

Report Title

**Compositional Analyses of Forage and Seed Collected from  
MON 87701 Grown in United States during 2007**

This report reflects data developed and reported in Study REG-08-065

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Report ID

**MSL0021413**

**The text below applies only to use of the data by the United States Environmental Protection Agency (U.S. EPA) in connection with the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).**

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### Statement of Compliance

This report describes the compositional analyses of MON 87701, a conventional control, and reference substances generated under Monsanto study REG-08-065. The Statement of Compliance from study REG-08-065 is provided below.

This study meets the U.S. EPA Good Laboratory Practice requirements as specified in 40 CFR Part 160 with the following exceptions:

- The reference standards used for compositional analysis were not listed in the protocol or characterized according to GLP standards and 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 because the reference standards were accompanied by Certificates of Analysis.
- Stability of the compositional analytes in the test, control, and reference substances was not determined. This exception had no effect on the integrity or quality of the study because the samples were maintained at approximately  $-20^{\circ}\text{C}$  throughout the duration of the study.

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*Nov. 12, 2008*

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Date

### Quality Assurance Statement

Following is a list of reviews conducted by the Monsanto Regulatory Quality Assurance Unit on study REG-08-065.

Reviews conducted by the Quality Assurance Unit confirm that the final report for study REG-08-065 accurately describes the methods and standard operating procedures followed and accurately reflects the raw data of the study.

Dates of Inspection/Audit	Phase	Date Reported to Study Director	Date Reported to Management
10/03/2008	Statistical Data and Draft Report audit	10/07/2008	10/07/2008
10/03/2008	Raw Data and Draft Report Review	10/07/2008	10/07/2008

Reviews that have been conducted by EPL Bio-Analytical Services are enclosed within the EPL Bio-Analytical Services Analytical Sub-report and are specified on their individual QA Statement.

Additionally, the Quality Assurance Unit reviewed this report, MSL 0021413, and confirmed that this report accurately reflects the portions of the final report for study REG-08-065 that are reported in MSL 0021413.

Dates of Inspection/Audit	Phase	Date Reported to Study Director	Date Reported to Management
10/03/2008	Draft Report Review-MSL0021413	10/23/2008	10/23/2008

Patricia A. Thomas  
Quality Assurance Unit  
Monsanto Regulatory, Monsanto Company

11-12-2008  
Date

### Study Certification

This report is an accurate and complete representation of a portion of the work conducted in study # REG-08-065.

#### Signature of Report Approval:

*Kristina Berman*

Kristina H. Berman  
Study Director

*Nov. 12, 2008*

Date



**Study Information (continued)**

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### Abbreviations

AA	amino acid
ADF	acid detergent fiber
COA	certificate of analysis
DW or dw	dry weight
FA	fatty acid
FW or fw	fresh weight
µg, mg, g, kg	microgram, milligram, gram, kilogram
H.U.	hemagglutinating units
ILSI	International Life Sciences Institute
LOQ	limit of quantitation
NDF	neutral detergent fiber
PCR	polymerase chain reaction
PRESS	predicted residual sums of squares
SOP	standard operating procedure
TIU	trypsin inhibitor units
T/C/R	test/control/reference
U.S.	United States

## 1.0 Summary

Monsanto Company has developed insect-protected soybean MON 87701. MON 87701 contains the *cryIAc* gene and expression of the Cry1Ac protein confers protection to certain lepidopteran insects.

The purpose of this study was to evaluate the composition between MON 87701 to a conventional control that has a genetic background similar to the test substance. Twenty commercial conventional soybean varieties were included as reference substances to provide data for the development of a 99% tolerance interval for each component analyzed. Compositional analyses were conducted on forage and seed collected from the test substance, control substance, and 20 unique commercial conventional soybean varieties grown in a 2007 United States (U.S.) field production under the terms of Production Plan 07-01-71-01 (Armstrong, 2008). Compositional analyses of the forage samples included proximates (ash, fat, moisture, and protein), carbohydrates by calculation, acid detergent fiber (ADF), and neutral detergent fiber (NDF). Seed samples were analyzed for proximates (ash, fat, moisture, and protein), carbohydrates by calculation, acid detergent fiber (ADF), neutral detergent fiber (NDF), amino acids, fatty acids (C8-C22), trypsin inhibitors, phytic acid, lectin, isoflavones (daidzein, glycitein, and genistein), vitamin E, raffinose, and stachyose.

In all, 64 different analytical analytes (seven in forage and 57 in seed) were measured. Of the evaluated analytes, nine had more than 50% of the observations below the assay limit of quantitation (LOQ) and, as a result, were excluded from the statistical analysis. Therefore, statistics were provided for 55 analytes (seven in forage and 48 in seed).

The overall data set was examined for evidence of biologically meaningful changes using a mixed model analysis of variance. Six sets of statistical analyses were conducted, five based on the data from each of the replicated field trials and one based on data from a combination of all five field trials, referred to as the combined site in this report. Statistical evaluation of the composition data involved a comparison of the forage and seed from MON 87701 to a conventional control substance. The significant differences were determined at the 5% level of significance ( $p < 0.05$ ). There were 330 statistical comparisons conducted between each test substance and the conventional control (55 comparisons in the combined site and 275 comparisons in the individual sites). Using the data for each analyte obtained from the reference substances, a 99% tolerance interval was calculated to contain, with 95% confidence, 99% of the values contained in the population of commercial conventional soybean varieties. For those comparisons in which the test was significantly different ( $p < 0.05$ ) from the control, the mean test value was compared to the 99% tolerance interval in order to determine if the value was within the tolerance interval and, therefore, considered to be part of the population of commercial conventional soybean.

Statistical analysis of the composition of forage and seed from the five sites and the combined site showed that for 283 (85.8%) of the 330 comparisons made between MON 87701 and control, mean analyte values were not statistically different ( $p \geq 0.05$ ). The remaining comparisons between MON 87701 to the control (14.2%) showed statistically significant differences ( $p < 0.05$ ). However, in all these instances of a significant difference between the test and control, the composition mean values for the test substance were within the calculated 99% tolerance interval for the population of commercial conventional reference substances and were not consistently observed across sites, and therefore, are not regarded as biologically meaningful from a food and feed safety or nutritional perspective. The range of values were also comparable to the published scientific literature and the International Life Sciences Institute (ILSI) Crop Composition Database, further supporting the conclusion that soybean forage and seed produced from MON 87701 are compositionally equivalent to conventional soybean.

## **2.0 Introduction**

Monsanto Company has developed insect-protected soybean MON 87701. MON 87701 contains the *cryIAc* gene and expression of the CryIAc protein confers protection to certain lepidopteran insects.

## **3.0 Purpose**

The purpose of this study was to evaluate the composition between MON 87701 to a conventional control that has a genetic background similar to the test substance. Twenty commercial conventional soybean varieties were included as reference substances to provide data for the development of a 99% tolerance interval for each analyte analyzed. Compositional analyses were conducted on forage and seed collected from the test substances, control substance, and twenty unique commercial conventional reference varieties grown in a 2007 U.S field production under the terms of Production Plan 07-01-71-01.

## **4.0 Test, Control, and Reference (T/C/R) Substances**

### **4.1 Test Substance**

The test substance was MON 87701. Forage and harvested seed tissues were evaluated in this study.

<b>Material Name</b>	<b>Seed Lot Number</b>
MON 87701	GLP-0612-17898-S

#### 4.2 Control Substance

The control substance was A5547, a conventional line that has a similar genetic background to the test substances. Forage and harvested seed tissues were evaluated in this study.

<b>Material Name</b>	<b>Seed Lot Number</b>
A5547	GLP-0612-17895-S

#### 4.3 Reference Substances

The reference substances were commercial conventional soybean varieties. Twenty different varieties were grown at a total of five field sites. Forage and harvested seed tissues from one replicate of the reference substances at each site were evaluated in this study.

<b>Material Name</b>	<b>Seed Lot Number</b>	<b>Site Code</b>
A5843	GLP-0702-18243-S	AL
A5959	GLP-0702-18245-S	AL
CMA 5804AOC	GLP-0702-18244-S	AL
H6686	GLP-0702-18247-S	AL
UA 4805	GLP-0702-18123-S	AR
Ozark	GLP-0702-18124-S	AR
Anand	GLP-0702-18122-S	AR
Hornbeck C5894	GLP-0702-18125-S	AR
A5560	GLP-0702-18242-S	GA
CMC 5901COC	GLP-0702-18246-S	GA
LEE 74	GLP-0702-18248-S	GA
A5403	GLP-0702-18241-S	GA
A4922	GLP-0702-18234-S	IL
H4994	GLP-0702-18235-S	IL
H5218	GLP-0702-18236-S	IL
A5427	GLP-0702-18238-S	IL
DP 5989	GLP-0702-18126-S	NC
Hutcheson	GLP-0703-18396-S	NC

Material Name	Seed Lot Number	Site Code
USG 5601T	GLP-0703-18402-S	NC
Fowler	GLP-0703-18395-S	NC

#### 4.4 T/C/R Substance Characterization

The identities of the forage and seed samples from test, control, and reference substances were verified by the Study Director prior to their use in the study by confirming the chain-of-custody documentation supplied with the forage and seed collected from the field plots. The seed of the test, control, and reference substances was also characterized by event-specific polymerase chain reaction (PCR) analysis, for the presence or absence of MON 87701. The results indicated samples from one replicate of MON 87701 at Site AL and one replicate of A5547 at Site NC samples contained levels of an unintended trait and therefore deemed unacceptable and were excluded from this study. Characterization data were archived at Monsanto Company.

#### 5.0 Field Trial Description

Forage and seed of the test, control, and reference substances were collected from five replicated field sites in the U.S. as detailed in Production Plan 07-01-71-01. Locations of the field sites were as follows: Baldwin County, AL (AL), Jackson County, AR (AR), Clarke County, GA (GA), Jackson County, IL (IL), and Wayne County, NC (NC). Seeds were planted in a randomized complete block design with three replicates per block for each test, control, and reference substance. Samples from all three replicates of test and control plots were analyzed. One replicate of the twenty unique commercial conventional reference soybean varieties were analyzed from plot #3 with the exception of CMC 5901COC due to insufficient sample material and sample from plot #2 was included in this study. All the samples were grown under normal agronomic field conditions for their respective geographic regions.

Forage and seed samples were harvested from all plots and shipped on dry ice (forage) or ambient temperature (seed) to Monsanto Company, St. Louis, MO. A sub-sample for compositional analysis was obtained from each tissue sample collected. These sub-samples were then ground and stored in a freezer set to maintain a temperature of  $-20^{\circ}\text{C}$  until their shipment on dry ice to EPL-BAS (Niantic, IL) for analysis. The label on the samples shipped listed the composition protocol (study) number, sample/tissue type, material name, unique sample number, plot number, and the storage conditions.

## 6.0 Analytical Methods

Forage samples were analyzed for proximates (ash, fat, moisture, and protein), carbohydrates by calculation, acid detergent fiber (ADF), and neutral detergent fiber (NDF). Seed samples were analyzed for proximates (ash, fat, moisture, and protein), carbohydrates by calculation, acid detergent fiber (ADF), neutral detergent fiber (NDF), amino acids, fatty acids (C8-C22), trypsin inhibitors, phytic acid, lectin, isoflavones (daidzein, glycitein, and genistein), vitamin E, raffinose, and stachyose. Each analysis was based on published analytical methods that were approved by the Study Director. The analytical data generated by EPL-BAS, including a summary of the methods used, EPL-BAS SOP or method mnemonics, literature references, limits of quantitation, and the reference standards used can be found in the analytical sub-report in Appendix 1 (EPL-BAS study number 115G457).

## 7.0 Control of Bias

To control and/or minimize bias during compositional analysis, the samples were analyzed in the order specified by a computer-generated randomized list. The Study Director generated the randomized sample list and forwarded it to EPL-BAS prior to analysis.

## 8.0 Statistical Analysis

### 8.1 Data Processing

After compositional analyses were performed at EPL-BAS, data spreadsheets were forwarded to Monsanto Company. The data were reviewed, formatted, and sent to Certus International, Inc. for statistical analysis. A statistical sub-report was generated by Certus International, Inc. and sent to Monsanto Company (see Appendix 2).

The following formulas were used for re-expression of composition data for statistical analysis:

Component	From (X)	To	Formula <sup>1</sup>
Proximates (excluding Moisture), Fiber, Phytic Acid, Raffinose, Stachyose, Amino Acids (AA)	% FW	% DW	X/d
Isoflavones	mg/kg FW	mg/kg DW	X/d
Trypsin Inhibitor	TIU/mg FW	TIU/mg DW	X/d
Vitamin E	mg/kg FW	mg/100g DW	X/(10*d)

Fatty Acids (FA)	% FW	% Total FA	$(100)X_j/\Sigma X$ , for each FA <sub>j</sub> where $\Sigma X$ is over all the FA
<sup>1</sup> 'X' is the individual sample value; 'd' is the fraction of the sample that is dry matter.			

In order to complete a statistical analysis for a compositional analyte in this study, at least 50% of the values for an analyte had to be greater than the assay limit of quantitation (LOQ). Analytes with more than 50% of observations below the assay LOQ were excluded from summaries and analysis. The following nine analytes with more than 50% of observations below the assay LOQ were excluded from statistical analysis: 8:0 caprylic acid, 12:0 lauric acid, 14:1 myristoleic acid, 15:0 pentadecanoic acid, 15:1 pentadecenoic acid, 18:3 gamma linolenic acid, 20:3 eicosatrienoic acid, 20:4 arachidonic acid, and 22:1 erucic acid.

Otherwise, individual analyses that were below the LOQ were assigned a value equal to half the LOQ. The following analytes were assigned values:

		Obs. Below LOQ				
Analyte	Units	N	(%)	Total N	LOQ	Value Assigned
<b>Seed Fatty Acid</b>						
17:1 Heptadecenoic Acid	% FW	8	12.7	63	0.0051	0.0026
20:2 Eicosadienoic Acid	% FW	9	14.3	63	0.0052	0.0026

Individual samples assigned a value are presented in Listing 2 of the Statistical Sub-Report.

