plots will be pooled. A pooled sample will be provided to Covance for compositional analyses.

4.2 *Parental Control Substance.* The parental (negative) control substance MON847 is the non-transgenic parental control corn line produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the control substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). If results demonstrate unacceptable contamination, the grain from rep 1 and rep 2 plots will be pooled. A pooled sample will be provided to Covance for compositional analyses.

4.3 *Reference Control Substance.* One reference control substance is included in the study: the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. All analyses in section 5.1 will be conducted on this sample should initial mycotoxin and pesticide screen results demonstrate acceptable levels.

Amended as Follows:

4.0 Test, Parental Control and Reference Control Substances

4.1 *Test Substance.* The test substance is the corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the test substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). In addition, rep 1 only will be analyzed for compositional analyses. If results demonstrate no unacceptable pesticide or mycotoxin contamination, all but 250 lbs of the grain from rep 1 and rep 2 plots will be pooled. A pooled subsample will be provided to Covance for compositional analyses.

4.2 *Parental Control Substance.* The parental (negative) control substance MON847 is the non-transgenic parental control corn line produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the control substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). In addition, rep 1 only will be analyzed for compositional analyses. If results demonstrate no unacceptable pesticide or mycotoxin

contamination, all but 250 lbs of the grain from rep 1 and rep 2 plots will be pooled. A pooled subsample will be provided to Covance for compositional analyses.

4.3 *Reference Control Substance.* One reference control substance is included in the study: the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. All compositional analyses in section 5.1 will be conducted on this sample should initial mycotoxin and pesticide screen results demonstrate acceptable levels.

Reason for Amendment and what impact will result from this change: Rep 1 of the test and control substances was chosen to be used for the subsequent rat feeding study and the pool of rep 1 and rep 2 will be used for the subsequent broiler study.

Signatures of Approval

Study Director:

Mary Taylor — **Date:** 3-30-00

Mary Taylor, Monsanto

Sponsor:

Date: April 4 2000

Patrick Weston, Monsanto

Protocol Amendment Form **Amendment #: 2**

Monsanto Study #: **00-01-39-07**

Date changes implemented: May 17, 2000

Page number(s) and section(s): p. 1, Study Title, and p. 5, Section 4.0 Test, Control, and Reference Substances

Protocol originally stated:

Study Title: Pesticide Profile, Mycotoxin, and Compositional Analyses of Corn Event MON 853 and Control Line MON847 Produced in the U.S. in 1999

4.0 Test, Parental Control and Reference Control Substances

4.1 *Test Substance.* The test substance is the corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the test substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). If results demonstrate no unacceptable contamination, the grain from rep 1 and rep 2 plots will be pooled. A pooled sample will be provided to Covance for compositional analyses.

4.2 *Parental Control Substance.* The parental (negative) control substance MON847 is the non-transgenic parental control corn line produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the control substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). If results demonstrate unacceptable contamination, the grain from rep 1 and rep 2 plots will be pooled. A pooled sample will be provided to Covance for compositional analyses.

4.3 *Reference Control Substance.* One reference control substance is included in the study: the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. All analyses in section 5.1 will be conducted on this sample should initial mycotoxin and pesticide screen results demonstrate acceptable levels.

[redacted]

Protocol Amendment Form **Amendment #: 2**

Amendment 1 stated:

4.0 Test, Parental Control and Reference Control Substances

4.1 *Test Substance.* The test substance is the corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the test substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). In addition, rep 1 only will be analyzed for compositional analyses. If results demonstrate no unacceptable pesticide or mycotoxin contamination, all but 250 lbs of the grain from rep 1 and rep 2 plots will be pooled. A pooled subsample will be provided to Covance for compositional analyses.

4.2 *Parental Control Substance.* The parental (negative) control substance MON847 is the non-transgenic parental control corn line produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the control substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). In addition, rep 1 only will be analyzed for compositional analyses. If results demonstrate no unacceptable pesticide or mycotoxin contamination, all but 250 lbs of the grain from rep 1 and rep 2 plots will be pooled. A pooled subsample will be provided to Covance for compositional analyses.

4.3 *Reference Control Substance.* One reference control substance is included in the study: the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. All compositional analyses in section 5.1 will be conducted on this sample should initial mycotoxin and pesticide screen results demonstrate acceptable levels.

[redacted]

Protocol Amendment Form **Amendment #: 2**

Protocol Amended as Follows:

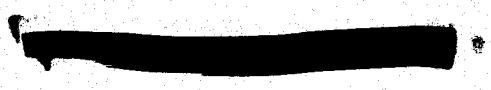
Study Title: Pesticide Profile, Mycotoxin, and Compositional Analyses of Corn Events MON 853 and NK603, Parental Control Lines, and Reference Lines Produced in the U.S.

4.0 Test, Parental Control and Reference Control Substances

4.1 *Test Substances.* The first test substance is the corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the test substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). In addition, rep 1 only will be analyzed for compositional analyses. If results demonstrate no unacceptable pesticide or mycotoxin contamination, all but 250 lbs of the grain from rep 1 and rep 2 plots will be pooled. A pooled subsample will be provided to Covance for compositional analyses. The second test substance is the corn event NK603 produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03. Mycotoxin analyses (at Romer Labs), and pesticide and compositional analyses (at Covance) will be conducted on NK603 test substance.

4.2 *Parental Control Substances.* The first parental (negative) control substance, MON847, is the non-transgenic parental control corn line for MON 853. It was also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the control substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). In addition, rep 1 only will be analyzed for compositional analyses. If results demonstrate no unacceptable pesticide or mycotoxin contamination, all but 250 lbs of the grain from rep 1 and rep 2 plots will be pooled. A pooled subsample will be provided to Covance for compositional analyses. The second parental (negative) control substance, BT73Ht x LH82, is the non-transgenic parental control corn line for NK603. It was also produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03. Mycotoxin analyses (at Romer Labs) and pesticide and compositional analyses (at Covance) will be conducted on the BT73Ht x LH82 parental control substance.

4.3 *Reference Control Substances.* Reference control substances in this study include: the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season; in addition, four non-transgenic commercial corn variety reference substances were grown under Production Plan #00-01-46-03 in Kaunakakai, Hawaii:



Protocol Amendment Form **Amendment #: 2**

HC33 x LH283, LH235 x LH185, LH242 x LH262, and LH200 x LH172. All analyses in section 5.1 will be conducted on all commercial reference substances.

Reason for the amendment and what impact will result from this change: Addition of test, control, and reference substances to the study. No impact on study.

Approved By:

Patrick T. Weston
Testing Facility Management Representative
May 22, 2000
Date

Mary Taylor
Study Director
May 22, 2000
Date

Ravinder S Sidhu
Ravi Sidhu
Sponsor Representative
May 22, 2000
Date

Reviewed By:

C Marie Braton
Marie Braton
Quality Assurance Specialist
May 18, 2000
Date

Jim Astwood
Technical Center Leader
Monsanto Company
Biotechnology Regulatory Sciences
May 23, 2000
Date

[redacted]

Protocol Amendment Form **Amendment #: 3**

Monsanto Study #: **00-01-39-07**

Date changes implemented: July 18, 2000

Page number(s) and section(s): p. 6, Section 5.1.1

Protocol originally stated:

5.1.1 *Pesticide Profile and Compositional Analyses at Covance.* All corn grain samples will be analyzed for the presence of pesticides using the FDA PAM 304 pesticide screen (M304).

The following compositional analyses will be performed on all composite grain samples: proximates [moisture (M100), protein (PGEN), fat (FSOX), ash (ASHM)], crude fiber (CFIB), amino acid composition (TAAP), fatty acid composition (FAAH), acid detergent fiber (ADF), neutral detergent fiber (NDFE), sulfur (SULA), selenium (SEAS), cadmium (CDA), calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, zinc (ICPS), and chloride (CLA). Carbohydrate (CHO) values will be estimated by calculation.