A PRESS residual is the difference between any value and its predicted value from a statistical model that excludes the data point. The studentized version scales these residuals so that the values tend to have a standard normal distribution when outliers are absent. Thus, most values are expected to be between  $\pm 3$ . Extreme data points that are also outside of the  $\pm 6$  studentized PRESS residual range are considered for exclusion, as outliers, from the final analyses. The following results had PRESS residual values outside of  $\pm 6$  range:

Site	Rep	Description	Analyte	ID	Sent Value	Value	PRESS Std Residual
<b>Forage Proximate</b>							
GA	2	CMC 5901COC	Moisture	07017101-00329	38.6	38.6000	-11.4687
<b>Seed Proximate</b>							
NC	2	MON 87701	Total Fat	07017101-00627	33.7	36.3656	9.6571

Both identified values were considered outliers and were removed from further analysis. Because moisture content is required for unit re-expression of forage composition data, all additional forage composition data associated with this sample were also removed from the dataset for statistical evaluation.

The outlier test procedure was reapplied to all remaining moisture and total fat data to detect potential outliers that were masked in the first analysis. No further PRESS residuals were outside of  $\pm 6$  range.

## 8.2 Statistical Methodology

All soybean compositional analysis components were statistically analyzed using a mixed model analysis of variance. The five replicated sites were analyzed both separately and combined. Individual replicated site analyses used model (1).

$$(1) \quad Y_{ij} = U + T_i + B_j + e_{ij},$$

where  $Y_{ij}$  = unique individual observation,  $U$  = overall mean,  $T_i$  = substance effect,  $B_j$  = random block effect, and  $e_{ij}$  = residual error.

Combined site analyses used model (2).

$$(2) \quad Y_{ijk} = U + T_i + L_j + B(L)_{jk} + LT_{ij} + e_{ijk},$$

where  $Y_{ijk}$  = unique individual observation,  $U$  = overall mean,  $T_i$  = substance effect,  $L_j$  = random location effect,  $B(L)_{jk}$  = random block within location effect,  $LT_{ij}$  = random location by substance interaction effect, and  $e_{ijk}$  = residual error.

A tolerance interval is an interval that one can claim, with a specified degree of confidence, contains at least a specified proportion,  $p$ , of an entire sampled population for the parameter measured.

For each compositional analyte, 99% tolerance intervals were calculated that are expected to contain, with 95% confidence, 99% of the quantities expressed in the population of commercial conventional reference substances. Each tolerance interval estimate was based upon one observation per unique reference substance. Because negative quantities are not possible, negative calculated lower tolerance bounds were set to zero.

SAS<sup>®</sup> software was used to generate all summary statistics and perform all analyses. Report tables present p-values from SAS as either <0.001 or the actual value truncated to three decimal places.

## **9.0 Results and Discussion**

The composition of forage and seed of MON 87701 was analyzed and statistically compared to the conventional control, A5547. Tolerance intervals calculated from the commercial conventional reference substances were also established for each compositional analyte. Sixty-four different analytes were evaluated to determine the compositional profile of the T/C/R substances. The compositional analysis data for the T/C/R substances can be found in Appendix 1.

Each individual analyte for the test substance was compared to that of the conventional control for each of the five field sites and for the combination of all five sites. Of the 64 analytes, nine fatty acids had greater than 50% of the analytical values that were below the limit of quantitation. These analytes were not included in the statistical analyses.

A statistical summary was generated for each of the remaining 55 compositional analytes. The overall data set was examined for evidence of biologically meaningful changes. Least square means, standard errors, and the range of observed values for the test and control substances are included in Appendix 2. Each mean test value that had a significant difference from the control ( $p < 0.05$ ) was compared to the 99% tolerance interval generated from the commercial conventional reference substances in this study.

A summary of the significant differences ( $p < 0.05$ ) for MON 87701 can be found in Table 1. Table 2 presents the range of values obtained from the published scientific literature and the ILSI Crop Composition Database (ILSI, 2006).

### **9.1 Composition of Forage and Seed from MON 87701 Compared to the Conventional Control**

Overall, the results of the analyses of both forage and seed samples showed that there were statistically significant differences ( $p < 0.05$ ) between MON 87701 and the conventional control for 15 of the 55 combined site analyses and 32 of the 275 comparisons from the individual site analyses. The mean values of MON 87701 with statistically significant differences were within the calculated 99% tolerance interval for the population of the commercial conventional reference substances. The range of values for analytes observed to be different between the test and control fell within the 99% tolerance interval with one exception, one carbohydrate value for the test substance was slightly below the tolerance interval (Table 1).

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<sup>®</sup> SAS is a registered trademark of SAS Institute Inc.

Statistical analyses of forage for MON 87701 from the combined site analysis showed that there were no statistically significant differences ( $p \geq 0.05$ ) between MON 87701 and the control. Only one individual site comparison for NDF was observed to be significantly different ( $p < 0.05$ ). The mean and range of values obtained for NDF for this site were within the 99% tolerance interval for the population of commercial conventional reference substances. In addition, since NDF was not found to be significantly different at the other four sites or in the combined site analysis, this difference at one site is not considered to be biologically meaningful from a food and feed safety or nutritional perspective.

Statistical analyses of seed for MON 87701 from the combined site showed significant differences ( $p < 0.05$ ) for 15 analytes. These included values for alanine, glycine, histidine, isoleucine, leucine, lysine, serine, threonine, valine, 22:0 behenic acid, carbohydrates, protein, vitamin E, trypsin inhibitor, and daidzein. For four of these analytes (histidine, 22:0 behenic acid, vitamin E, and daidzein), there were statistically significant differences in more than one of the individual sites, and for five of these analytes (isoleucine, leucine, valine, carbohydrates, and trypsin inhibitor), there were statistical differences in only one of the individual sites. For the remaining six analytes in the seed, statistical differences were only found in the combined site analysis. Statistical analyses of the seed for MON 87701 from the five individual sites showed that seven analytes were observed to be significantly different ( $p < 0.05$ ) from the control in more than one of the individual sites and 15 analytes were observed to be significantly different from the control in only one of the individual sites. Where statistically significant differences ( $p < 0.05$ ) were observed between MON 87701 and its conventional control, the mean and ranges of values for MON 87701 were within the 99% tolerance interval with the exception of one carbohydrate value. This carbohydrate value was not considered representative of MON 87701 since it was observed at only one site. Therefore, these differences are not observed consistently across all sites and therefore are not considered to be biologically meaningful from a food and feed safety or nutritional perspective.

## **10.0 Conclusions**

Compositional data were generated and statistical analyses performed on the forage and seed from MON 87701, a conventional control, and 20 commercial conventional soybean varieties. The overall dataset was evaluated for evidence of biologically meaningful changes from a food and feed safety or nutritional perspective. Statistical analysis of the composition of forage and seed from the five individual sites and the combined site showed that for 283 (85.8%) of the 330 comparisons made between MON 87701 and the control, mean analyte values were not statistically different ( $p \geq 0.05$ ). Although, for some of these comparisons, a statistically significant difference ( $p < 0.05$ ) was noted between MON 87701 and the control substance, in those instances the composition mean values

for the MON 87701 were within the calculated 99% tolerance interval for the population of commercial conventional reference substances and in most instances were not consistently observed across sites and therefore, were not regarded as biologically meaningful. The values for the test substance were similar to those for control and reference substances. These values were also comparable to published scientific literature and the ILSI Crop Composition Database, further supporting the conclusion that soybean forage and seed produced from MON 87701 are compositionally equivalent to conventional soybean.

### **11.0 References**

Armstrong, T. 2008. Field Production of Tissues from Insect Protected Soybean MON 87701 and Insect Protected MON 87701 × Glyphosate Tolerant Soybean MON 89788 Grown in the United States during 2007. Monsanto Technical Report MSL0021397. St. Louis, MO.

ILSI. 2006. International Life Sciences Institute Crop Composition Database. Version 3.0. <http://www.cropcomposition.org>. Accessed January 2 and 3 and July 22, 2008.

Lundry, D.R., Ridley, W. P., Meyer, J.J., Riordan, S.G., Nemeth, M.A., Trujillo, W.A., Breeze, M.L., and Sorbet, R. 2008. Composition of Grain, Forage, and Processed Fractions from Second –generation Glyphosate-Tolerant Soybean, MON 89788, Is Equivalent to That of Conventional Soybean (*Glycine max* L.). *J. Agric. Food Chem.*, 56:4611-4622.

SAS Software Release 9.1 (TS1M3). Copyright (c) 2002-2003 by SAS Institute Inc., Cary, NC, USA.

### **12.0 Protocol Amendments/Deviations**

There were no protocol amendments/deviations in this study.

**Table 1. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in Combined-Site Analysis</b>							
<b>Seed Amino Acid (% DW)</b>							
Alanine (% DW)	Combined Site	1.72	1.69	2.15	0.027	[1.66 - 1.84]	[1.49, 2.02]
Glycine (% DW)	Combined Site	1.75	1.70	2.88	0.007	[1.63 - 1.89]	[1.49, 2.09]
Histidine (% DW)	Combined Site	1.12	1.08	3.94	<0.001	[1.05 - 1.18]	[0.94, 1.31]
Isoleucine (% DW)	Combined Site	1.81	1.76	2.94	0.031	[1.68 - 1.99]	[1.54, 2.14]
Leucine (% DW)	Combined Site	3.04	2.94	3.23	0.046	[2.82 - 3.36]	[2.64, 3.52]
Lysine (% DW)	Combined Site	2.74	2.62	4.63	0.012	[2.48 - 2.99]	[2.05, 3.47]
Serine (% DW)	Combined Site	2.03	1.96	3.08	0.004	[1.90 - 2.19]	[1.75, 2.38]
Threonine (% DW)	Combined Site	1.60	1.55	2.95	0.024	[1.50 - 1.72]	[1.40, 1.83]
Valine (% DW)	Combined Site	1.92	1.86	2.85	0.040	[1.80 - 2.07]	[1.64, 2.22]
<b>Seed Fatty Acid (% Total FA)</b>							
22:0 Behenic Acid (% Total FA)	Combined Site	0.56	0.54	4.33	0.022	[0.46 - 0.65]	[0.30, 0.67]

**Table 1. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in Combined-Site Analysis</b>							
<b>Seed Proximate</b>							
Carbohydrates (% DW)	Combined Site	34.22	36.44	-6.10	0.037	[21.58 - 39.61]	[28.17, 40.99]
Protein (% DW)	Combined Site	39.27	37.80	3.87	0.023	[36.49 - 42.23]	[35.30, 45.38]
<b>Seed Vitamin</b>							
Vitamin E (mg/100g DW)	Combined Site	7.69	6.24	23.26	<0.001	[6.36 - 9.62]	[0, 11.09]
<b>Seed Antinutrient</b>							
Trypsin Inhibitor (TIU/mg DW)	Combined Site	26.06	28.57	-8.79	0.014	[21.65 - 32.53]	[13.58, 46.02]
<b>Seed Isoflavone</b>							
Daidzein (mg/kg DW)	Combined Site	667.54	604.88	10.36	0.040	[188.96 - 983.26]	[0, 1585.14]
<b>Statistical Differences Observed in More than One Individual Site</b>							
<b>Seed Amino Acid (% DW)</b>							
Arginine (% DW)	Site GA	2.80	2.57	8.75	0.011	[2.72 - 2.91]	[2.22, 3.25]
	Site IL	2.61	2.44	6.88	0.045	[2.49 - 2.70]	
Histidine (% DW)	Site GA	1.15	1.09	5.17	0.019	[1.13 - 1.16]	[0.94, 1.31]
	Site IL	1.11	1.05	4.90	0.036	[1.09 - 1.13]	

**Table 1. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in More than One Individual Site</b>							
<b>Seed Amino Acid (% DW)</b>							
Tyrosine (% DW)	Site AL	1.32	1.20	9.95	0.034	[1.28 - 1.33]	[0.85, 1.48]
	Site IL	1.10	1.01	9.14	0.003	[1.07 - 1.13]	
<b>Seed Fatty Acid (% Total FA)</b>							
22:0 Behenic Acid (% Total FA)	Site AR	0.47	0.46	3.08	0.037	[0.46 - 0.48]	[0.30, 0.67]
	Site GA	0.60	0.55	8.24	0.029	[0.58 - 0.62]	
<b>Seed Vitamin</b>							
Vitamin E (mg/100g DW)	Site AR	6.88	5.03	36.69	<0.001	[6.77 - 7.08]	[0, 11.09]
	Site GA	9.16	7.77	17.81	0.011	[8.51 - 9.62]	
	Site IL	6.72	5.31	26.56	<0.001	[6.36 - 7.27]	
	Site NC	7.83	6.14	27.55	0.017	[7.59 - 8.19]	
<b>Seed Antinutrient</b>							
Stachyose (% DW)	Site AL	1.84	2.37	-22.36	0.024	[1.83 - 1.89]	[0.99, 7.93]
	Site NC	4.56	5.50	-17.12	0.006	[4.32 - 4.72]	

**Table 1. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in More than One Individual Site</b>							
<b>Seed Isoflavone</b>							
Daidzein (mg/kg DW)	Site AR	767.90	658.21	16.67	0.031	[747.32 - 793.95]	[0, 1585.14]
	Site IL	890.96	803.42	10.90	0.042	[834.82 - 983.26]	
<b>Statistical Differences Observed in One Site</b>							
<b>Forage Fiber</b>							
Neutral Detergent Fiber (% DW)	Site AR	49.83	38.62	29.02	0.023	[46.69 - 55.99]	[21.51, 66.01]
<b>Seed Amino Acid (% DW)</b>							
Isoleucine (% DW)	Site GA	1.81	1.74	4.23	0.029	[1.77 - 1.84]	[1.54, 2.14]
Leucine (% DW)	Site GA	3.04	2.91	4.59	0.014	[2.98 - 3.09]	[2.64, 3.52]
Proline (% DW)	Site GA	2.00	1.94	3.56	0.025	[1.99 - 2.02]	[1.73, 2.35]
Tryptophan (% DW)	Site NC	0.49	0.47	4.75	0.006	[0.47 - 0.51]	[0.43, 0.59]
Valine (% DW)	Site GA	1.91	1.84	3.96	0.035	[1.88 - 1.94]	[1.64, 2.22]
<b>Seed Fatty Acid (% Total FA)</b>							
16:0 Palmitic Acid (% Total FA)	Site IL	11.53	11.71	-1.48	0.025	[11.39 - 11.63]	[8.88, 13.53]
16:1 Palmitoleic Acid (% Total FA)	Site NC	0.086	0.10	-13.81	0.012	[0.084 - 0.089]	[0.037, 0.15]

**Table 1. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in One Site</b>							
<b>Seed Fatty Acid (% Total FA)</b>							
18:0 Stearic Acid (% Total FA)	Site NC	4.42	4.79	-7.62	0.038	[4.34 - 4.49]	[1.88, 6.25]
18:1 Oleic Acid (% Total FA)	Site NC	19.78	21.60	-8.42	0.047	[19.21 - 20.21]	[5.01, 42.01]
18:2 Linoleic Acid (% Total FA)	Site NC	54.21	52.62	3.03	0.046	[53.89 - 54.61]	[38.57, 66.94]
20:1 Eicosenoic Acid (% Total FA)	Site GA	0.24	0.22	5.27	0.035	[0.23 - 0.24]	[0.16, 0.33]
<b>Seed Proximate</b>							
Ash (% DW)	Site IL	5.42	5.29	2.42	0.039	[5.20 - 5.55]	[3.74, 6.45]
Carbohydrates (% DW)	Site IL	36.65	39.17	-6.45	0.024	[35.60 - 37.72]	[28.17, 40.99]
<b>Seed Antinutrient</b>							
Trypsin Inhibitor (TIU/mg DW)	Site GA	23.28	29.27	-20.48	0.005	[21.65 - 25.24]	[13.58, 46.02]
<b>Seed Isoflavone</b>							
Genistein (mg/kg DW)	Site AR	807.35	680.07	18.72	0.007	[771.77 - 840.99]	[0, 1352.86]

<sup>1</sup>DW = dry weight; FA = fatty acid.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial conventional reference substances. Negative limits were set to zero.

**Table 2. Literature and ILSI Ranges for Components in Soybean Forage and Seed**

<b>Forage Tissue/Component<sup>1</sup></b>	<b>Literature Range<sup>2</sup></b>	<b>ILSI Range<sup>3</sup></b>
<b>Proximate (% dw)</b>		
Ash	5.36 – 8.91	6.72 – 10.78
Carbohydrates	62.25 – 72.28	59.8 – 74.7
Moisture (% fw)	68.50 – 78.40	73.5 – 81.6
Protein	16.48 – 24.29	14.38 – 24.71
Total Fat	2.65 – 9.87	1.30 – 5.13
<b>Fiber (% dw)</b>		
Acid Detergent Fiber (ADF)	23.86 – 50.69	not available
Neutral Detergent Fiber (NDF)	19.61 – 43.70	not available
<b>Seed Tissue Component<sup>1</sup></b>	<b>Literature Range<sup>2</sup></b>	<b>ILSI Range<sup>3</sup></b>
<b>Proximates (% dw)</b>		
Ash	4.61 – 6.32	3.89 – 6.99
Carbohydrates	32.75 – 40.98	29.6 – 50.2
Moisture (% fw)	6.24 – 11.10	4.7 – 34.4
Protein	34.78 – 43.35	33.19 – 45.48
Total Fat	14.62 – 20.68	8.10 – 23.56
<b>Fiber (% dw)</b>		
Acid Detergent Fiber (ADF)	9.22 – 26.26	7.81 – 18.61
Neutral Detergent Fiber (NDF)	10.79 – 23.90	8.53 – 21.25
<b>Amino Acids (% dw)</b>		
Alanine	1.62 – 1.89	1.51-2.10
Arginine	2.57 – 3.27	2.29-3.40
Aspartic acid	4.16 – 5.02	3.81-5.12
Cystine/Cysteine	0.52 – 0.69	0.37-0.81
Glutamic acid	6.52 – 8.19	5.84-8.20
Glycine	1.59 – 1.90	1.46-2.00
Histidine	0.96 – 1.13	0.88-1.18
Isoleucine	1.59 – 2.00	1.54-2.08
Leucine	2.79 – 3.42	2.59-3.62
Lysine	2.36 – 2.77	2.29-2.84
Methionine	0.45 – 0.63	0.43-0.68
Phenylalanine	1.82 – 2.29	1.63-2.35
Proline	1.83 – 2.23	1.69-2.28
Serine	1.95 – 2.42	1.11-2.48
Threonine	1.44 – 1.73	1.14-1.86
Tryptophan	0.30 – 0.48	0.36-0.50
Tyrosine	1.27 – 1.53	1.02-1.61
Valine	1.68 – 2.09	1.60-2.20

**Table 2. Literature and ILSI Ranges for Components in Soybean Forage and Seed (cont.)**

<b>Forage Tissue/Component<sup>1</sup></b>	<b>Literature Range<sup>2</sup></b>	<b>ILSI Range<sup>3</sup></b>
<b>Fatty Acids</b>	<b>(% dw)</b>	<b>(% total)</b>
8:0 Caprylic	not available	0.148 – 0.148
10:0 Capric	not available	not available
12:0 Lauric	not available	0.082 – 0.132
14:0 Myristic	not available	0.071 – 0.238
14:1 Myristoleic	not available	0.121 – 0.125
15:0 Pentadecanoic	not available	not available
15:1 Pentadecenoic	not available	not available
16:0 Palmitic	1.44 – 2.35	9.55 – 15.77
16:1 Palmitoleic	not available	0.086 – 0.194
17:0 Heptadecanoic	not available	0.085 – 0.146
17:1 Heptadecenoic	not available	0.073 – 0.087
18:0 Stearic	0.54 – 1.12	2.70 – 5.88
18:1 Oleic	2.87 – 8.82	14.3 – 32.2
18:2 Linoleic	6.48 – 11.6	42.3 – 58.8
18:3 Gamma Linolenic	not available	not available
18:3 Linolenic	0.72 – 2.16	3.00 – 12.52
20:0 Arachidic	0.04 – 0.7	0.163 – 0.482
20:1 Eicosenoic	0.026 – 0.057	0.140 – 0.350
20:2 Eicosadienoic	not available	0.077 – 0.245
20:3 Eicosatrienoic	not available	not available
20:4 Arachidonic	not available	not available
22:0 Behenic	0.044 – 0.073	0.277 – 0.595
22:1 Erucic	not available	not available
<b>Vitamins (mg/100g dw)</b>		
Vitamin E	1.29 – 4.80	0.19-6.17
<b>Anti-Nutrients</b>		
Lectin (H.U./mg fw)	0.45 – 9.95	0.09 – 8.46
Trypsin Inhibitor (TIU/mg dw)	20.79 – 59.03	19.59 – 118.68
Phytic Acid (% dw)	0.41 – 1.92	0.63 – 1.96
<b>Isoflavones</b>	<b>(µg/g dw)</b>	<b>(mg/kg dw)</b>
Daidzein	224.03 – 1485.52	60.0 – 2453.5
Genistein	338.24 – 1488.89	144.3 – 2837.2
Glycitein	52.72 – 298.57	15.3 – 310.4
<b>Bio-Actives (% dw)</b>		
Raffinose	0.26 – 0.84	0.21 – 0.66
Stachyose	1.53 – 2.98	1.21 – 3.50

<sup>1</sup>fw=fresh weight; dw=dry weight

<sup>2</sup>Lundry et al. (2008)

<sup>3</sup>ILSI Crop Composition Database, (2006)

Conversions: % dw x 10<sup>4</sup> = µg/g dw; mg/g dw x 10<sup>3</sup> = mg/kg dw; mg/100g dw x 10 = mg/kg dw; g/100g dw x 10 = mg/g dw

**Appendix 1: EPL-BAS Analytical Sub-Report**

**Compositional Analyses of Forage and Seed Collected from  
MON 87701 Grown in United States during 2007**

The following 69 pages are the analytical sub-report  
Pages 28 —96

**Sponsor**

Monsanto Company  
800 N. Lindbergh Blvd.  
St. Louis, MO 63167

**ANALYTICAL SUBREPORT**

**Breakout Subreport Title**

Compositional Analyses of Forage and Seed Collected from  
MON 87701 Grown in United States

**Author**

Michelle N. Smith, B.A.

**Subreport Completion Date**

October 14, 2008

**Breakout Report Completion Date**

October 14, 2008

**Performing Laboratory**

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**EPL-BAS Study Identification**

115G457

**Monsanto Study Number**

REG-08-065

### QUALITY CONTROL REVIEW

This report has been reviewed by the Principal Investigator of EPL Bio-Analytical Services (EPL-BAS) and accurately reflects the raw data. The Principal Investigator ensures the quality control review was conducted and ensures this breakout subreport reflects all information for test substance MON 87701 plus the control and reference data generated under Monsanto study number REG-08-065.

Michelle N. Smith 10/14/08

Michelle N. Smith, B.A.

Date

Principal Investigator

EPL Bio-Analytical Services

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## STUDY IDENTIFICATION

Test Substance: MON 87701

Original Sponsor Study No.: REG-08-065

Sponsor Study Title: Compositional Analyses of Forage and Seed Collected from MON 87701 and MON 87701 x MON 89788 Grown in United States during 2007

Breakout Report Title: Compositional Analyses of Forage and Seed Collected from MON 87701 Grown in United States during 2007

Sponsor: Monsanto Company  
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Study Timetable

Study Initiation Date:	March 11, 2008
Subreport Completion Date:	October 14, 2008
Breakout Report Issue Date:	October 14, 2008

**EPL-BAS KEY PERSONNEL**

Michelle N. Smith, B.A.  
Robin King, B.A.  
Angela L. Dawson, B.S.

Principal Investigator  
General Manager  
Quality Assurance Specialist

## **INTRODUCTION**

The purpose of this portion of the study was to generate data for compositional analyses of forage and seed collected from MON 87701, control substance, and 20 reference substances. This subreport contains data specific to one test substance plus all control and reference data from the larger, single subreport, and is considered a breakout subreport. The larger subreport, Monsanto study number REG-08-065 should be referenced for additional study details.

## **REGULATORY COMPLIANCE**

This report describes compositional analysis of MON 87701 (test substance), a control, and reference substances generated under Monsanto study REG-08-065. The Statement of Compliance from study REG-08-065 (EPL-BAS study 115G457) is provided below.

This portion of the study was conducted in compliance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and the Good Laboratory Practice (GLP) Standards as set forth in Title 40 of the US Code of Federal Regulations Part 160 (40 CFR Part 160). This study was conducted in compliance with all requirements of section §160.135(b).

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**TEST, CONTROL, AND REFERENCE SUBSTANCES**

**Identification**

**Test Substance**

The test substance was MON 87701. Forage and seed tissues were evaluated. The test substance was described as:

<b>Test Substance #</b>	<b>Material Name/Hybrid</b>	<b>Monsanto ID Number</b>	<b>Field Location (Code)</b>
Test 1	MON 87701	GLP-0612-17898-S	AL, AR, GA, IL, NC

**Control Substance**

The control substance was a conventional soybean variety with similar genetic background to the test substance. Forage and seed tissues were evaluated. The control substance was described as:

<b>Control Substance #</b>	<b>Material Name/Hybrid</b>	<b>Monsanto ID Number</b>	<b>Field Location (Code)</b>
Control 1	A5547	GLP-0612-17895-S	AL, AR, GA, IL, NC

**Reference Substances**

The reference substances were conventional commercial soybean varieties. Forage and seed tissues were evaluated. The reference substances were described as:

<b>Reference Substance #</b>	<b>Material Name/Hybrid</b>	<b>Monsanto ID Number</b>	<b>Field Location (Code)</b>
Reference 1	A5843	GLP-0702-18243-S	AL
Reference 2	A5959	GLP-0702-18245-S	AL
Reference 3	CMA 5804AOC	GLP-0702-18244-S	AL
Reference 4	H6686	GLP-0702-18247-S	AL
Reference 5	UA 4805	GLP-0702-18123-S	AR
Reference 6	Ozark	GLP-0702-18124-S	AR
Reference 7	Anand	GLP-0702-18122-S	AR
Reference 8	Hornbeck C5894	GLP-0702-18125-S	AR
Reference 9	A5560	GLP-0702-18242-S	GA
Reference 10	CMC 5901COC	GLP-0702-18246-S	GA
Reference 11	LEE 74	GLP-0702-18248-S	GA
Reference 12	A5403	GLP-0702-18241-S	GA
Reference 13	A4922	GLP-0702-18234-S	IL
Reference 14	H4994	GLP-0702-18235-S	IL
Reference 15	H5218	GLP-0702-18236-S	IL
Reference 16	A5427	GLP-0702-18238-S	IL
Reference 17	DP 5989	GLP-0702-18126-S	NC
Reference 18	Hutcheson	GLP-0703-18396-S	NC
Reference 19	USG 5601T	GLP-0703-18402-S	NC
Reference 20	Fowler	GLP-0703-18395-S	NC

**Characterization**

The test, control, and reference substances were confirmed by the sponsor using chain-of-custody records. Information on characterization that defined the test, control, and reference substances was the responsibility of the Sponsor.

**Storage/Retention**

Samples were received frozen on March 19, 2008. Samples were stored at approximately -20°C when not needed for laboratory analysis. A freezer log was kept to monitor

movement of samples in and out of the freezer. Seed samples were received ground and were further processed and homogenized using a coffee grinder until the entire sample passed through a 20-mesh screen. Forage samples were received ground and did not require further processing.