Protocol Amended as Follows:

5.1.1 *Pesticide Profile and Compositional Analyses at Covance.* All corn grain samples will be analyzed for the presence of pesticides using the FDA PAM 304 pesticide screen (M304).

The following compositional analyses will be performed on all composite grain samples: proximates [moisture (M100), protein (PGEN), fat (FSOX), ash (ASHM)], crude fiber (CFIB), amino acid composition (TAAP), fatty acid composition (FAPM), acid detergent fiber (ADF), neutral detergent fiber (NDFE), sulfur (SULA), selenium (SEAS), cadmium (CDA), calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, zinc (ICPS), and chloride (CLA). Carbohydrate (CHO) values will be estimated by calculation.

Reason for the amendment and what impact will result from this change: Correction in code for fatty acid compositional analyses. No impact on study.

[redacted]

Protocol Amendment Form **Amendment #: 3**

Approved By:

Patrick T. Weston — July 19, 2000
Testing Facility Management Representative Date

Mary L. Taylor — July 19, 2000
Mary L.Taylor
Study Director Date

Ravinder S Sidhu — July 19, 2000
Ravinder S. Sidhu
Sponsor Representative Date

Reviewed By:

C. Mari Braton — July 19, 2000
Quality Assurance Specialist Date

James A. Astwood — July 19, 2000
James A. Astwood
Technical Center Leader Date
Monsanto Company
Biotechnology Regulatory Sciences

[redacted]

Protocol Amendment Form **Amendment #: 4**

Monsanto Study #: **00-01-39-07**

Date changes implemented: 5/18/2000

Page number(s) and section(s): p. 4, Section 2.0 and Amendment 2

Protocol originally stated:

2.0 Purpose

The purpose of this study is to conduct pesticide profile, mycotoxin, and compositional analyses of grain from of corn event MON853 and control line MON847. The test event MON853 expresses the insect control protein, Cry3Bb1. The study includes analyses of non-transgenic parental control corn line MON847 that has background genetics representative of their corresponding test event but does not express the Cry3Bb1 insect control protein, and one additional non-transgenic commercial line grown at the same location as the test event and parental control in the US in 1999.

Amendment 2 stated:

Parental Control Substances. The first parental (negative) control substance, MON847, is the non-transgenic parental control corn line for MON 853. It was also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the control substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). In addition, rep 1 only will be analyzed for compositional analyses. If results demonstrate no unacceptable pesticide or mycotoxin contamination, all but 250 lbs of the grain from rep 1 and rep 2 plots will be pooled. A pooled subsample will be provided to Covance for compositional analyses. The second parental (negative) control substance, BT73Ht x LH82, is the non-transgenic parental control corn line for NK603. It was also produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03. Mycotoxin analyses (at Romer Labs) and pesticide and compositional analyses (at Covance) will be conducted on the BT73Ht x LH82 parental control substance.

[redacted]

Protocol Amendment Form **Amendment #: 4**

Protocol amended as follows:

2.0 Purpose

The purpose of this study is to conduct pesticide profile, mycotoxin, and compositional analyses of grain from corn events MON 853 and Roundup Ready® NK603. The corn event MON 853 expresses the insect control protein, Cry3Bb1.11231. The corn event NK603 expresses CP4 EPSP synthase (CP4 EPSPS) which confers tolerance to the Roundup® herbicide. The study includes analyses of non-transgenic parental control corn events (MON 847 and B73Ht x LH82 for MON 853 and NK603, respectively) that have background genetics representative of their corresponding test events but do not express the Cry3Bb1.11231 insect control protein or CP4 EPSPS protein. In addition, the study included five non-transgenic commercial reference lines grown at the same locations as the test and control events.

Amendment 2 amended as follows:

Parental Control Substances. The first parental (negative) control substance, MON847, is the non-transgenic parental control corn line for MON 853. It was also produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season. Two reps of the control substance harvested from two different plots grown at the same IL location will be analyzed at Romer Labs for mycotoxin screen and at Covance for pesticide screen (see section 5.1). In addition, only rep 1 will be analyzed for compositional analyses. If results demonstrate no unacceptable pesticide or mycotoxin contamination, all but 250 lbs of the grain from rep 1 and rep 2 plots will be pooled. A pooled subsample will be provided to Covance for compositional analyses. The second parental (negative) control substance, B73Ht x LH82, is the non-transgenic parental control corn line for NK603. It was also produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03. Mycotoxin analyses (at Romer Labs) and pesticide and compositional analyses (at Covance) will be conducted on the B73Ht x LH82 parental control substance.

Reason for the amendment and what impact will result from this change: Purpose updated to reflect the addition of NK603, its parental line, and additional reference lines to the study and to reflect the correction of the protein name for MON 853. In addition, the parental control substance was corrected to B73Ht x LH82 instead of BT73Ht x LH82. No impact on study other than clarification of documentation.

[redacted]

Protocol Amendment Form **Amendment #: 4**

Approved By:

Patrick T. Weston
Testing Facility Management Representative

Dec 21, 2000
Date

Mary L.Taylor
Study Director

Dec 21, 2000
Date

Ravinder S. Sidhu
Sponsor Representative

Dec 21, 2000
Date

Reviewed By:

Quality Assurance Specialist

Dec. 21, 2000
Date

James A. Astwood
Technical Center Leader
Monsanto Company
Biotechnology Regulatory Sciences

Dec. 21, 2000
Date

[redacted]

Attachment 2.

Covance Subreport pp. 49-88

Final Analytical Subreport

Pesticide Profile and Compositional Analyses of Corn Events MON853 and NK603, Parental Control Lines, and Reference Lines Produced in the U.S.

PREPARED FOR:
Monsanto Company

COVANCE STUDY NUMBER:
6103-266

ISSUE DATE:
August 24, 2000

COVANCE
THE DEVELOPMENT SERVICES COMPANY

Sponsor

Monsanto Company
St. Louis, Missouri

FINAL ANALYTICAL SUBREPORT

Subreport Title

Pesticide Profile and Compositional Analyses of Corn Events MON853 and NK603, Parental Control Lines, and Reference Lines Produced in the U.S.

Author

Matthew L. Breeze

Subreport Completion Date

August 24, 2000

Performing Laboratory

Covance Laboratories Inc.
3301 Kinsman Blvd.
Madison, WI 53704

Laboratory Study Identification

Covance 6103-266

Monsanto Study Number

00-01-39-07

QUALITY ASSURANCE STATEMENT

This report has been reviewed by the Quality Assurance Unit of Covance Laboratories Inc., in accordance with the Environmental Protection Agency (EPA) Good Laboratory Practice Standards, 40 CFR 160. The following inspections were conducted and findings reported to the principal investigator (PI), study director (SD), and associated management.

Inspection Dates		Phase	Date Reported to PI and PI Management	Date Reported to SD and SD Management
From	To			
04/19/00	04/19/00	Analytical Laboratory Inspection	04/19/00	04/19/00
06/21/00	06/23/00	Data/Table Review	06/26/00	06/26/00
06/21/00	06/23/00	Data/Table Review	06/26/00	08/07/00
06/21/00	06/23/00	Data/Table Review	06/26/00	06/26/00
06/21/00	06/23/00	Data/Table Review	06/26/00	07/10/00
06/28/00	06/28/00	Data/Table Review	06/28/00	06/28/00
07/20/00	07/21/00	Report Review	07/24/00	08/24/00
08/24/00	08/24/00	Report Review	08/24/00	08/24/00

Tamara Shea
Representative, Quality Assurance Unit

8/24/00
Date

TABLE OF CONTENTS

STUDY IDENTIFICATION

Pesticide Profile and Compositional Analyses of Corn Events MON853 and NK603, Parental Control Lines, and Reference Lines Produced in the U.S.

Test Substances:	Corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the US during the 1999 field season and corn event NK603 produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03
Sponsor Study No.:	00-01-39-07
Sponsor Study Title:	Pesticide Profile, Mycotoxin, and Compositional Analyses of Corn Events MON853 and NK603, Parental Control Lines, and Reference Lines Produced in the U.S.
Sponsor:	Monsanto Company Biotechnology Regulatory Sciences 700 Chesterfield Parkway North St. Louis, MO 63198
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Study Director:	Mary L. Taylor Monsanto Company - BB5F 700 Chesterfield Parkway North St. Louis, MO 63198 Phone: (636) 737-6229 FAX: (636) 737-6189 e-mail: mary.l.taylor@monsanto.com

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Study Timetable

Study Initiation Date:	March 1, 2000
Analytical Start Date:	March 6, 2000
Analytical Completion Date:	June 19, 2000
Subreport Completion Date:	August 24, 2000

KEY PERSONNEL

Vitamin Chemistry

Matthew L. Breeze
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Research Assistant

Sharon A. Habeck
Supervisor

Proximate and Lipid Chemistry

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Manager

Microbiological Vitamin Chemistry

Theodore W. Pritchard
Supervisor

Inorganic Chemistry

Robert G. Allen
Manager

Food and Drug Analysis

James R. Wehrmann
Associate Director

Marc L. Pesselman
Report Coordinator

Quality Assurance Unit

Nancy M. Centanni
Manager

Sample Management

Angela J. Underberg
Supervisor

INTRODUCTION

The purpose of this portion of the study was to conduct pesticide profiles and compositional analyses of test, parental control, and commercial varieties of corn grain samples that were produced in both Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season and Kaunakakai, Hawaii under Production Plan #00-01-46-03.

Specifically, the study was designed to estimate the levels of pesticides, proximates (moisture, protein, fat, and ash), crude fiber, amino acid composition, fatty acid profile, acid detergent fiber, neutral detergent fiber, sulfur, selenium, cadmium, calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, zinc, and chloride. In addition, the carbohydrate values were estimated by calculation.

REGULATORY COMPLIANCE

This study was conducted in compliance with the Environmental Protection Agency (EPA) Good Laboratory Practice (GLP) Standards as set forth in Title 40 of the US Code of Federal Regulations Part 160 with the exceptions that the reference standards were not characterized according to GLP standards, reserve samples from each batch of the reference standards were not retained, and that the final analytical subreport format is not in full accordance with EPA Pesticide Regulation Notice 86-5. These exceptions had no effect on the integrity or quality of the study.

TEST, CONTROL, AND REFERENCE SUBSTANCES

Identification

Test Substances

The test substances were defined as corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season and corn event NK603 produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03.

Parental Control Substances

The first parental (negative) control substance, MON847 was the non-transgenic parental control corn line for MON853. It was also produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season. The second parental (negative) control substance, B73Ht x LH82, was the non-transgenic parental control corn line for NK603. It was also produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03.

Reference Substances

Reference control substances in this study included the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season and four non-transgenic commercial corn variety reference substances (HC33 x LH283, LH235 x LH185, LH242 x LH262, and LH200 x LH172) grown under Production Plan #00-01-46-03 in Kaunakakai, Hawaii.

Appropriate standards were used in each assay as reference standards for the analytical procedures or calibration of equipment. See Appendix A for reference standard identification (if applicable).

Characterization, Purity, and Stability

Information on characterization, purity, stability, synthesis methods, composition, or other characteristics that define the test, control, and reference substances was the responsibility of the sponsor.

Storage/Retention

Upon arrival in the analytical laboratory, all samples were stored in a secured freezer set to maintain -20° ±10°C. Excess samples will be retained until notified of final disposition by the study director. Remaining reference standards may be used for other testing.

Safety Precautions

Safety precautions were taken as required by Covance Policies and Procedures.

SAMPLE RECEIPT AND HANDLING

The samples were entered into the Covance Laboratory Information Management Systems (LIMS) with unique LIMS numbers in the order specified by the protocol. Each sample identification was matched with the LIMS information.

PROCEDURES

This study was conducted in accordance with Monsanto Study No.: 00-01-39-07 (Covance Protocol 6103-266). All analyses were performed according to methods and standard operating procedures (SOPs) approved by Covance. See Appendix A for a summary of the analytical methods referenced by the method mnemonic. Listed in the following text table are the components analyzed and units reported by the assay.

Analyte	Method Mnemonic	Units Reported by Assay
Proximates		
Moisture	M100	%[a]
Protein	PGEN	%[a]
Total Fat	FSOX	%[a]
Ash	ASHM	%[a]
Crude Fiber	CFIB	%[a]
Neutral Detergent Fiber	NDFE	%[a]
Acid Detergent Fiber	ADF	%[a]
Minerals	ICPS	ppm[b]
Calcium, Copper, Iron, Magnesium, Manganese, Phosphorus, Potassium, Sodium, Zinc		
Cadmium	CDA	ppm[b]
Selenium	SEAS	ppm[b]
Sulfur	SULA	%[a]
Chloride	CLA	%[a]
Fatty Acid Profile	FAPM	%[a]
Amino Acid Composition	TAAP	mg/g fresh weight
Pesticide Profile	M304	ppm[b]

[a] % = (g/g fresh weight) x 100
[b] ppm = µg/g fresh weight

Carbohydrate (CHO) values were determined by calculation and reported as % = (g/g fresh weight) x 100.

Two reps of the test (MON853) and control substances (MON847) were harvested from two different plots grown at the same IL location and were analyzed for pesticide profiles. The results demonstrated acceptable values and then the respective grain from the Rep 1 and Rep 2 plots were pooled for compositional analyses (MON853 Pool and MON847 Pool). In addition, MON853 Rep 1 and MON847 Rep 1 were analyzed separately from the pool for compositional analyses. All the Hawaii location samples and reference substances were analyzed for pesticide profiles and compositional analyses.

Additional analyses or re-analyses were documented and justified in the raw data. A minimum frequency of 10% quality control samples (duplicates, recoveries, certified reference standards, blanks, or validated control samples) were prepared and analyzed at Covance.

STATISTICAL METHODS

No statistical analysis of the data was performed at Covance.

MAINTENANCE OF RAW DATA AND RECORDS

A final analytical subreport, including compositional analyses summary spreadsheet accepted by the Covance Quality Assurance Unit, will be sent to the sponsor. All data relating to or generated by the project, including (if applicable) protocol, protocol amendments, a copy of the final analytical subreport, results, magnetically encoded records, laboratory notebooks, applicable SOPs lists and any other information or records relating to the project will be retained in the archives of Covance in accordance with 40 CFR Part 160. Ten years after signing of the final report, all of the aforementioned materials will be returned to the sponsor.

The supporting records retained at Covance, but not archived with the study data, include the following items:

Storage area temperature records
Instrument calibration and maintenance records
Employee training records

RESULTS

The results for the pesticide profiles and compositional analyses (if applicable) of the samples are presented in Tables 1 and 2, respectively. All of the results are on a fresh-weight basis.

SIGNATURES

Matthew L. Breeze
Principal Investigator
Vitamin Chemistry
Covance Laboratories Inc.

8-24-00
Date

James R. Wehrmann
Associate Director
Food and Drug Analysis
Covance Laboratories Inc.