### **Safety Precautions**

Safety precautions were taken as required by EPL-BAS standard operating procedures and the Safety Manual.

## **SAMPLE RECEIPT AND HANDLING**

The samples were entered into the EPL-BAS Laboratory Information Management System (LIMS) with unique LIMS job numbers. Printed reports were generated which provided correlation between the EPL-BAS job numbers and the Sponsor sample identifiers.

## **PROCEDURES**

This study was conducted in accordance with the study protocol (Monsanto Study No. REG-08-065). Appendix A of this subreport contains summaries of the forage and soy seed analytical methods used in this study and the SOP number for each analytical method.

The samples were analyzed in a random order to minimize assay bias. The Study Director provided the analysis order. Quality control samples and fortified samples were analyzed to judge the acceptability of each set of samples. The quality control sample was used for methods in which an analytical reference substance was not used in the analysis. For methods in which analytical reference standards were used, the first sample of each set was fortified with a known amount of the reference substance. The quality control sample from one protein set initially failed based on the acceptance criteria. The set was accepted based on a low CV and that the sample results were in historical range. The quality control failure had no impact on the study. Several fatty acid samples had low internal spike levels. The samples were re-extracted and the internal spike results passed. Acceptance criteria for each analytical method were approved by the Study Director.

## **STATISTICAL METHODS**

No statistical analysis of the data was performed at EPL-BAS.

## **MAINTENANCE OF RAW DATA AND RECORDS**

A final analytical breakout subreport, including a compositional analyses summary spreadsheet accepted by the EPL-BAS Quality Assurance Unit, was sent to the sponsor. All data relating to or generated by the project, including (if applicable) a copy of the protocol and amendments, a copy of the final analytical subreport, results, laboratory notebooks, applicable SOP lists and any other information or records relating to the project were retained in the archives of EPL-BAS in accordance with 40 CFR Part 160. All original or copies of data will be sent to the Sponsor within ten years after signing of the final subreport. The supporting records retained at EPL-BAS, but not archived with the study data, include the following items:

- Study personnel- training records
- Storage temperature records
- Instrument calibration and maintenance records
- Durable media records
- Standard operating procedures
- Standard logbooks

## **RESULTS**

The results for all forage control substance analyses are presented in Table 1. The results for all forage reference and test substance analyses are presented in Tables 2 and 3, respectively. The results for all seed control substance analyses are presented in Table 4. The results for all seed reference and test substance analyses are presented in Tables 5 and 6, respectively. Results are presented on a fresh weight basis.

**SIGNATURE**

Michelle N. Smith

Michelle N. Smith, B.A.  
Principal Investigator  
EPL Bio-Analytical Services

10/14/08

Date

**Table 1. Compositional Analyses of Forage Control Substance**

<b>Material Name</b>	A5547	A5547	A5547
<b>Field Site</b>	AL	AL	AL
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00049	07017101-00050	07017101-00051
<b>EPL-BAS Job ID</b>	080324-0261	080324-0282	080324-0266
<b>Proximates (%)</b>			
Moisture	77.7	75.0	78.1
Protein	5.1936	4.4846	4.0039
Total Fat	1.25	1.68	1.23
Ash	1.66	1.56	1.78
Acid Detergent Fiber	9.38	9.36	8.72
Neutral Detergent Fiber	13.2	10.7	9.21
Carbohydrates	14.2	17.3	14.9

**Table 1. Compositional Analyses of Forage Control Substance (Continued)**

<b>Material Name</b>	A5547	A5547	A5547
<b>Field Site</b>	AR	AR	AR
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00181	07017101-00182	07017101-00183
<b>EPL-BAS Job ID</b>	080324-0262	080324-0296	080324-0303
<b>Proximates (%)</b>			
Moisture	72.2	72.6	72.6
Protein	5.1279	4.6939	4.5319
Total Fat	1.47	1.18	1.75
Ash	1.95	1.53	1.98
Acid Detergent Fiber	10.3	8.73	10.8
Neutral Detergent Fiber	10.6	10.2	11.1
Carbohydrates	19.2	20.0	19.1

**Table 1. Compositional Analyses of Forage Control Substance (Continued)**

<b>Material Name</b>	A5547	A5547	A5547
<b>Field Site</b>	GA	GA	GA
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00313	07017101-00314	07017101-00315
<b>EPL-BAS Job ID</b>	080324-0293	080324-0313	080324-0302
<b>Proximates (%)</b>			
Moisture	70.8	69.4	70.2
Protein	4.8682	4.3438	4.7271
Total Fat	2.11	2.10	1.71
Ash	1.57	1.56	1.57
Acid Detergent Fiber	10.6	8.39	10.3
Neutral Detergent Fiber	13.6	13.9	10.2
Carbohydrates	20.6	22.6	21.8

**Table 1. Compositional Analyses of Forage Control Substance (Continued)**

<b>Material Name</b>	A5547	A5547	A5547
<b>Field Site</b>	IL	IL	IL
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00445	07017101-00446	07017101-00447
<b>EPL-BAS Job ID</b>	080324-0271	080324-0276	080324-0279
<b>Proximates (%)</b>			
Moisture	77.1	76.5	76.3
Protein	3.3741	3.6183	3.4307
Total Fat	1.01	0.995	1.10
Ash	1.49	1.50	1.55
Acid Detergent Fiber	7.70	9.23	8.89
Neutral Detergent Fiber	14.7	10.8	10.2
Carbohydrates	17.0	17.4	17.6

**Table 1. Compositional Analyses of Forage Control Substance (Continued)**

<b>Material Name</b>	A5547	A5547
<b>Field Site</b>	NC	NC
<b>Replicate</b>	rep 2	rep 3
<b>Sample ID</b>	07017101-00578	07017101-00579
<b>EPL-BAS Job ID</b>	080324-0295	080324-0274
<b>Proximates (%)</b>		
Moisture	71.5	70.2
Protein	5.6029	4.7984
Total Fat	1.92	1.53
Ash	1.69	1.79
Acid Detergent Fiber	8.99	12.4
Neutral Detergent Fiber	15.7	12.7
Carbohydrates	19.3	21.7

**Table 2. Compositional Analyses of Forage Reference Substances**

<b>Material Name</b>	<b>A5843</b>	<b>A5959</b>	<b>CMA 5804AOC</b>	<b>H6686</b>
<b>Field Site</b>	AL	AL	AL	AL
<b>Replicate</b>	rep 3	rep 3	rep 3	rep 3
<b>Sample ID</b>	07017101-00063	07017101-00066	07017101-00069	07017101-00072
<b>EPL-BAS Job ID</b>	080324-0277	080324-0263	080324-0290	080324-0257
<b>Proximates (%)</b>				
Moisture	76.0	76.8	70.0	76.0
Protein	4.0549	4.0064	4.3896	3.6431
Total Fat	1.32	1.09	1.52	0.835
Ash	1.53	1.79	1.60	1.56
Acid Detergent Fiber	9.02	10.8	9.81	8.45
Neutral Detergent Fiber	10.9	11.0	11.5	11.7
Carbohydrates	17.1	16.3	22.5	17.9

**Table 2. Compositional Analyses of Forage Reference Substances (Continued)**

<b>Material Name</b>	UA 4805	Ozark	Hornbeck C5894	Anand
<b>Field Site</b>	AR	AR	AR	AR
<b>Replicate</b>	rep 3	rep 3	rep 3	rep 3
<b>Sample ID</b>	07017101-00195	07017101-00198	07017101-00201	07017101-00204
<b>EPL-BAS Job ID</b>	080324-0255	080324-0258	080324-0270	080324-0294
<b>Proximates (%)</b>				
Moisture	74.2	73.7	75.7	80.2
Protein	5.4668	5.2275	4.1975	4.5375
Total Fat	1.55	1.41	1.03	1.56
Ash	1.61	1.42	1.31	1.69
Acid Detergent Fiber	8.79	7.77	11.5	7.97
Neutral Detergent Fiber	9.73	13.7	10.9	9.87
Carbohydrates	17.1	18.3	17.7	12.0

**Table 2. Compositional Analyses of Forage Reference Substances (Continued)**

<b>Material Name</b>	<b>A5560</b>	<b>CMC 5901COC</b>	<b>LEE 74</b>	<b>A5403</b>
<b>Field Site</b>	GA	GA	GA	GA
<b>Replicate</b>	rep 3	rep 2	rep 3	rep 3
<b>Sample ID</b>	07017101-00327	07017101-00329	07017101-00333	07017101-00336
<b>EPL-BAS Job ID</b>	080324-0260	080324-0298	080324-0254	080324-0308
<b>Proximates (%)</b>				
Moisture	67.8	38.6	67.9	67.7
Protein	6.1505	14.2795	4.0708	5.5461
Total Fat	2.10	5.47	1.65	1.89
Ash	1.82	4.19	1.53	1.63
Acid Detergent Fiber	10.2	26.2	10.2	9.04
Neutral Detergent Fiber	13.9	31.9	13.2	10.0
Carbohydrates	22.1	37.5	24.8	23.3

**Table 2. Compositional Analyses of Forage Reference Substances (Continued)**

<b>Material Name</b>	A4922	H4994	H5218	A5427
<b>Field Site</b>	IL	IL	IL	IL
<b>Replicate</b>	rep 3	rep 3	rep 3	rep 3
<b>Sample ID</b>	07017101-00459	07017101-00462	07017101-00465	07017101-00468
<b>EPL-BAS Job ID</b>	080324-0316	080324-0278	080324-0310	080324-0265
<b>Proximates (%)</b>				
Moisture	76.4	76.9	76.3	77.1
Protein	4.1475	3.6308	3.3081	3.4362
Total Fat	1.09	0.939	1.08	0.986
Ash	1.73	1.46	1.86	1.68
Acid Detergent Fiber	8.32	7.47	7.73	7.37
Neutral Detergent Fiber	8.13	10.2	8.83	10.0
Carbohydrates	16.6	17.1	17.4	16.8

**Table 2. Compositional Analyses of Forage Reference Substances (Continued)**

<b>Material Name</b>	<b>DP 5989</b>	<b>Hutcheson</b>	<b>USG 5601T</b>	<b>Fowler</b>
<b>Field Site</b>	NC	NC	NC	NC
<b>Replicate</b>	rep 3	rep 3	rep 3	rep 3
<b>Sample ID</b>	07017101-00591	07017101-00594	07017101-00597	07017101-00600
<b>EPL-BAS Job ID</b>	080324-0268	080324-0289	080324-0306	080324-0307
<b>Proximates (%)</b>				
Moisture	70.6	73.6	66.5	67.4
Protein	4.4403	5.2195	6.8264	4.6825
Total Fat	1.05	1.59	1.97	1.41
Ash	1.89	1.69	1.81	1.83
Acid Detergent Fiber	10.4	11.4	14.8	10.5
Neutral Detergent Fiber	14.3	14.4	14.2	15.2
Carbohydrates	22.0	18.0	22.9	24.7

**Table 3. Compositional Analyses of Forage Test Substance**

<b>Material Name</b>	<b>MON 87701</b>	<b>MON 87701</b>
<b>Field Site</b>	AL	AL
<b>Replicate</b>	rep 1	rep 2
<b>Sample ID</b>	07017101-00055	07017101-00056
<b>EPL-BAS Job ID</b>	080324-0287	080324-0301
<b>Proximates (%)</b>		
Moisture	75.4	72.7
Protein	4.8515	5.4386
Total Fat	1.44	1.08
Ash	1.47	1.38
Acid Detergent Fiber	7.39	10.6
Neutral Detergent Fiber	12.2	11.6
Carbohydrates	16.8	19.4

**Table 3. Compositional Analyses of Forage Test Substance (Continued)**

<b>Material Name</b>	<b>MON 87701</b>	<b>MON 87701</b>	<b>MON 87701</b>
<b>Field Site</b>	AR	AR	AR
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00187	07017101-00188	07017101-00189
<b>EPL-BAS Job ID</b>	080324-0314	080324-0272	080324-0269
<b>Proximates (%)</b>			
Moisture	72.8	71.6	73.3
Protein	5.4486	4.8564	4.9285
Total Fat	1.63	1.31	1.33
Ash	1.44	1.61	1.74
Acid Detergent Fiber	10.8	9.03	11.0
Neutral Detergent Fiber	12.7	15.9	12.5
Carbohydrates	18.7	20.7	18.7

**Table 3. Compositional Analyses of Forage Test Substance (Continued)**

<b>Material Name</b>	<b>MON 87701</b>	<b>MON 87701</b>	<b>MON 87701</b>
<b>Field Site</b>	GA	GA	GA
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00319	07017101-00320	07017101-00321
<b>EPL-BAS Job ID</b>	080324-0288	080324-0311	080324-0283
<b>Proximates (%)</b>			
Moisture	70.6	71.1	71.7
Protein	5.2741	4.7432	4.5109
Total Fat	1.83	1.88	1.68
Ash	1.63	1.59	1.61
Acid Detergent Fiber	9.37	8.73	8.97
Neutral Detergent Fiber	15.4	10.7	10.9
Carbohydrates	20.7	20.7	20.5

**Table 3. Compositional Analyses of Forage Test Substance (Continued)**

<b>Material Name</b>	MON 87701	MON 87701	MON 87701
<b>Field Site</b>	IL	IL	IL
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00451	07017101-00452	07017101-00453
<b>EPL-BAS Job ID</b>	080324-0317	080324-0315	080324-0309
<b>Proximates (%)</b>			
Moisture	75.5	75.2	76.8
Protein	3.3214	3.5435	3.6512
Total Fat.	0.883	1.08	1.13
Ash	1.45	1.56	1.73
Acid Detergent Fiber	10.8	8.43	7.41
Neutral Detergent Fiber	11.3	13.2	10.9
Carbohydrates	18.8	18.6	16.7