8/24/00
Date

Table 1
Pesticide Profiles

Monsanto ID	MON853 Rep 1	Mon853 Rep 2	Mon847 Rep 1	Mon847 Rep 2
Covance ID	00300639	00300640	00300641	00300642
Pesticides (ppm)				
Organophosphates	<0.050	<0.050	<0.050	<0.050
Organonitrogens	<0.500	<0.500	<0.500	<0.500
Organochlorinated	<0.200	<0.200	<0.200	<0.200
N-Methylcarbamates	<0.100	<0.100	<0.100	<0.100

Monsanto ID	Asgrow RX 770	NK 603	HC33 x LH283	LH235 x LH185
Covance ID	00300643	00600597	00600598	00600599
Pesticides (ppm)				
Organophosphates	<0.050	<0.050	<0.050	<0.050
Organonitrogens	<0.500	<0.500	<0.500	<0.500
Organochlorinated	<0.200	<0.200	<0.200	<0.200
N-Methylcarbamates	<0.100	<0.100	<0.100	<0.100

Monsanto ID	LH242 x LH262	LH200 x LH172	B73HT x LH82
Covance ID	00600600	00600601	00600602
Pesticides (ppm)			
Organophosphates	<0.050	<0.050	<0.050
Organonitrogens	<0.500	<0.500	<0.500
Organochlorinated	<0.200	<0.200	<0.200
N-Methylcarbamates	<0.100	<0.100	<0.100

Table 2
Compositional Analyses

Monsanto ID **Covance ID**	MON853 Pool 00401498	MON847 Pool 00401499	Mon853 Rep 1 00401500	**Mon847 Rep 1** **00401501**
Proximate (%)				
Protein	8.50	9.11	8.18	8.93
Moisture	10.1	11.5	10.1	11.4
Total Fat	2.97	3.50	3.81	3.34
Ash	1.39	1.05	1.16	1.34
Carbohydrates	77.0	74.8	76.8	75.0
Neutral Detergent Fiber (%)	15.0	14.6	9.65	10.9
Acid Detergent Fiber (%)	4.58	4.53	3.98	4.09
Crude Fiber (%)	1.78	2.07	1.69	1.65
Cadmium (ppm)	<0.04	<0.04	<0.04	<0.04
Chloride (%)	0.052	0.054	0.050	0.046
Selenium (ppm)	0.22	0.24	0.25	0.47
Sulfur (%)	0.086	0.088	0.079	0.089
Minerals (ppm)				
Calcium	43.1	40.3	41.9	38.7
Copper	1.42	1.75	1.62	1.67
Iron	27.3	51.8	24.3	35.4
Magnesium	1040	1120	1110	1130
Manganese	3.54	4.54	3.33	4.62
Phosphorus	2840	2970	3040	3060
Potassium	3340	3100	3470	3330
Sodium	<100	<100	<100	<100
Zinc	16.6	19.3	18.0	18.3

Table 2 (Continued)
Compositional Analyses

Monsanto ID	MON853 Pool	MON847 Pool	Mon853 Rep 1	Mon847 Rep 1
Covance ID	00401498	00401499	00401500	00401501
Fatty Acids (%)				
8:0 caprylic	<0.00400	<0.00400	<0.00400	<0.00400
10:0 capric	<0.00400	<0.00400	<0.00400	<0.00400
12:0 lauric	<0.00400	<0.00400	<0.00400	<0.00400
14:0 myristic	<0.00400	<0.00400	<0.00400	<0.00400
14:1 myristoleic	<0.00400	<0.00400	<0.00400	<0.00400
15:0 pentadecanoic	<0.00400	<0.00400	<0.00400	<0.00400
15:1 pentadecenoic	<0.00400	<0.00400	<0.00400	<0.00400
16:0 palmitic	0.291	0.351	0.372	0.327
16:1 palmitoleic	<0.00400	0.00449	0.00405	<0.00400
17:0 heptadecanoic	<0.00400	<0.00400	<0.00400	<0.00400
17:1 heptadecenoic	<0.00400	<0.00400	<0.00400	<0.00400
18:0 stearic	0.0504	0.0556	0.0635	0.0545
18:1 oleic	0.601	0.792	0.783	0.718
18:2 linoleic	1.70	2.04	2.25	1.59
18:3 gamma linolenic	<0.00400	<0.00400	<0.00400	<0.00400
18:3 linolenic	0.0226	0.0300	0.0309	0.0201
20:0 arachidic	0.00999	0.0112	0.0131	0.0114
20:1 eicosenoic	0.00801	0.00906	0.0103	0.00995
20:2 eicosadienoic	<0.00400	<0.00400	<0.00400	<0.00400
20:3 eicosatrienoic	<0.00400	<0.00400	<0.00400	<0.00400
20:4 arachidonic	<0.00400	<0.00400	<0.00400	<0.00400
22:0 behenic	0.00567	0.00524	0.00572	0.00861

Table 2 (Continued)
Compositional Analyses

Monsanto ID	MON853 Pool	MON847 Pool	Mon853 Rep 1	Mon847 Rep 1
Covance ID	00401498	00401499	00401500	00401501
Amino Acids (mg/g)				
Aspartic Acid	6.09	6.67	5.38	6.02
Threonine	3.28	3.36	2.94	3.24
Serine	4.40	4.53	3.87	4.40
Glutamic Acid	17.6	19.1	15.6	17.6
Proline	8.93	9.52	8.22	9.27
Glycine	3.46	3.59	3.13	3.37
Alanine	6.99	7.43	6.30	7.05
Cystine	1.95	2.01	1.87	1.94
Valine	4.57	4.83	4.23	4.65
Methionine	1.70	1.70	1.64	1.65
Isoleucine	3.32	3.56	3.08	3.46
Leucine	12.0	12.9	10.8	12.4
Tyrosine	3.14	3.46	2.03	3.27
Phenylalanine	4.57	4.93	4.07	4.69
Histidine	2.82	2.94	2.64	2.87
Lysine	2.86	2.90	2.67	2.67
Arginine	4.26	4.21	3.64	4.40
Tryptophan	0.589	0.554	0.530	0.623

Table 2 (Continued)
Compositional Analyses

Monsanto ID	Asgrow RX 770	NK 603	HC33 x LH283	LH235 x LH185
Covance ID	00401502	00600597	00600598	00600599
Proximate (%)				
Protein	8.45	8.53	8.51	7.50
Moisture	10.3	10.1	9.86	9.26
Total Fat	2.80	3.43	3.42	2.52
Ash	1.25	1.38	1.18	1.10
Carbohydrates	77.2	76.6	77.0	79.6
Neutral Detergent Fiber (%)	8.82	8.97	10.1	13.0
Acid Detergent Fiber (%)	3.11	3.07	2.87	2.99
Crude Fiber (%)	1.63	1.79	1.95	2.08
Cadmium (ppm)	<0.04	<0.04	<0.04	<0.04
Chloride (%)	0.047	0.055	0.051	0.075
Selenium (ppm)	0.32	<.05	<.05	<.05
Sulfur (%)	0.097	0.071	0.075	0.058
Minerals (ppm)				
Calcium	44.1	28.5	34.4	33.2
Copper	1.73	1.71	2.05	2.13
Iron	31.6	19.7	16.2	16.1
Magnesium	1110	1050	826	715
Manganese	5.80	6.15	6.44	6.35
Phosphorus	3040	3010	2510	1890
Potassium	3300	3580	3060	3220
Sodium	<100	<100	<100	<100
Zinc	18.9	19.3	15.9	13.7

Table 2 (Continued)
Compositional Analyses

Monsanto ID	Asgrow RX 770	NK 603	HC33 x LH283	LH235 x LH185
Covance ID	00401502	00600597	00600598	00600599
Fatty Acids (%)				
8:0 caprylic	<0.00400	<0.00400	<0.00400	<0.00400
10:0 capric	<0.00400	<0.00400	<0.00400	<0.00400
12:0 lauric	<0.00400	<0.00400	<0.00400	<0.00400
14:0 myristic	<0.00400	<0.00400	<0.00400	<0.00400
14:1 myristoleic	<0.00400	<0.00400	<0.00400	<0.00400
15:0 pentadecanoic	<0.00400	<0.00400	<0.00400	<0.00400
15:1 pentadecenoic	<0.00400	<0.00400	<0.00400	<0.00400
16:0 palmitic	0.299	0.293	0.346	0.288
16:1 palmitoleic	<0.00400	0.00421	0.00491	<0.00400
17:0 heptadecanoic	<0.00400	<0.00400	<0.00400	<0.00400
17:1 heptadecenoic	<0.00400	<0.00400	<0.00400	<0.00400
18:0 stearic	0.0401	0.0615	0.0553	0.0458
18:1 oleic	0.662	0.756	1.03	0.508
18:2 linoleic	1.32	2.04	1.72	1.46
18:3 gamma linolenic	<0.00400	<0.00400	<0.00400	<0.00400
18:3 linolenic	0.0234	0.0362	0.0328	0.0274
20:0 arachidic	0.0105	0.0121	0.0125	0.00961
20:1 eicosenoic	0.00916	0.00949	0.00999	0.00598
20:2 eicosadienoic	<0.00400	<0.00400	<0.00400	<0.00400
20:3 eicosatrienoic	<0.00400	<0.00400	<0.00400	<0.00400
20:4 arachidonic	<0.00400	<0.00400	<0.00400	<0.00400
22:0 behenic	0.00624	0.00490	0.00473	<0.00400