**Table 3. Compositional Analyses of Forage Test Substance (Continued)**

<b>Material Name</b>	MON 87701	MON 87701	MON 87701
<b>Field Site</b>	NC	NC	NC
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00583	07017101-00584	07017101-00585
<b>EPL-BAS Job ID</b>	080324-0300	080324-0297	080324-0286
<b>Proximates (%)</b>			
Moisture	70.3	70.1	71.0
Protein	4.8305	5.2857	5.0927
Total Fat	1.59	2.04	1.53
Ash	1.63	1.62	1.75
Acid Detergent Fiber	17.3	11.1	11.2
Neutral Detergent Fiber	14.0	14.6	13.5
Carbohydrates	21.7	21.0	20.6

**Table 4. Compositional Analyses of Seed Control Substance**

Material Name	A5547	A5547	A5547
Field Site	AL	AL	AL
Replicate	rep 1	rep 2	rep 3
Sample ID	07017101-00085	07017101-00087	07017101-00089
EPL-BAS Job ID	080320-0215	080320-0252	080320-0228
<b>Proximates (%)</b>			
Moisture	6.51	7.63	6.42
Protein	38.9016	38.6716	38.4314
Total Fat	20.8	20.7	21.1
Acid Detergent Fiber	13.2	13.6	13.1
Neutral Detergent Fiber	16.9	14.8	17.2
Ash	5.32	5.43	5.42
Carbohydrates	28.5	27.6	28.6
<b>Amino Acids (%)</b>			
Alanine	1.69	1.68	1.70
Aspartic Acid	4.99	4.76	4.98
Glumatic Acid	7.72	7.46	7.69
Proline	1.95	1.96	1.96
Serine	1.92	1.97	1.95
Tyrosine	1.09	1.12	1.14
Lysine	2.71	2.69	2.50
Arginine	2.54	2.67	2.58
Isoleucine	1.76	1.81	1.77
Histidine	1.02	1.06	1.04
Valine	1.83	1.88	1.86
Leucine	2.93	3.04	2.97
Threonine	1.48	1.55	1.51
Phenylalanine	1.94	2.20	2.01
Glycine	1.65	1.71	1.66
Methionine	0.526	0.474	0.491
Cystine	0.589	0.537	0.567
Tryptophan	0.489	0.465	0.466
<b>Fatty Acids (%)</b>			
Lauric Acid (C12:0)	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0151	0.0145	0.0158
Palmitic Acid (C16:0)	1.78	1.71	1.80
Palmitoleic Acid (C16:1)	0.0141	0.0130	0.0135
Heptadecanoic Acid (C17:0)	0.0147	0.0141	0.0148
Heptadecenoic Acid (C17:1)	0.00705	0.00658	0.00696
Stearic Acid (C18:0)	0.685	0.616	0.683
Oleic Acid (C18:1)	4.29	3.86	3.91
Linoleic Acid (C18:2)	7.03	6.95	7.35
Linolenic Acid (C18:3)	0.803	0.757	0.846
Arachidic Acid (C20:0)	0.0843	0.0753	0.0825
Eicosenoic Acid (C20:1)	0.0414	0.0394	0.0403
Eicosadienoic Acid (C20:2)	0.00600	0.00663	0.00658
Behenic Acid (C22:0)	0.0974	0.0859	0.0949
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0332	0.0259	0.0340
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid (C15:0)	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid (C15:1)	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid (C18:3 gamma)	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207
Erucic Acid (C22:1)	<0.0207	<0.0207	<0.0207

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

<b>Material Name</b>	A5547	A5547	A5547
<b>Field Site</b>	AL	AL	AL
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00085	07017101-00087	07017101-00089
<b>EPL-BAS Job ID</b>	080320-0215	080320-0252	080320-0228
alpha-tocopherol (mg/kg)	64.1	63.6	67.5
Phytic Acid (%)	2.12	2.06	2.49
Trypsin Inhibitor (TIU/mg)	24.5	30.3	32.0
Raffinose (%)	0.510	0.452	0.405
Stachyose (%)	2.38	2.10	2.13
Daidzein (mg/kg)	186	197	222
Genistein (mg/kg)	229	240	238
Glycitein (mg/kg)	62.7	56.6	62.0
Lectins (H.U./mg)	0.362	0.281	0.313

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

Material Name	A5547	A5547	A5547
Field Site	AR	AR	AR
Replicate	rep 1	rep 2	rep 3
Sample ID	07017101-00217	07017101-00219	07017101-00221
EPL-BAS Job ID	080320-0230	080320-0205	080320-0217
<b>Proximates (%)</b>			
Moisture	6.00	5.44	6.63
Protein	36.1046	36.5849	36.2478
Total Fat	18.4	16.3	18.1
Acid Detergent Fiber	16.7	14.9	13.5
Neutral Detergent Fiber	21.1	14.2	18.0
Ash	4.60	4.53	4.41
Carbohydrates	34.9	37.1	34.6
<b>Amino Acids (%)</b>			
Alanine	1.57	1.60	1.54
Aspartic Acid	4.52	4.64	4.44
Glumatic Acid	7.03	7.24	6.88
Proline	1.84	1.88	1.80
Serine	1.84	1.86	1.79
Tyrosine	1.10	1.09	0.965
Lysine	2.30	2.59	2.46
Arginine	2.50	2.49	2.36
Isoleucine	1.64	1.69	1.61
Histidine	1.02	1.01	0.984
Valine	1.75	1.78	1.70
Leucine	2.76	2.81	2.68
Threonine	1.46	1.46	1.41
Phenylalanine	1.94	1.91	1.85
Glycine	1.60	1.60	1.56
Methionine	0.494	0.535	0.478
Cystine	0.581	0.600	0.545
Tryptophan	0.437	0.466	0.484
<b>Fatty Acids (%)</b>			
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0113	0.0110	0.0113
Palmitic Acid ( C16:0)	1.58	1.52	1.56
Palmitoleic Acid (C16:1)	0.0119	0.0103	0.0118
Heptadecanoic Acid (C17:0)	0.0129	0.0126	0.0126
Heptadecenoic Acid (C17:1)	0.00577	0.00597	0.00575
Stearic Acid (C18:0)	0.557	0.550	0.535
Oleic Acid (C18:1)	2.74	2.79	2.70
Linoleic Acid (C18:2)	7.24	7.07	7.18
Linolenic Acid (C18:3)	1.11	1.08	1.08
Arachidic Acid (C20:0)	0.0574	0.0556	0.0551
Eicosenoic Acid (C20:1)	0.0295	0.0241	0.0287
Eicosadienoic Acid (C20:2)	0.00602	<0.00517	0.00620
Behenic Acid (C22:0)	0.0623	0.0590	0.0611
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0336	0.0245	0.0340
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

<b>Material Name</b>	<b>A5547</b>	<b>A5547</b>	<b>A5547</b>
<b>Field Site</b>	AR	AR	AR
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00217	07017101-00219	07017101-00221
<b>EPL-BAS Job ID</b>	080320-0230	080320-0205	080320-0217
alpha-tocopherol (mg/kg)	48.1	46.1	47.6
Phytic Acid (%)	1.87	2.02	1.77
Trypsin Inhibitor (TIU/mg)	21.7	24.6	28.9
Raffinose (%)	1.32	1.44	1.50
Stachyose (%)	5.04	5.65	5.45
Daidzein (mg/kg)	585	586	684
Genistein (mg/kg)	623	627	667
Glycitein (mg/kg)	132	149	179
Lectins (H.U./mg)	1.05	1.04	0.295

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

Material Name	A5547	A5547	A5547
Field Site	GA	GA	GA
Replicate	rep 1	rep 2	rep 3
Sample ID	07017101-00349	07017101-00351	07017101-00353
EPL-BAS Job ID	080320-0240	080320-0204	080320-0238
<b>Proximates (%)</b>			
Moisture	8.03	6.16	6.82
Protein	34.3793	30.3017	35.5249
Total Fat	19.6	18.2	20.2
Acid Detergent Fiber	14.5	13.7	13.4
Neutral Detergent Fiber	15.7	14.1	15.2
Ash	4.47	4.54	4.38
Carbohydrates	33.5	40.8	33.1
<b>Amino Acids (%)</b>			
Alanine	1.51	1.53	1.56
Aspartic Acid	4.22	4.41	4.57
Glumatic Acid	6.63	6.90	7.08
Proline	1.78	1.81	1.81
Serine	1.83	1.81	1.78
Tyrosine	0.940	1.05	1.04
Lysine	2.45	2.43	2.37
Arginine	2.39	2.40	2.38
Isoleucine	1.63	1.60	1.62
Histidine	1.03	1.01	1.01
Valine	1.72	1.69	1.72
Leucine	2.72	2.69	2.70
Threonine	1.46	1.41	1.41
Phenylalanine	2.02	1.87	1.85
Glycine	1.58	1.56	1.53
Methionine	0.500	0.485	0.434
Cystine	0.586	0.556	0.522
Tryptophan	0.459	0.498	0.475
<b>Fatty Acids (%)</b>			
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0138	0.0127	0.0139
Palmitic Acid ( C16:0)	1.66	1.62	1.70
Palmitoleic Acid (C16:1)	0.0129	0.0146	0.0156
Heptadecanoic Acid (C17:0)	0.0126	0.0118	0.0117
Heptadecenoic Acid (C17:1)	0.00545	<0.00513	0.00557
Stearic Acid (C18:0)	0.656	0.719	0.764
Oleic Acid (C18:1)	2.86	3.09	3.35
Linoleic Acid (C18:2)	7.25	7.07	7.18
Linolenic Acid (C18:3)	1.04	0.982	1.00
Arachidic Acid (C20:0)	0.0704	0.0772	0.0817
Eicosenoic Acid (C20:1)	0.0304	0.0309	0.0319
Eicosadienoic Acid (C20:2)	0.00608	0.00565	0.00550
Behenic Acid (C22:0)	0.0716	0.0774	0.0822
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0254	0.0225	0.0276
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

<b>Material Name</b>	<b>A5547</b>	<b>A5547</b>	<b>A5547</b>
<b>Field Site</b>	GA	GA	GA
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00349	07017101-00351	07017101-00353
<b>EPL-BAS Job ID</b>	080320-0240	080320-0204	080320-0238
alpha-tocopherol (mg/kg)	70.3	74.5	72.1
Phytic Acid (%)	1.47	1.56	1.22
Trypsin Inhibitor (TIU/mg)	25.1	28.0	28.6
Raffinose (%)	1.60	1.74	1.37
Stachyose (%)	4.77	4.64	4.42
Daidzein (mg/kg)	688	697	702
Genistein (mg/kg)	634	714	630
Glycitein (mg/kg)	209	188	167
Lectins (H.U./mg)	0.543	1.28	0.707

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

Material Name	A5547	A5547	A5547
Field Site	IL	IL	IL
Replicate	rep 1	rep 2	rep 3
Sample ID	07017101-00481	07017101-00483	07017101-00485
EPL-BAS Job ID	080320-0213	080320-0207	080320-0191
<b>Proximates (%)</b>			
Moisture	6.94	6.66	8.74
Protein	34.1120	34.6199	35.3270
Total Fat	16.8	16.6	16.7
Acid Detergent Fiber	17.7	15.7	14.0
Neutral Detergent Fiber	16.2	14.3	14.5
Ash	4.99	4.82	4.87
Carbohydrates	37.1	37.3	34.4
<b>Amino Acids (%)</b>			
Alanine	1.49	1.48	1.56
Aspartic Acid	4.17	4.16	4.53
Glumatic Acid	6.41	6.50	6.97
Proline	1.73	1.73	1.82
Serine	1.75	1.75	1.82
Tyrosine	0.936	0.916	0.951
Lysine	2.32	2.32	2.50
Arginine	2.21	2.22	2.34
Isoleucine	1.55	1.53	1.60
Histidine	0.974	0.965	0.989
Valine	1.64	1.64	1.71
Leucine	2.54	2.55	2.67
Threonine	1.40	1.39	1.44
Phenylalanine	1.79	1.78	1.82
Glycine	1.55	1.53	1.57
Methionine	0.494	0.537	0.537
Cystine	0.577	0.624	0.627
Tryptophan	0.475	0.463	0.473
<b>Fatty Acids (%)</b>			
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0118	0.0114	0.0114
Palmitic Acid ( C16:0)	1.53	1.51	1.48
Palmitoleic Acid (C16:1)	0.0126	0.0125	0.0123
Heptadecanoic Acid (C17:0)	0.0123	0.0121	0.0117
Heptadecenoic Acid (C17:1)	0.00553	0.00540	0.00534
Stearic Acid (C18:0)	0.641	0.645	0.642
Oleic Acid (C18:1)	2.85	2.79	2.80
Linoleic Acid (C18:2)	6.78	6.71	6.59
Linolenic Acid (C18:3)	0.987	0.971	0.943
Arachidic Acid (C20:0)	0.0672	0.0660	0.0663
Eicosenoic Acid (C20:1)	0.0304	0.0277	0.0288
Eicosadienoic Acid (C20:2)	0.00567	0.00605	0.00569
Behenic Acid (C22:0)	0.0679	0.0650	0.0659
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0331	0.0212	0.0223
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

<b>Material Name</b>	<b>A5547</b>	<b>A5547</b>	<b>A5547</b>
<b>Field Site</b>	IL	IL	IL
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00481	07017101-00483	07017101-00485
<b>EPL-BAS Job ID</b>	080320-0213	080320-0207	080320-0191
alpha-tocopherol (mg/kg)	50.0	46.5	50.9
Phytic Acid (%)	1.97	1.99	1.74
Trypsin Inhibitor (TIU/mg)	27.3	26.6	28.0
Raffinose (%)	1.41	1.46	1.52
Stachyose (%)	5.15	5.70	6.07
Daidzein (mg/kg)	773	738	720
Genistein (mg/kg)	653	695	666
Glycitein (mg/kg)	202	166	200
Lectins (H.U./mg)	0.841	1.09	1.18

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

Material Name	A5547	A5547
Field Site	NC	NC
Replicate	rep 2	rep 3
Sample ID	07017101-00615	07017101-00617
EPL-BAS Job ID	080320-0236	080320-0227
<b>Proximates (%)</b>		
Moisture	7.06	6.77
Protein	30.0854	35.5925
Total Fat	19.2	19.2
Acid Detergent Fiber	14.4	15.1
Neutral Detergent Fiber	16.1	16.0
Ash	4.63	4.77
Carbohydrates	34.0	33.7
<b>Amino Acids (%)</b>		
Alanine	1.54	1.57
Aspartic Acid	4.39	4.58
Glumatic Acid	6.87	7.07
Proline	1.79	1.81
Serine	1.80	1.81
Tyrosine	0.960	1.04
Lysine	2.25	2.36
Arginine	2.35	2.37
Isoleucine	1.61	1.60
Histidine	1.00	0.988
Valine	1.72	1.71
Leucine	2.70	2.69
Threonine	1.44	1.42
Phenylalanine	1.88	1.83
Glycine	1.57	1.56
Methionine	0.449	0.492
Cystine	0.533	0.570
Tryptophan	0.436	0.454
<b>Fatty Acids (%)</b>		
Lauric Acid ( C12:0)	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0121	0.0135
Palmitic Acid ( C16:0)	1.59	1.68
Palmitoleic Acid (C16:1)	0.0129	0.0144
Heptadecanoic Acid (C17:0)	0.0118	0.0124
Heptadecenoic Acid (C17:1)	0.00530	0.00567
Stearic Acid (C18:0)	0.611	0.695
Oleic Acid (C18:1)	2.73	3.16
Linoleic Acid (C18:2)	6.99	7.34
Linolenic Acid (C18:3)	0.950	0.986
Arachidic Acid (C20:0)	0.0649	0.0748
Eicosenoic Acid (C20:1)	0.0295	0.0328
Eicosadienoic Acid (C20:2)	0.00555	0.00633
Behenic Acid (C22:0)	0.0678	0.0761
Caprylic Acid (C8:0)	<0.0197	<0.0197
Capric Acid (C10:0)	0.0280	0.0333
Myristoleic Acid (C14:1)	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207

**Table 4. Compositional Analyses of Seed Control Substance (Continued)**

<b>Material Name</b>	<b>A5547</b>	<b>A5547</b>
<b>Field Site</b>	<b>NC</b>	<b>NC</b>
<b>Replicate</b>	<b>rep 2</b>	<b>rep 3</b>
<b>Sample ID</b>	<b>07017101-00615</b>	<b>07017101-00617</b>
<b>EPL-BAS Job ID</b>	<b>080320-0236</b>	<b>080320-0227</b>
alpha-tocopherol (mg/kg)	50.8	61.1
Phytic Acid (%)	1.75	1.73
Trypsin Inhibitor (TIU/mg)	20.9	27.0
Raffinose (%)	1.33	1.30
Stachyose (%)	4.98	5.34
Daidzein (mg/kg)	553	544
Genistein (mg/kg)	564	551
Glycitein (mg/kg)	154	130
Lectins (H.U./mg)	0.321	0.847

**Table 5. Compositional Analyses of Seed Reference Substances**

Material Name	A5843	A5959	CMA 5804AOC	H6686
Field Site	AL	AL	AL	AL
Replicate	rep 3	rep 3	rep 3	rep 3
Sample ID	07017101-00113	07017101-00119	07017101-00125	07017101-00131
EPL-BAS Job ID	080320-0210	080320-0212	080320-0211	080320-0206
<b>Proximates (%)</b>				
Moisture	6.17	5.48	6.54	6.43
Protein	39.0450	38.0766	38.1002	39.9172
Total Fat	19.5	19.6	18.9	17.1
Acid Detergent Fiber	12.0	14.0	16.8	13.7
Neutral Detergent Fiber	12.5	13.7	14.6	13.4
Ash	5.22	5.23	5.25	4.99
Carbohydrates	30.0	31.6	31.2	31.5
<b>Amino Acids (%)</b>				
Alanine	1.66	1.62	1.64	1.68
Aspartic Acid	4.77	4.58	4.71	5.13
Glumatic Acid	7.52	7.22	7.47	8.05
Proline	1.96	1.90	1.93	2.00
Serine	2.01	1.94	1.95	2.04
Tyrosine	1.17	1.17	1.20	1.23
Lysine	2.56	2.45	2.52	2.72
Arginine	2.69	2.57	2.63	2.80
Isoleucine	1.79	1.70	1.75	1.81
Histidine	1.09	1.03	1.03	1.09
Valine	1.86	1.77	1.83	1.89
Leucine	2.99	2.86	2.90	3.02
Threonine	1.55	1.51	1.52	1.56
Phenylalanine	2.09	2.04	2.05	2.09
Glycine	1.75	1.69	1.69	1.74
Methionine	0.531	0.525	0.506	0.509
Cystine	0.557	0.595	0.565	0.538
Tryptophan	0.498	0.468	0.478	0.490
<b>Fatty Acids (%)</b>				
Lauric Acid (C12:0)	<0.00505	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0128	0.0127	0.0126	0.00931
Palmitic Acid (C16:0)	1.54	1.65	1.66	1.32
Palmitoleic Acid (C16:1)	0.0125	0.0142	0.0137	0.0135
Heptadecanoic Acid (C17:0)	0.0141	0.0129	0.0128	0.0102
Heptadecenoic Acid (C17:1)	0.00706	0.00667	0.00670	0.00702
Srearcic Acid (C18:0)	0.575	0.470	0.497	0.389
Oleic Acid (C18:1)	3.34	2.81	2.89	4.15
Linoleic Acid (C18:2)	7.37	7.83	8.15	5.38
Linolenic Acid (C18:3)	0.825	0.862	0.882	0.667
Arachidic Acid (C20:0)	0.0652	0.0546	0.0557	0.0455
Eicosenoic Acid (C20:1)	0.0343	0.0333	0.0350	0.0350
Eicosadienoic Acid (C20:2)	0.00690	0.00743	0.00754	<0.00517
Behenic Acid (C22:0)	0.0711	0.0729	0.0741	0.0584
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0226	0.0335	0.0327	0.0206
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid (C15:0)	<0.0204	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid (C15:1)	<0.0204	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid (C18:3 gamma)	<0.0206	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207	<0.0207
Erucic Acid (C22:1)	<0.0207	<0.0207	<0.0207	<0.0207

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

<b>Material Name</b>	<b>A5843</b>	<b>A5959</b>	<b>CMA 5804AOC</b>	<b>H6686</b>
<b>Field Site</b>	AL	AL	AL	AL
<b>Replicate</b>	rep 3	rep 3	rep 3	rep 3
<b>Sample ID</b>	07017101-00113	07017101-00119	07017101-00125	07017101-00131
<b>EPL-BAS Job ID</b>	080320-0210	080320-0212	080320-0211	080320-0206
alpha-tocopherol (mg/kg)	75.8	32.3	36.1	32.0
Phytic Acid (%)	1.54	2.18	2.00	1.75
Trypsin Inhibitor (TIU/mg)	29.5	29.8	30.5	29.1
Raffinose (%)	0.486	0.634	0.723	0.613
Stachyose (%)	2.78	2.91	3.19	4.07
Daidzein (mg/kg)	245	407	304	368
Genistein (mg/kg)	421	380	327	415
Glycitein (mg/kg)	58.7	108	63.3	64.9
Lectins (H.U./mg)	2.47	0.580	1.38	2.16

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

Material Name	UA 4805	Ozark	Hornbeck C5894	Anand
Field Site	AR	AR	AR	AR
Replicate	rep 3	rep 3	rep 3	rep 3
Sample ID	07017101-00245	07017101-00251	07017101-00257	07017101-00263
EPL-BAS Job ID	080320-0226	080320-0221	080320-0231	080320-0200
<b>Proximates (%)</b>				
Moisture	6.22	5.76	6.32	10.2
Protein	37.5938	37.2255	38.7231	35.6821
Total Fat	17.6	18.0	18.4	16.3
Acid Detergent Fiber	15.8	14.9	15.0	15.6
Neutral Detergent Fiber	18.5	20.1	19.6	16.1
Ash	4.71	4.39	4.21	4.65
Carbohydrates	33.9	34.6	32.4	33.1
<b>Amino Acids (%)</b>				
Alanine	1.59	1.58	1.70	1.55
Aspartic Acid	4.73	4.63	5.14	4.54
Glumatic Acid	7.32	7.17	8.02	6.97
Proline	1.86	1.88	1.99	1.79
Serine	1.93	1.88	1.95	1.82
Tyrosine	1.13	0.976	1.08	0.960
Lysine	2.42	2.53	2.59	2.48
Arginine	2.53	2.49	2.69	2.39
Isoleucine	1.67	1.68	1.76	1.58
Histidine	1.04	1.03	1.03	0.975
Valine	1.75	1.76	1.85	1.69
Leucine	2.84	2.80	2.94	2.66
Threonine	1.51	1.47	1.52	1.42
Phenylalanine	1.92	1.97	2.02	1.80
Glycine	1.64	1.64	1.67	1.58
Methionine	0.568	0.523	0.497	0.487
Cystine	0.611	0.599	0.560	0.572
Tryptophan	0.485	0.463	0.472	0.432
<b>Fatty Acids (%)</b>				
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0102	0.00893	0.00813	0.0141
Palmitic Acid ( C16:0)	1.45	1.30	1.36	1.97
Palmitoleic Acid (C16:1)	0.0104	0.0102	0.0173	0.0139
Heptadecanoic Acid (C17:0)	0.0124	0.0115	0.0122	0.0151
Heptadecenoic Acid (C17:1)	0.00559	0.00584	0.00820	0.00694
Srearcic Acid (C18:0)	0.471	0.433	0.462	0.542
Oleic Acid (C18:1)	2.35	2.68	3.95	3.00
Linoleic Acid (C18:2)	7.21	6.55	6.03	8.74
Linolenic Acid (C18:3)	1.06	0.908	0.726	1.40
Arachidic Acid (C20:0)	0.0497	0.0437	0.0483	0.0616
Eicosenoic Acid (C20:1)	0.0267	0.0276	0.0320	0.0352
Eicosadienoic Acid (C20:2)	0.00530	0.00598	<0.00517	0.00688
Behenic Acid (C22:0)	0.0575	0.0480	0.0568	0.0711
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0341	0.0326	0.0256	0.0231
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207	<0.0207

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

<b>Material Name</b>	<b>UA 4805</b>	<b>Ozark</b>	<b>Hornbeck C5894</b>	<b>Anand</b>
<b>Field Site</b>	AR	AR	AR	AR
<b>Replicate</b>	rep 3	rep 3	rep 3	rep 3
<b>Sample ID</b>	07017101-00245	07017101-00251	07017101-00257	07017101-00263
<b>EPL-BAS Job ID</b>	080320-0226	080320-0221	080320-0231	080320-0200
alpha-tocopherol (mg/kg)	15.5	18.6	21.9	28.0
Phytic Acid (%)	1.76	1.69	1.47	1.53
Trypsin Inhibitor (TIU/mg)	31.5	24.7	21.1	22.5
Raffinose (%)	1.12	1.16	1.00	0.987
Stachyose (%)	4.89	4.62	4.10	4.92
Daidzein (mg/kg)	675	501	410	1144
Genistein (mg/kg)	926	716	432	920
Glycitein (mg/kg)	117	184	45.3	133
Lectins (H.U./mg)	0.771	1.26	1.09	1.24

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

Material Name	A5560	CMC 5901COC	LEE 74	A5403
Field Site	GA	GA	GA	GA
Replicate	rep 3	rep 2	rep 3	rep 3
Sample ID	07017101-00377	07017101-00381	07017101-00389	07017101-00395
EPL-BAS Job ID	080320-0233	080320-0234	080320-0241	080320-0237
<b>Proximates (%)</b>				
Moisture	7.09	7.47	6.93	6.83
Protein	37.3060	35.3209	38.7699	36.3682
Total Fat	20.3	21.8	18.7	19.7
Acid Detergent Fiber	15.6	14.7	13.4	13.6
Neutral Detergent Fiber	21.9	20.6	14.9	15.6
Ash	4.32	4.96	4.02	4.29
Carbohydrates	31.0	30.4	31.6	32.8
<b>Amino Acids (%)</b>				
Alanine	1.63	1.54	1.72	1.56
Aspartic Acid	4.78	4.39	5.02	4.55
Glumatic Acid	7.45	6.97	7.78	7.14
Proline	1.86	1.78	1.95	1.81
Serine	1.89	1.81	1.97	1.83
Tyrosine	1.02	0.987	1.03	1.07
Lysine	2.42	2.17	2.93	2.39
Arginine	2.44	2.35	2.62	2.38
Isoleucine	1.71	1.62	1.80	1.63
Histidine	1.08	0.969	1.11	1.04
Valine	1.79	1.71	1.87	1.72
Leucine	2.86	2.71	2.99	2.73
Threonine	1.47	1.43	1.56	1.45
Phenylalanine	1.97	1.88	2.09	1.84
Glycine	1.60	1.59	1.67	1.56
Methionine	0.453	0.480	0.557	0.501
Cystine	0.494	0.510	0.625	0.574
Tryptophan	0.469	0.442	0.498	0.485
<b>Fatty Acids (%)</b>				
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0118	0.0153	0.00966	0.0107
Palmitic Acid ( C16:0)	1.58	1.66	1.31	1.54
Palmitoleic Acid (C16:1)	0.0122	0.0192	0.0121	0.0126
Heptadecanoic Acid (C17:0)	0.0122	0.0122	0.0109	0.0116
Heptadecenoic Acid (C17:1)	0.00542	0.00891	0.00597	0.00514
Stearic Acid (C18:0)	0.693	0.723	0.677	0.721
Oleic Acid (C18:1)	3.27	5.68	3.77	3.44
Linoleic Acid (C18:2)	7.32	7.13	6.53	6.91
Linolenic Acid (C18:3)	0.797	0.690	0.806	0.872
Arachidic Acid (C20:0)	0.0737	0.0673	0.0699	0.0753
Eicosenoic Acid (C20:1)	0.0339	0.0492	0.0326	0.0343
Eicosadienoic Acid (C20:2)	0.00585	<0.00517	0.00569	0.00650
Behenic Acid (C22:0)	0.0691	0.0611	0.0706	0.0805
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0255	0.0264	0.0265	0.0265
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207	<0.0207