Table 2 (Continued)
Compositional Analyses

Monsanto ID	Asgrow RX 770	NK 603	HC33 x LH283	LH235 x LH185
Covance ID	00401502	00600597	00600598	00600599
Amino Acids (mg/g)				
Aspartic Acid	5.41	5.86	5.70	5.20
Threonine	3.05	2.96	2.93	2.66
Serine	4.15	4.07	4.05	3.49
Glutamic Acid	16.3	16.2	16.7	13.8
Proline	8.56	8.28	8.25	7.18
Glycine	3.24	3.46	3.26	2.97
Alanine	6.51	6.63	6.95	5.61
Cystine	1.98	1.97	1.84	1.72
Valine	4.32	4.34	4.31	3.91
Methionine	2.00	1.83	1.60	1.54
Isoleucine	3.11	3.22	3.19	2.77
Leucine	11.4	10.8	11.0	9.11
Tyrosine	3.09	2.88	2.90	2.58
Phenylalanine	4.25	4.32	4.23	3.70
Histidine	2.73	2.52	2.53	2.35
Lysine	2.49	2.89	2.76	2.47
Arginine	3.86	4.14	3.85	3.49
Tryptophan	0.559	0.597	0.554	0.498

Table 2 (Continued)
Compositional Analyses

Monsanto ID	LH242 x LH262	LH200 x LH172	B73HT x LH82
Covance ID	00600600	00600601	00600602
Proximate (%)			
Protein	8.28	8.17	8.84
Moisture	10.4	9.95	11.4
Total Fat	3.39	3.75	3.41
Ash	1.17	1.31	1.03
Carbohydrates	76.8	76.8	75.3
Neutral Detergent Fiber (%)	8.75	5.84	10.7
Acid Detergent Fiber (%)	3.36	2.28	3.00
Crude Fiber (%)	1.92	1.49	1.73
Cadmium (ppm)	<0.04	<0.04	<0.04
Chloride (%)	0.080	0.065	0.058
Selenium (ppm)	<.05	<.05	<.05
Sulfur (%)	0.070	0.053	0.073
Minerals (ppm)			
Calcium	29.6	34.9	28.8
Copper	1.54	1.61	1.49
Iron	16.3	20.1	18.9
Magnesium	745	852	851
Manganese	6.74	6.32	5.81
Phosphorus	2060	2730	2280
Potassium	3010	3610	2930
Sodium	<100	<100	<100
Zinc	11.8	19.9	17.0

Table 2 (Continued)
Compositional Analyses

Monsanto ID	LH242 x LH262	LH200 x LH172	B73HT x LH82
Covance ID	00600600	00600601	00600602
Fatty Acids (%)			
8:0 caprylic	<0.00400	<0.00400	<0.00400
10:0 capric	<0.00400	<0.00400	<0.00400
12:0 lauric	<0.00400	<0.00400	<0.00400
14:0 myristic	<0.00400	<0.00400	<0.00400
14:1 myristoleic	<0.00400	<0.00400	<0.00400
15:0 pentadecanoic	<0.00400	<0.00400	<0.00400
15:1 pentadecenoic	<0.00400	<0.00400	<0.00400
16:0 palmitic	0.386	0.393	0.301
16:1 palmitoleic	<0.00400	0.00471	0.00433
17:0 heptadecanoic	<0.00400	<0.00400	<0.00400
17:1 heptadecenoic	<0.00400	<0.00400	<0.00400
18:0 stearic	0.0579	0.0642	0.0599
18:1 oleic	0.891	0.846	0.774
18:2 linoleic	1.81	2.21	2.08
18:3 gamma linolenic	<0.00400	<0.00400	<0.00400
18:3 linolenic	0.0280	0.0408	0.0366
20:0 arachidic	0.0139	0.0142	0.0124
20:1 eicosenoic	0.00939	0.0105	0.00979
20:2 eicosadienoic	<0.00400	<0.00400	<0.00400
20:3 eicosatrienoic	<0.00400	<0.00400	<0.00400
20:4 arachidonic	<0.00400	<0.00400	<0.00400
22:0 behenic	0.00472	0.00590	0.00467

Table 2 (Continued)
Compositional Analyses

Monsanto ID	LH242 x LH262	LH200 x LH172	B73HT x LH82
Covance ID	00600600	00600601	00600602
Amino Acids (mg/g)			
Aspartic Acid	5.89	5.62	5.97
Threonine	2.95	2.95	3.05
Serine	4.01	3.93	4.25
Glutamic Acid	15.5	15.4	17.0
Proline	7.50	7.96	8.65
Glycine	3.30	3.29	3.39
Alanine	6.36	6.37	6.99
Cystine	1.82	1.89	1.97
Valine	4.23	4.17	4.44
Methionine	1.60	1.79	1.73
Isoleucine	3.23	3.08	3.28
Leucine	10.7	10.2	11.2
Tyrosine	3.07	3.00	3.04
Phenylalanine	4.35	4.17	4.47
Histidine	2.47	2.43	2.52
Lysine	2.87	2.71	2.75
Arginine	4.12	3.85	4.01
Tryptophan	0.552	0.517	0.529

APPENDIX A

Analytical Method Summaries and Reference Standards

ANALYTICAL METHOD SUMMARIES AND REFERENCE STANDARDS

Pesticide Profile (M304)

The sample was blended with ethyl acetate and cleaned up by gel permeation chromatography. The extract was injected for organophosphates, chlorinated, and nitrogen on a gas chromatography system. The carbamates were injected using a high performance liquid chromatography system. The limits of detection (ppm) for this assay were:

Organophosphates	0.050
Organonitrogens	0.500
Organochlorinated	0.200
N-Methylcarbamates	0.100

Reference Standards:

Restek Corporation Custom Chlorinated Pesticide Mix, Catalog # 54609, Lot Number A011108

Restek Corporation Custom Phosphorus Pesticides Mix, Catalog # 54610, Lot Number A011117

Restek Corporation Custom Nitrogen List Catalog # 54611, Lot Number A011122

Restek Corporation Carbamates I Mixture Catalog # 54612, Lot Number A011493

Restek Corporation Carbamates II Mixture Catalog # 54613, Lot Number A011612

Reference:

Pesticide Analytical Manual Volume 1: Multiresidue Methods, 3rd Ed., Chapter 3 Multiclass Multiresidue Methods: 304 Method for Fatty Foods, Food and Drug Administration, (1999), modified.

Protein (PGEN)

Nitrogenous compounds in the sample were reduced in the presence of boiling sulfuric acid and a mercury catalyst mixture to form ammonia. The acid digest was made alkaline. The ammonia was distilled and then titrated with a standard acid. The percent nitrogen was calculated and converted to protein using the factor 6.25. The limit of detection for this study was 0.1%. There is no analytical reference standard for this analysis.

References:

Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Methods 955.04 and 979.09, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Bradstreet, R. B., *The Kjeldahl Method for Organic Nitrogen*, Academic Press: New York, New York, (1965), modified.

Kalthoff, I.M., and Sandell, E.B., *Quantitative Inorganic Analysis*, MacMillan: New York, (1948), modified.

Moisture (M100)
The sample was dried in a vacuum oven at 100°C to a constant weight. The moisture weight loss was determined and converted to percent moisture. The limit of detection for this study was 0.1%. There is no analytical reference standard for this analysis.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Methods 926.08 and 925.09, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Fat by Soxhlet Extraction (FSOX)
The sample was weighed into a cellulose thimble containing sand or sodium sulfate and dried to remove excess moisture. Pentane was dripped through the sample to remove the fat. The extract was then evaporated, dried, and weighed. The limit of detection for this study was 0.1%. There is no analytical reference standard for this analysis.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Method 960.39, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Ash (ASHM)
The sample was placed in an electric furnace at 550°C and ignited to drive off all volatile organic matter. The nonvolatile matter remaining was quantitated gravimetrically and calculated to determine percent ash. The limit of detection for this study was 0.1%. There is no analytical reference standard for this analysis.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Method 923.03, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Carbohydrates (CHO)
The total carbohydrate level was calculated by difference using the fresh weight-derived data and the following equation:

% carbohydrates = 100 % - (% protein + % fat + % moisture + % ash)

The limit of detection for this study was 1.0%. There is no analytical reference standard for this analysis.

Reference:
United States Department of Agriculture, "Energy Value of Foods", *Agriculture Handbook No. 74,* pp. 2-11, (1973)

Crude Fiber (CFIB)
Crude fiber was quantitated as the loss on ignition of dried residue remaining after digestion of the sample with 1.25% sulfuric acid and 1.25% sodium hydroxide solutions under specific conditions. The limit of detection for this study was 0.1%. There is no analytical reference substance for this analysis.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Method 962.09, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Neutral Detergent Fiber, Enzyme Method (NDFE)
The sample was placed in a fritted vessel and washed with a neutral boiling detergent solution that dissolved the protein, carbohydrate, enzyme, and ash. An acetone wash removed the fats and pigments. Hemicellulose, cellulose, and lignin fractions were collected on the frit and determined gravimetrically. The limit of detection for this study was 0.1%. There is no analytical reference standard for this analysis.

References:
Approved Methods of the American Association of Cereal Chemists, 9th Ed., Method 32.20, (1998), modified.

Forage Fiber Analyses, Agriculture Handbook No.379, United States Department of Agriculture, (1970), modified.

Acid Detergent Fiber (ADF)

The sample was placed in a fritted vessel and washed with an acidic boiling detergent solution that dissolved the protein, carbohydrate, and ash. An acetone wash removed the fats and pigments. Lignocellulose fraction was collected on the frit and determined gravimetrically. The limit of detection for this study was 0.1%. There is no analytical reference standard for this analysis.

Reference:

Forage Fiber Analyses, Agriculture Handbook No.379, United States Department of Agriculture, (1970), modified.

Cadmium (CDA)

The sample was either dry-ashed, wet-ashed, or read directly. If dry-ashed, the sample was dried, pre-charred and ashed at 500°C ±50° in a muffle furnace for 5 to 16 hours. The sample was removed from the muffle furnace, cooled, treated with nitric acid, re-ashed, and dissolved in hydrochloric acid solution. If wet-ashed, the sample was digested on a hot plate with nitric acid, hydrochloric acid, and/or hydrogen peroxide. The amount of cadmium was determined by comparing the signal of the unknown sample, measured by the atomic absorption (AA) spectrophotometer, with the signal of the standard solutions. The limit of detection for this assay is 0.04 ppm.

Reference Standard:

Fisher Scientific, 1000 ppm cadmium, Lot Number 981734-24

References:

Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Method 974.27, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Analytical Methods for Atomic Absorption Spectrophotometry, Perkin-Elmer: Norwalk, Connecticut, (January 1982), modified.

Methods for Chemical Analysis of Water and Wastes, Metals 1-19 and Method 213.1, U. S. EPA: Cincinnati, Ohio, (1979), modified.

ICP Emission Spectrometry (ICPS)

Calcium
Copper
Iron
Magnesium
Manganese
Phosphorus
Potassium
Sodium
Zinc

The sample was dried, precharred, and ashed overnight at 500° ± 50°C. The ashed sample was treated with hydrochloric acid, taken to dryness, and put into a solution of 5% hydrochloric acid. The amount of each element was determined at appropriate wavelengths by comparing the emission of the unknown sample, measured by the inductively coupled plasma, with the emission of the standard solutions.

Spex CertiPrep Reference Standards and Limits of Detection:

Mineral	Lot Numbers	Concentration (ppm)	Limit of Detection (ppm)
Calcium	L6-59CA	10,000	20.0
Copper	6-242CU	1,000	0.500
Iron	7-97FE	1,000	2.00
Magnesium	L5-187MG	10,000	20.0
Manganese	6-201MN	1,000	0.300
Phosphorus	K6-54P	10,000	20.0
Potassium	M6-16K	10,000	100
Sodium	M6-41NA	10,000	100
Zinc	6-264ZN	1,000	0.400

References:

Dahlquist, R.L., and Knoll, J.W., "Inductively Coupled Plasma-Atomic Emission Spectrometry: Analysis of Biological Materials and Soils for Major, Trace, and Ultra Trace Elements," *Applied Spectroscopy*, *32*:1-29, (1978), modified.

Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Methods 984.27 and 985.01, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Selenium (SEAS)

The sample was digested in a nitric-perchloric-hydrochloric acid mixture, in which any selenium present formed selenous acid. The selenous acid is reacted with 2,3-4,5-benzopiazselenol. This compound was extracted into an organic solvent. The amount of selenium is then determined by comparing the absorbance of the unknown sample, measured by fluorescence spectroscopy, with the absorbance of standard solutions. The limit of detection for this assay was 0.05 ppm.

Reference Standard:
Fisher Scientific, 1000 ppm selenium, Lot Number 994379-18

References:

Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Methods 969.06 and 986.15, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Watkinson, J. H., "Fluorometric Determination of Selenium in Biological Material with 2,3-Diaminonaphthalene," *Analytical Chemistry*, *38*(1):92-7, (1966), modified.

Haddad, P. R. and Smythe, L. E., "A Critical Evaluation of Fluorometric Methods for Determination of Selenium in Plant Materials with 2,3-Diaminonaphthalene," *Talanta*, *21*:859-865, (1974), modified.

Bayfield, R. F. and Romalis, L. F., "pH Control in the Fluorometric Assay for Selenium with 2,3-diaminonaphthalene,", *Analytical Biochemistry*, *144*(2):569-576, (1985), modified.

Sulfur (SULA)

The sample was weighed into a volumetric flask and refluxed with nitric acid. Perchloric acid was added and refluxed again. Hydrochloric acid was added and the sample was heated to break down nitroso compounds. Sulfur seed and sulfur buffer solution were added. The analysis was completed by measuring the extent of turbidity in the sample after the addition of barium chloride. The percent transmittance of the samples is compared to that of standards for determining sulfur concentrations. The limit of detection for this study was 0.015%.

Reference Standard:
Spex CertiPrep, 1,000 mcg/mL sulfur, used as 100%, Lot Number 6-202S

Reference:
Soil Society of America Proceedings, 29:71-72, (1965), modified.

Chloride (CLA)
The sample was put into solution with double deionized water and then made acidic with nitric acid. Chloride was determined potentiometrically by titrating with a standard silver nitrate solution to a predetermined endpoint. The limit of detection for this assay was 0.004%.

Reference Standard:
Mallinckrodt, 1000 ppm sodium chloride, 99.9% purity, Lot Number 7581

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Methods 963.05, 969.10, and 971.27, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

Fatty Acids (FAPM)
The lipid was extracted and saponified with 0.5 N sodium hydroxide in methanol. The saponification mixture was methylated with 14% boron trifluoride:methanol. The resulting methyl esters were extracted with heptane containing an internal standard. The methyl esters of the fatty acids were analyzed by gas chromatography using external standards for quantitation. The limit of detection was 0.00400%.