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

<b>Material Name</b>	<b>A5560</b>	<b>CMC 5901COC</b>	<b>LEE 74</b>	<b>A5403</b>
<b>Field Site</b>	GA	GA	GA	GA
<b>Replicate</b>	rep 3	rep 2	rep 3	rep 3
<b>Sample ID</b>	07017101-00377	07017101-00381	07017101-00389	07017101-00395
<b>EPL-BAS Job ID</b>	080320-0233	080320-0234	080320-0241	080320-0237
alpha-tocopherol (mg/kg)	42.2	73.6	30.1	33.2
Phytic Acid (%)	1.14	1.48	1.02	1.14
Trypsin Inhibitor (TIU/mg)	30.1	29.4	30.7	34.7
Raffinose (%)	1.14	1.02	1.31	1.51
Stachyose (%)	3.90	1.82	4.20	4.66
Daidzein (mg/kg)	208	198	560	650
Genistein (mg/kg)	310	137	519	594
Glycitein (mg/kg)	114	30.0	194	122
Lectins (H.U./mg)	0.902	1.68	1.94	0.531

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

Material Name	A4922	H4994	H5218	A5427
Field Site	IL	IL	IL	IL
Replicate	rep 3	rep 3	rep 3	rep 3
Sample ID	07017101-00509	07017101-00515	07017101-00521	07017101-00527
EPL-BAS Job ID	080320-0251	080320-0202	080320-0232	080320-0218
<b>Proximates (%)</b>				
Moisture	6.83	5.79	6.70	6.37
Protein	39.1839	35.9319	36.3202	37.6088
Total Fat	18.1	17.7	16.7	18.9
Acid Detergent Fiber	13.8	14.1	15.6	14.6
Neutral Detergent Fiber	15.1	14.3	20.2	19.3
Ash	5.04	4.78	4.92	4.95
Carbohydrates	30.9	35.8	35.3	32.1
<b>Amino Acids (%)</b>				
Alanine	1.69	1.58	1.60	1.58
Aspartic Acid	4.94	4.56	4.63	4.66
Glumatic Acid	7.74	7.11	7.23	7.28
Proline	1.98	1.81	1.83	1.85
Serine	2.02	1.85	1.89	1.85
Tyrosine	1.11	1.11	0.984	1.06
Lysine	2.83	2.59	2.40	2.59
Arginine	2.67	2.40	2.42	2.44
Isoleucine	1.82	1.67	1.67	1.62
Histidine	1.07	1.01	1.01	0.973
Valine	1.90	1.74	1.76	1.71
Leucine	3.03	2.77	2.81	2.75
Threonine	1.60	1.45	1.48	1.44
Phenylalanine	2.21	1.86	1.90	1.85
Glycine	1.74	1.60	1.62	1.59
Methionine	0.531	0.464	0.484	0.498
Cystine	0.587	0.504	0.521	0.545
Tryptophan	0.458	0.489	0.442	0.485
<b>Fatty Acids (%)</b>				
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0110	0.00970	0.00905	0.0115
Palmitic Acid ( C16:0)	1.39	1.29	1.21	1.59
Palmitoleic Acid (C16:1)	0.00965	0.00955	0.0122	0.0134
Heptadecanoic Acid (C17:0)	0.0119	0.0110	0.0101	0.0132
Heptadecenoic Acid (C17:1)	0.00531	0.00581	0.00572	0.00609
Stearic Acid (C18:0)	0.548	0.492	0.475	0.638
Oleic Acid (C18:1)	2.68	2.97	2.74	2.85
Linoleic Acid (C18:2)	6.87	6.46	6.07	7.19
Linolenic Acid (C18:3)	0.899	0.831	0.812	0.938
Arachidic Acid (C20:0)	0.0476	0.0552	0.0483	0.0651
Eicosenoic Acid (C20:1)	0.0322	0.0260	0.0271	0.0294
Eicosadienoic Acid (C20:2)	0.00629	0.00523	0.00525	0.00592
Behenic Acid (C22:0)	0.0512	0.0643	0.0601	0.0655
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0257	0.0241	0.0260	0.0348
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207	<0.0207

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

<b>Material Name</b>	<b>A4922</b>	<b>H4994</b>	<b>H5218</b>	<b>A5427</b>
<b>Field Site</b>	IL	IL	IL	IL
<b>Replicate</b>	rep 3	rep 3	rep 3	rep 3
<b>Sample ID</b>	07017101-00509	07017101-00515	07017101-00521	07017101-00527
<b>EPL-BAS Job ID</b>	080320-0251	080320-0202	080320-0232	080320-0218
alpha-tocopherol (mg/kg)	29.8	29.2	23.1	61.6
Phytic Acid (%)	2.16	1.98	1.60	2.00
Trypsin Inhibitor (TIU/mg)	34.5	27.2	29.2	29.8
Raffinose (%)	1.04	1.28	1.49	1.31
Stachyose (%)	4.63	5.23	4.84	5.12
Daidzein (mg/kg)	465	365	473	292
Genistein (mg/kg)	487	457	397	462
Glycitein (mg/kg)	118	132	96.6	81.3
Lectins (H.U./mg)	0.482	0.553	1.14	0.604

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

Material Name	DP 5989	Hutcheson	USG 5601T	Fowler
Field Site	NC	NC	NC	NC
Replicate	rep 3	rep 3	rep 3	rep 3
Sample ID	07017101-00641	07017101-00647	07017101-00653	07017101-00659
EPL-BAS Job ID	080320-0196	080320-0243	080320-0192	080320-0247
<b>Proximates (%)</b>				
Moisture	11.7	7.77	9.38	6.64
Protein	37.2049	36.4006	38.1841	36.2265
Total Fat	16.7	20.4	17.7	18.7
Acid Detergent Fiber	15.1	13.9	13.4	15.3
Neutral Detergent Fiber	16.0	15.3	14.8	17.2
Ash	4.62	4.65	4.81	4.66
Carbohydrates	29.7	30.8	29.9	33.8
<b>Amino Acids (%)</b>				
Alanine	1.65	1.60	1.75	1.61
Aspartic Acid	4.70	4.51	4.98	4.59
Glumatic Acid	7.47	7.20	7.90	7.18
Proline	1.87	1.89	2.04	1.85
Serine	1.85	1.96	2.08	1.87
Tyrosine	1.08	1.11	1.17	0.980
Lysine	2.63	2.57	2.76	2.69
Arginine	2.50	2.65	2.68	2.45
Isoleucine	1.69	1.75	1.83	1.68
Histidine	1.02	1.08	1.12	1.01
Valine	1.74	1.83	1.93	1.78
Leucine	2.78	2.92	3.01	2.83
Threonine	1.47	1.54	1.58	1.50
Phenylalanine	1.98	2.25	2.09	2.02
Glycine	1.65	1.66	1.80	1.80
Methionine	0.548	0.476	0.547	0.518
Cystine	0.598	0.553	0.593	0.610
Tryptophan	0.488	0.437	0.476	0.457
<b>Fatty Acids (%)</b>				
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0115	0.0157	0.0123	0.0126
Palmitic Acid ( C16:0)	1.44	1.92	1.54	1.52
Palmitoleic Acid (C16:1)	0.0139	0.0143	0.0107	0.00944
Heptadecanoic Acid (C17:0)	0.0100	0.0151	0.0108	0.0118
Heptadecenoic Acid (C17:1)	0.00587	0.00628	<0.00513	<0.00513
Stearic Acid (C18:0)	0.484	0.724	0.499	0.468
Oleic Acid (C18:1)	2.86	3.19	2.51	2.17
Linoleic Acid (C18:2)	6.42	9.13	7.31	7.50
Linolenic Acid (C18:3)	0.870	1.22	0.959	1.12
Arachidic Acid (C20:0)	0.0522	0.0779	0.0565	0.0504
Eicosenoic Acid (C20:1)	0.0274	0.0391	0.0332	0.0299
Eicosadienoic Acid (C20:2)	0.00591	0.00663	0.00702	0.00671
Behenic Acid (C22:0)	0.0551	0.0810	0.0674	0.0618
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0209	0.0249	0.0232	0.0271
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207	<0.0207

**Table 5. Compositional Analyses of Seed Reference Substances (Continued)**

<b>Material Name</b>	<b>DP 5989</b>	<b>Hutcheson</b>	<b>USG 5601T</b>	<b>Fowler</b>
<b>Field Site</b>	NC	NC	NC	NC
<b>Replicate</b>	rep 3	rep 3	rep 3	rep 3
<b>Sample ID</b>	07017101-00641	07017101-00647	07017101-00653	07017101-00659
<b>EPL-BAS Job ID</b>	080320-0196	080320-0243	080320-0192	080320-0247
alpha-tocopherol (mg/kg)	57.4	59.9	30.2	31.9
Phytic Acid (%)	1.90	1.72	1.67	1.58
Trypsin Inhibitor (TIU/mg)	18.4	23.7	22.6	25.3
Raffinose (%)	1.08	1.01	1.30	0.904
Stachyose (%)	4.54	3.67	4.36	4.33
Daidzein (mg/kg)	207	301	553	1160
Genistein (mg/kg)	361	555	575	827
Glycitein (mg/kg)	98.6	120	102	111
Lectins (H.U./mg)	1.01	0.0904	1.46	0.194

**Table 6. Compositional Analyses of Seed Test Substance**

Material Name	MON 87701	MON 87701
Field Site	AL	AL
Replicate	rep 1	rep 2
Sample ID	07017101-00097	07017101-00099
EPL-BAS Job ID	080320-0248	080320-0246
<b>Proximates (%)</b>		
Moisture	6.86	7.01
Protein	39.1239	39.2721
Total Fat	21.5	21.1
Acid Detergent Fiber	14.9	12.7
Neutral Detergent Fiber	18.0	14.0
Ash	5.47	5.49
Carbohydrates	27.1	27.1
<b>Amino Acids (%)</b>		
Alanine	1.70	1.71
Aspartic Acid	4.87	4.89
Glumatic Acid	7.62	7.63
Proline	2.01	2.00
Serine	2.04	2.00
Tyrosine	1.19	1.24
Lysine	2.72	2.78
Arginine	2.79	2.74
Isoleucine	1.85	1.84
Histidine	1.10	1.08
Valine	1.93	1.92
Leucine	3.13	3.11
Threonine	1.60	1.57
Phenylalanine	2.31	2.23
Glycine	1.76	1.73
Methionine	0.541	0.523
Cystine	0.628	0.602
Tryptophan	0.482	0.463
<b>Fatty Acids (%)</b>		
Lauric Acid ( C12:0)	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0132	0.0142
Palmitic Acid ( C16:0)	1.54	1.69
Palmitoleic Acid (C16:1)	0.0140	0.0127
Heptadecanoic Acid (C17:0)	0.0128	0.0143
Heptadecenoic Acid (C17:1)	0.00601	0.00672
Stearic Acid (C18:0)	0.568	0.613
Oleic Acid (C18:1)	3.40	3.60
Linoleic Acid (C18:2)	6.29	7.02
Linolenic Acid (C18:3)	0.708	0.790
Arachidic Acid (C20:0)	0.0701	0.0754
Eicosenoic Acid (C20:1)	0.0271	0.0388
Eicosadienoic Acid (C20:2)	<0.00517	0.00636
Behenic Acid (C22:0)	0.0833	0.0873
Caprylic Acid (C8:0)	<0.0197	<0.0197
Capric Acid (C10:0)	0.0244	0.0253
Myristoleic Acid (C14:1)	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

<b>Material Name</b>	<b>MON 87701</b>	<b>MON 87701</b>
<b>Field Site</b>	AL	AL
<b>Replicate</b>	rep 1	rep 2
<b>Sample ID</b>	07017101-00097	07017101-00099
<b>EPL-BAS Job ID</b>	080320-0248	080320-0246
alpha-tocopherol (mg/kg)	74.3	70.5
Phytic Acid (%)	2.13	2.06
Trypsin Inhibitor (TIU/mg)	30.3	30.0
Raffinose (%)	0.458	0.525
Stachyose (%)	1.70	1.76
Daidzein (mg/kg)	176	201
Genistein (mg/kg)	200	228
Glycitein (mg/kg)	74.2	56.8
Lectins (H.U./mg)	0.325	0.0624

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

Material Name	MON 87701	MON 87701	MON 87701
Field Site	AR	AR	AR
Replicate	rep 1	rep 2	rep 3
Sample ID	07017101-00229	07017101-00231	07017101-00233
EPL-BAS Job ID	080320-0195	080320-0209	080320-0201
<b>Proximates (%)</b>			
Moisture	10.7	5.93	6.09
Protein	36.1343	36.1838	35.7692
Total Fat	16.5	16.3	16.5
Acid Detergent Fiber	15.1	15.9	14.9
Neutral Detergent Fiber	14.3	15.0	16.2
Ash	4.56	4.58	4.48
Carbohydrates	32.2	37.0	37.2
<b>Amino Acids (%)</b>			
Alanine	1.58	1.56	1.56
Aspartic Acid	4.57	4.47	4.40
Glumatic Acid	7.09	6.99	6.90
Proline	1.85	1.83	1.84
Serine	1.84	1.86	1.85
Tyrosine	0.962	0.977	1.06
Lysine	2.53	2.46	2.42
Arginine	2.40	2.42	2.46
Isoleucine	1.66	1.64	1.65
Histidine	1.00	1.03	1.04
Valine	1.75	1.74	1.75
Leucine	2.77	2.76	2.76
Threonine	1.45	1.46	1.47
Phenylalanine	1.86	1.91	1.95
Glycine	1.57	1.60	1.62
Methionine	0.513	0.520	0.478
Cystine	0.590	0.587	0.544
Tryptophan	0.482	0.488	0.450
<b>Fatty Acids (%)</b>			
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0122	0.0105	0.00932
Palmitic Acid ( C16:0)	1.72	1.46	1.30
Palmitoleic Acid (C16:1)	0.0130	0.0106	0.00823
Heptadecanoic Acid (C17:0)	0.0141	0.0121	0.0107
Heptadecenoic Acid (C17:1)	0.00680	0.00519	<0.00513
Stearic Acid (C18:0)	0.602	0.499	0.446
Oleic Acid (C18:1)	3.10	2.47	2.24
Linoleic Acid (C18:2)	7.92	6.79	6.14
Linolenic Acid (C18:3)	1.20	1.05	0.936
Arachidic Acid (C20:0)	0.0627	0.0523	0.0465
Eicosenoic Acid (C20:1)	0.0337	0.0285	0.0213
Eicosadienoic Acid (C20:2)	0.00684	<0.00517	<0.00517
Behenic Acid (C22:0)	0.0704	0.0587	0.0522
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0206	0.0216	0.0245
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