Reference Standards:
Nu Chek Prep Hazleton Special Prep No. 1, used as 100%, Lot Number JA10-I
Nu Chek Prep Special Prep No. 2, used as 100%, Lot Number S10-G
Nu Chek Prep Special Prep No. 3, used as 100%, Lot Number F23-J
Nu Chek Prep Hazleton Special Prep No. 4, used as 100%, Lot Number JY26-J
Nu Chek Prep Methyl Gamma Linolenate, used as 100%, Lot Number U-63M-F25-J

Reference:
Official Methods and Recommended Practices of the AOCS, 5th Ed., Method Ce 1-62, American Oil Chemists' Society: Champaign, Illinois, (1997), modified.

Amino Acid Composition (TAAP)

Total aspartic acid (including asparagine)
Total threonine
Total serine
Total glutamic acid (including glutamine)
Total proline
Total glycine
Total alanine
Total valine
Total isoleucine
Total leucine
Total tyrosine
Total phenylalanine
Total histidine
Total lysine
Total arginine
Total tryptophan
Sulfur-containing amino acids: Total methionine
Total cystine (including cysteine)

The sample was assayed by three methods to obtain the full profile. Tryptophan required a base hydrolysis with sodium hydroxide. The sulfur containing amino acids required an oxidation with performic acid prior to hydrolysis with hydrochloric acid. Analysis of the samples for the remaining amino acids was accomplished through direct acid hydrolysis with hydrochloric acid. Once hydrolyzed, the individual amino acids were then quantitated using an automated amino acid analyzer. The limit of detection for this study was 0.1 mg/g.

Reference Standards:
Beckman K18, 2.5 µmol/mL per constituent except cystine (1.25 µmol/mL), Lot Number S911165
Aldrich L-Tryptophan, 99%, Lot Number 12729HS

Aldrich L-Cysteic Acid Monohydrate, 98%, Lot Number 04615MS
Sigma L-Methionine Sulfone, used as 100%, Lot Number 012H3349

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Method 982.30, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2000), modified.

COVANCE.
THE DEVELOPMENT SERVICES COMPANY

AMENDMENT NO. 1 TO THE ANALYTICAL SUBREPORT

Covance 6103-266

Monsanto Study Number: 00-01-39-07

Pesticide Profile and Compositional Analyses of Corn Events MON853 and NK603, Parental Control Lines, and Reference Lines Produced in the U.S.

Sponsor:	Monsanto Company, St. Louis, MO
Monsanto Study Director:	Mary Taylor
Compositional Analyses Testing Facility:	Covance Laboratories Inc.
Covance Principal Investigator:	Matthew Breeze

This amendment modifies the analytical subreport. These changes do not effect the quality or integrity of the data.

1. **Page 7, REGULATORY COMPLIANCE.** To correct grammatical errors (as underlined) in the finalized analytical subreport, delete the following sentence:

   This study was conducted in compliance with the Environmental Protection Agency (EPA) Good Laboratory Practice (GLP) Standards as set forth in Title 40 of the US Code of Federal Regulations Part 160 with the exceptions that the reference standard were not characterized according to GLP standards, reserve samples from each batch of the reference stands were not retained, and that the final analytical subreport format is not in full accordance with EPA Pesticide Regulation Notice 86-5.

and replace with:

This study was conducted in compliance with the Environmental Protection Agency (EPA) Good Laboratory Practice (GLP) Standards as set forth in Title 40 of the US Code of Federal Regulations Part 160 with the exceptions that the reference standards were not characterized according to GLP standards, reserve samples from each batch of the reference standards were not retained, and that the final analytical subreport format is not in full accordance with EPA Pesticide Regulation Notice 86-5.

2. **Page 7, TEST, CONTROL AND REFERENCE SUBSTANCES, Identification, Test Substances.** To correct a grammatical error (as underlined) in the finalized analytical subreport, delete the following sentence:

The test substances were defined as corn event M0N853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season and corn event NK603 produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03.

and replace with:

The test substances were defined as corn event MON853 produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season and corn event NK603 produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03.

3. **Page 8, TEST, CONTROL AND REFERENCE SUBSTANCES, Identification, Parental Control Substances.** To correct a grammatical error and an incorrect parental control sample identification (as underlined) in the finalized analytical subreport, delete the following paragraph:

The first parental (negative) control substance, M0N847 was the non-transgenic parental control corn line for MON853. It was also produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season. The

second parental (negative) control substance, BT73Ht x LH82, was the non-transgenic parental control corn line for NK603. It was also produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03.

and replace with:

The first parental (negative) control substance, MON847 was the non-transgenic parental control corn line for MON853. It was also produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season. The second parental (negative) control substance, B73Ht x LH82, was the non-transgenic parental control corn line for NK603. It was also produced in Kaunakakai, Hawaii under Production Plan #00-01-46-03.

4. **Page 8, TEST, CONTROL AND REFERENCE SUBSTANCES, Identification, Reference Substances.** To correct a grammatical error and an incorrect reference substance identification (as underlined) in the finalized analytical subreport, delete the following sentence:

Reference control substances in this study included the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 19HC399 field season and four non-transgenic commercial corn variety reference substances (3 x LH283, LH235 x LH185, LH242 x LH262, and LH2OO x LH172) grown under Production Plan #00-01-46-03 in Kaunakakai, Hawaii.

And replace with:

Reference control substances in this study included the non-transgenic commercial corn variety Asgrow RX770 also produced in Monmouth, IL under Production Plan #99-01-39-13 in the U.S. during the 1999 field season and four non-transgenic commercial corn variety reference substances (HC33 x LH283, LH235 x LH185, LH242 x LH262, and LH200 x LH172) grown under Production Plan #00-01-46-03 in Kaunakakai, Hawaii.

5. **Page 10, PROCEDURES.** To correct grammatical errors (as underlined) in the finalized analytical subreport and to clarify that both MON853 Rep 1 and MON847 Rep 1 were also analyzed separately from the pool, delete the following paragraph after the table:

Two reps of the test (M0N853) and control substances (M0N847) were harvested from two different plots grown at the same IL location and were analyzed for pesticide profiles. The results demonstrated acceptable contamination and then the respective grain from the Rep 1 and Rep 2 plots were pooled for compositional analyses (MON853 Pool and MON847 Pool). All the Hawaii location samples and reference substances were analyzed for pesticide profiles and compositional analyses.

and replace with:

Two reps of the test (MON853) and control substances (MON847) were harvested from two different plots grown at the same IL location and were analyzed for pesticide profiles. The results demonstrated acceptable contamination and then the respective grain from the Rep 1 and Rep 2 plots were pooled for compositional analyses (MON853 Pool and MON847 Pool). In addition, MON847 Rep 1 and MON847 Rep 1 were analyzed separately from the pool for compositional analyses. All the Hawaii location samples and reference substances were analyzed for pesticide profiles and compositional analyses.

ANALYTICAL SUBREPORT AMENDMENT APPROVAL

Matthew L. Breeze
Principal Analytical Investigator
Inorganic Chemistry
Covance Laboratories Inc.

12-19-00
Date

James R. Wehrmann
Associate Director
Food and Drug Analysis
Covance Laboratories Inc.

12-19-00
Date

QUALITY ASSURANCE STATEMENT

This change in the subreport has been reviewed by the Quality Assurance Unit of Covance Laboratories Inc.

Analytical Subreport Amendment Inspection Dates:	12/18/00-12/19/00
Date Reported to Principal Investigator and Respective Management:	12/19/00
Date Reported to Study Director and Respective Management:	12/19/00

Representative
Quality Assurance Unit
Covance Laboratories Inc.

12/19/00
Date

COVANCE
THE DEVELOPMENT SERVICES COMPANY

AMENDMENT NO. 2 TO THE ANALYTICAL SUBREPORT

Covance 6103-266

Monsanto Study Number: 00-01-39-07

Pesticide Profile and Compositional Analyses of Corn Events MON853 and NK603, Parental Control Lines, and Reference Lines Produced in the U.S.

Sponsor:	Monsanto Company, St. Louis, MO
Monsanto Study Director:	Mary L. Taylor
Compositional Analyses Testing Facility:	Covance Laboratories Inc.
Covance Principal Investigator:	Matthew L. Breeze

This amendment modifies the analytical subreport. These changes do not effect the quality or integrity of the data.

1. **Page 10, PROCEDURES.** For clarification (as underlined) and to correct a typographical error (as underlined), respectively, delete the following paragraph:

   Two reps of the test (MON853) and control substances (MON847) were harvested from two different plots grown at the same IL location and were analyzed for pesticide profiles. The results demonstrated acceptable contamination and then the respective grain from the Rep 1 and Rep 2 plots were pooled for compositional analyses (MON853 Pool and MON847 Pool). In addition, MON847 Rep 1 and MON847 Rep 1 were analyzed separately from the pool for compositional analyses. All the Hawaii location samples and reference substances were analyzed for pesticide profiles and compositional analyses.

And replace with:

Two reps of the test (MON853) and control substances (MON847) were harvested from two different plots grown at the same IL location and were analyzed for pesticide profiles. The results demonstrated acceptable values and then the respective grain from the Rep 1 and Rep 2 plots were pooled for compositional analyses (MON853 Pool and MON847 Pool). In addition, MON853 Rep 1 and MON847 Rep 1 were analyzed separately from the pool for compositional analyses. All the Hawaii location samples and reference substances were analyzed for pesticide profiles and compositional analyses.

ANALYTICAL SUBREPORT AMENDMENT APPROVAL

Matthew L. Breeze
Principal Analytical Investigator
Inorganic Chemistry
Covance Laboratories Inc.

1-12-01
Date

James R. Wehrmann
Associate Director
Food and Drug Analysis
Covance Laboratories Inc.

1-12-01
Date

QUALITY ASSURANCE STATEMENT

This change in the subreport has been reviewed by the Quality Assurance Unit of Covance Laboratories Inc.

Analytical Subreport Amendment Inspection Dates:	1/11/01
Date Reported to Principal Investigator and Respective Management:	1/11/01
Date Reported to Study Director and Respective Management:	1/11/01

Representative
Quality Assurance Unit
Covance Laboratories Inc.

12 Jan. 01
Date

Attachment 3.

Romer Labs Summary pp. 89-91

[redacted]

ROMER LABS INC.
MYCOTOXIN SPECIALISTS
1301 STYLEMASTER DRIVE
UNION, MO 63084
(314) 583-8600

[redacted]

Client: Monsanto
700 Chesterfield Village Pkwy
Chesterfield, MO 63198

Sample Number: 17286
Invoice Number: 15567
Receive Date: 3/2/00
Report Date: 3/9/00

Contact: Mary Taylor

Sample Description:
1=Corn Grain, Ground, MON-853-Rep 1, 122g
2=Corn Grain, Ground, MON-853-Rep 2, 120g
3=Corn Grain, Ground, MON-847-Rep 1, 122g
4=Corn Grain, Ground, MON-847-Rep 2, 126g
5=Corn Grain, Ground, Asgrow RX 770, 122g

****

Test Description:	Detection Limits	Sample Numbers				
		1	2	3	4	5
Aflatoxin B1	1.0 ppb	ND	ND	ND	ND	ND
Aflatoxin B2	1.0 ppb	ND	ND	ND	ND	ND
Aflatoxin G1	1.0 ppb	ND	ND	ND	ND	ND
Aflatoxin G2	1.0 ppb	ND	ND	ND	ND	ND
Ochratoxin A	5 ppb	ND	ND	ND	ND	ND
Citrinin	0.2 ppm	ND	ND	ND	ND	ND
T-2 Toxin	0.1 ppm	ND	ND	ND	ND	ND
HT-2 Toxin	0.1 ppm	ND	ND	ND	ND	ND
Diacetoxyscirpenol	0.3 ppm	ND	ND	ND	ND	ND
Isosolaniol	0.5 ppm	ND	ND	ND	ND	ND
Fusarenon X	0.5 ppm	ND	ND	ND	ND	ND
Deoxynivalenol	0.1 ppm	ND	ND	ND	ND	ND
15-Acetyl-DON	0.1 ppm	ND	ND	ND	ND	ND
3-Acetyl-DON	0.1 ppm	ND	ND	ND	ND	ND
Nivalenol	0.5 ppm	ND	ND	ND	ND	ND
Zearalenone	100 ppb	ND	ND	ND	ND	ND
Fumonisin B1	0.1 ppm	0.5	1.3	0.9	2.1	0.6
Fumonisin B2	0.1 ppm	0.2	0.4	0.3	0.7	0.2
Fumonisin B3	0.1 ppm	ND	0.1	ND	ND	ND

Approved By:

ND = NONE DETECTED
For Unusual Samples Detection Limits May Be Higher
We Sincerely appreciate your business. Please feel free to call (314) 583-8600,
if you have any questions regarding these results
All reports on the mycotoxin analysis of food, feed, and grain samples apply only to the samples submitted. Reports are not a guarantee of quality of the material of product from which the samples were taken for submission for analysis.

[redacted]

ROMER

Romer™ Labs, Inc.

1301 Stylemaster Drive ▲ Union, MO 63084-1156
Tel: (636) 583 8600 ▲ Fax: (636) 583 6553 ▲ www.romerlabs.com

Client: Monsanto Co.
700 Chesterfield Pkwy N.
St. Louis, MO 63198

Contact: Mary Taylor BB5K

Sample Number: 17494
Invoice Number: 15755
Receive Date: 5 June 00
Report Date: 12 June 00

Sample Description:
1=Corn Grain, Ground, NK603, 116g
2=Corn Grain, Ground, Control B73HbxLH82, 124g
3=Corn Grain, Ground, Ref.1 HC33xLH283, 124g
4=Corn Grain, Ground, Ref 2 LH235xLH185, 124g
5=Corn Grain, Ground, Ref 3 LH242xLH262, 124g
6=Corn Grain, Ground, Ref 4 LH200xLH172, 118g

Test Description:	Detection Limits	Sample Numbers					
		1	2	3	4	5	6
Aflatoxin B1	1.0 ppb	ND	ND	ND	ND	ND	ND
Aflatoxin B2	1.0 ppb	ND	ND	ND	ND	ND	ND
Aflatoxin G1	1.0 ppb	ND	ND	ND	ND	ND	ND
Aflatoxin G2	1.0 ppb	ND	ND	ND	ND	ND	ND
Ochratoxin A	5 ppb	ND	ND	ND	ND	ND	ND
Citrinin	0.2 ppm	ND	ND	ND	ND	ND	ND
T-2 Toxin	0.1 ppm	ND	ND	ND	ND	ND	ND
HT-2 Toxin	0.1 ppm	ND	ND	ND	ND	ND	ND
Diacetoxyscirpenol	0.3 ppm	ND	ND	ND	ND	ND	ND
Neosolaniol	0.5 ppm	ND	ND	ND	ND	ND	ND
Fusarenon X	0.5 ppm	ND	ND	ND	ND	ND	ND
Deoxynivalenol	0.1 ppm	ND	ND	ND	ND	ND	ND
15 Acetyl-DON	0.1 ppm	ND	ND	ND	ND	ND	ND
3 Acetyl-DON	0.1 ppm	ND	ND	ND	ND	ND	ND
Nivalenol	0.5 ppm	ND	ND	ND	ND	ND	ND
Zearalenone	100 ppb	ND	ND	ND	ND	ND	ND
Fumonisin B1	0.1 ppm	0.1	0.1	0.7	ND	0.1	0.3
Fumonisin B2	0.1 ppm	ND	ND	0.2	ND	ND	ND
Fumonisin B3	0.1 ppm	ND	ND	ND	ND	ND	ND

Approved By:

ND = NONE DETECTED
For Unusual Samples Detection Limits May Be Higher
We Sincerely appreciate your business. Please feel free to call (636) 583-8600, if you have any questions regarding these results
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