<b>Material Name</b>	<b>MON 87701</b>	<b>MON 87701</b>	<b>MON 87701</b>
<b>Field Site</b>	AR	AR	AR
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00229	07017101-00231	07017101-00233
<b>EPL-BAS Job ID</b>	080320-0195	080320-0209	080320-0201
alpha-tocopherol (mg/kg)	60.5	66.6	63.6
Phytic Acid (%)	1.59	1.51	1.62
Trypsin Inhibitor (TIU/mg)	20.9	21.7	22.5
Raffinose (%)	1.29	1.45	1.44
Stachyose (%)	5.13	5.15	5.47
Daidzein (mg/kg)	709	703	716
Genistein (mg/kg)	751	726	760
Glycitein (mg/kg)	171	174	162
Lectins (H.U./mg)	2.01	1.71	0.882

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

Material Name	MON 87701	MON 87701	MON 87701
Field Site	GA	GA	GA
Replicate	rep 1	rep 2	rep 3
Sample ID	07017101-00361	07017101-00363	07017101-00365
EPL-BAS Job ID	080320-0242	080320-0239	080320-0222
<b>Proximates (%)</b>			
Moisture	7.14	6.11	5.86
Protein	36.6096	36.4158	37.4361
Total Fat	19.4	19.9	19.1
Acid Detergent Fiber	13.9	12.7	13.3
Neutral Detergent Fiber	14.4	16.1	15.1
Ash	4.62	4.41	4.47
Carbohydrates	32.2	33.2	33.2
<b>Amino Acids (%)</b>			
Alanine	1.58	1.59	1.58
Aspartic Acid	4.47	4.51	4.58
Glumatic Acid	7.11	7.07	7.24
Proline	1.88	1.87	1.88
Serine	1.89	1.88	1.90
Tyrosine	1.18	1.01	1.13
Lysine	2.58	2.62	2.51
Arginine	2.70	2.55	2.60
Isoleucine	1.71	1.71	1.67
Histidine	1.08	1.06	1.09
Valine	1.80	1.80	1.77
Leucine	2.87	2.86	2.81
Threonine	1.50	1.51	1.47
Phenylalanine	2.18	2.11	1.99
Glycine	1.65	1.62	1.63
Methionine	0.450	0.513	0.514
Cystine	0.575	0.588	0.576
Tryptophan	0.476	0.474	0.504
<b>Fatty Acids (%)</b>			
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0126	0.0137	0.0127
Palmitic Acid ( C16:0)	1.56	1.71	1.52
Palmitoleic Acid (C16:1)	0.0133	0.0148	0.0142
Heptadecanoic Acid (C17:0)	0.0117	0.0127	0.0113
Heptadecenoic Acid (C17:1)	0.00557	0.00596	0.00525
Stearic Acid (C18:0)	0.694	0.753	0.720
Oleic Acid (C18:1)	3.13	3.29	3.18
Linoleic Acid (C18:2)	7.05	7.40	6.76
Linolenic Acid (C18:3)	0.981	1.07	0.961
Arachidic Acid (C20:0)	0.0766	0.0810	0.0784
Eicosenoic Acid (C20:1)	0.0324	0.0332	0.0322
Eicosadienoic Acid (C20:2)	0.00673	0.00569	0.00529
Behenic Acid (C22:0)	0.0821	0.0844	0.0828
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0255	0.0264	0.0324
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

<b>Material Name</b>	<b>MON 87701</b>	<b>MON 87701</b>	<b>MON 87701</b>
<b>Field Site</b>	<b>GA</b>	<b>GA</b>	<b>GA</b>
<b>Replicate</b>	<b>rep 1</b>	<b>rep 2</b>	<b>rep 3</b>
<b>Sample ID</b>	<b>07017101-00361</b>	<b>07017101-00363</b>	<b>07017101-00365</b>
<b>EPL-BAS Job ID</b>	<b>080320-0242</b>	<b>080320-0239</b>	<b>080320-0222</b>
alpha-tocopherol (mg/kg)	89.3	79.9	88.0
Phytic Acid (%)	1.59	1.32	1.31
Trypsin Inhibitor (TIU/mg)	20.1	23.7	21.6
Raffinose (%)	1.50	1.44	1.56
Stachyose (%)	4.61	4.58	4.14
Daidzein (mg/kg)	690	865	683
Genistein (mg/kg)	678	762	628
Glycitein (mg/kg)	165	184	161
Lectins (H.U./mg)	0.684	1.10	0.911

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

Material Name	MON 87701	MON 87701	MON 87701
Field Site	IL	IL	IL
Replicate	rep 1	rep 2	rep 3
Sample ID	07017101-00493	07017101-00495	07017101-00497
EPL-BAS Job ID	080320-0198	080320-0250	080320-0199
<b>Proximates (%)</b>			
Moisture	10.4	6.88	10.4
Protein	33.8086	35.7850	36.3581
Total Fat	17.1	18.4	16.4
Acid Detergent Fiber	14.5	13.9	14.3
Neutral Detergent Fiber	14.7	16.0	14.9
Ash	4.93	4.84	4.97
Carbohydrates	33.8	34.1	31.9
<b>Amino Acids (%)</b>			
Alanine	1.52	1.55	1.61
Aspartic Acid	4.24	4.36	4.66
Glumatic Acid	6.52	6.78	7.19
Proline	1.74	1.82	1.87
Serine	1.74	1.86	1.86
Tyrosine	1.01	0.996	0.994
Lysine	2.42	2.56	2.60
Arginine	2.23	2.45	2.42
Isoleucine	1.56	1.64	1.66
Histidine	0.973	1.03	1.01
Valine	1.66	1.75	1.77
Leucine	2.58	2.76	2.76
Threonine	1.40	1.48	1.46
Phenylalanine	1.74	2.06	1.87
Glycine	1.53	1.62	1.61
Methionine	0.501	0.504	0.443
Cystine	0.584	0.603	0.519
Tryptophan	0.477	0.483	0.475
<b>Fatty Acids (%)</b>			
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0120	0.0115	0.0109
Palmitic Acid ( C16:0)	1.56	1.47	1.44
Palmitoleic Acid (C16:1)	0.0123	0.0117	0.0122
Heptadecanoic Acid (C17:0)	0.0126	0.0119	0.0117
Heptadecenoic Acid (C17:1)	0.00543	0.00536	0.00568
Stearic Acid (C18:0)	0.653	0.605	0.631
Oleic Acid (C18:1)	2.98	2.77	2.90
Linoleic Acid (C18:2)	6.93	6.66	6.49
Linolenic Acid (C18:3)	1.04	0.985	0.941
Arachidic Acid (C20:0)	0.0686	0.0635	0.0670
Eicosenoic Acid (C20:1)	0.0315	0.0293	0.0310
Eicosadienoic Acid (C20:2)	0.00729	0.00609	0.00592
Behenic Acid (C22:0)	0.0717	0.0673	0.0709
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0217	0.0246	0.0221
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

<b>Material Name</b>	<b>MON 87701</b>	<b>MON 87701</b>	<b>MON 87701</b>
<b>Field Site</b>	IL	IL	IL
<b>Replicate</b>	rep 1	rep 2	rep 3
<b>Sample ID</b>	07017101-00493	07017101-00495	07017101-00497
<b>EPL-BAS Job ID</b>	080320-0198	080320-0250	080320-0199
alpha-tocopherol (mg/kg)	58.6	59.2	65.1
Phytic Acid (%)	1.90	1.75	1.99
Trypsin Inhibitor (TIU/mg)	28.6	20.8	24.2
Raffinose (%)	1.52	1.31	1.52
Stachyose (%)	5.61	5.10	5.75
Daidzein (mg/kg)	881	796	748
Genistein (mg/kg)	774	675	663
Glycitein (mg/kg)	205	153	182
Lectins (H.U./mg)	1.08	0.206	1.65

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

Material Name	MON 87701	MON 87701	MON 87701
Field Site	NC	NC	NC
Replicate	rep 1	rep2	rep 3
Sample ID	07017101-00625	07017101-00627	07017101-00629
EPL-BAS Job ID	080320-0229	080320-0220	080320-0219
<b>Proximates (%)</b>			
Moisture	7.21	7.33	7.08
Protein	33.8632	34.3864	34.8053
Total Fat	19.5	33.7	19.7
Acid Detergent Fiber	15.2	15.8	14.9
Neutral Detergent Fiber	17.6	20.2	18.3
Ash	4.68	4.56	4.64
Carbohydrates	34.8	20.0	33.8
<b>Amino Acids (%)</b>			
Alanine	1.55	1.54	1.56
Aspartic Acid	4.41	4.27	4.35
Glumatic Acid	6.81	6.72	6.78
Proline	1.73	1.78	1.75
Serine	1.76	1.81	1.84
Tyrosine	0.890	1.01	0.955
Lysine	2.30	2.34	2.47
Arginine	2.19	2.33	2.21
Isoleucine	1.56	1.62	1.58
Histidine	0.970	1.03	0.984
Valine	1.67	1.71	1.69
Leucine	2.62	2.67	2.64
Threonine	1.39	1.44	1.40
Phenylalanine	1.77	1.90	1.79
Glycine	1.51	1.58	1.55
Methionine	0.452	0.466	0.493
Cystine	0.528	0.524	0.552
Tryptophan	0.437	0.460	0.471
<b>Fatty Acids (%)</b>			
Lauric Acid ( C12:0)	<0.00505	<0.00505	<0.00505
Myristic Acid (C14:0)	0.0146	0.0132	0.0133
Palmitic Acid ( C16:0)	1.78	1.71	1.67
Palmitoleic Acid (C16:1)	0.0125	0.0125	0.0114
Heptadecanoic Acid (C17:0)	0.0131	0.0131	0.0129
Heptadecenoic Acid (C17:1)	0.00532	0.00552	0.00520
Stearic Acid (C18:0)	0.647	0.630	0.589
Oleic Acid (C18:1)	2.90	2.84	2.61
Linoleic Acid (C18:2)	7.89	7.56	7.41
Linolenic Acid (C18:3)	1.07	1.03	1.04
Arachidic Acid (C20:0)	0.0728	0.0692	0.0658
Eicosenoic Acid (C20:1)	0.0381	0.0336	0.0322
Eicosadienoic Acid (C20:2)	0.00622	0.00576	0.00596
Behenic Acid (C22:0)	0.0823	0.0774	0.0738
Caprylic Acid (C8:0)	<0.0197	<0.0197	<0.0197
Capric Acid (C10:0)	0.0348	0.0351	0.0342
Myristoleic Acid (C14:1)	<0.0203	<0.0203	<0.0203
Pentadecanoic Acid ( C15:0)	<0.0204	<0.0204	<0.0204
Pentadecenoic Acid ( C15:1)	<0.0204	<0.0204	<0.0204
Gamma Linolenic Acid ( C18:3 gamma)	<0.0206	<0.0206	<0.0206
Eicosatrienoic Acid (C20:3)	<0.0207	<0.0207	<0.0207
Arachidonic Acid (C20:4)	<0.0207	<0.0207	<0.0207
Erucic Acid ( C22:1)	<0.0207	<0.0207	<0.0207

**Table 6. Compositional Analyses of Seed Test Substance (Continued)**

<b>Material Name</b>	<b>MON 87701</b>	<b>MON 87701</b>	<b>MON 87701</b>
<b>Field Site</b>	NC	NC	NC
<b>Replicate</b>	rep 1	rep2	rep 3
<b>Sample ID</b>	07017101-00625	07017101-00627	07017101-00629
<b>EPL-BAS Job ID</b>	080320-0229	080320-0220	080320-0219
alpha-tocopherol (mg/kg)	76.0	71.5	70.5
Phytic Acid (%)	1.57	1.64	1.70
Trypsin Inhibitor (TIU/mg)	22.8	23.2	23.1
Raffinose (%)	1.14	1.33	1.37
Stachyose (%)	4.01	4.30	4.39
Daidzein (mg/kg)	573	609	660
Genistein (mg/kg)	620	677	694
Glycitein (mg/kg)	137	172	212
Lectins (H.U./mg)	0.525	1.74	0.619

**APPENDIX A**  
**Analytical Method Summaries**

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## **SOY FORAGE ANALYTICAL METHOD SUMMARIES**

### **Ash (SOP-SE-2)**

Subsamples of ground forage (3 grams) are ignited in a muffle furnace for three hours at 650°C. The weight of the ash residue remaining after ignition is determined gravimetrically. There is no analytical reference substance for this analysis. Ash results are expressed on a percent fresh weight basis.

#### Reference:

AOAC International Method 923.03 (2000). In Official Methods of Analysis of AOAC International, 17<sup>th</sup> Edition. Association of Official Analytical Chemists International, Gaithersburg, MD.

### **Carbohydrates (CHO)**

Total carbohydrate content is calculated by difference using the fresh weight-derived data and the formula presented below. There is no analytical reference substance for this analysis.

$$\text{Carbohydrates (\%)} = 100 - \text{Moisture (\%)} - \text{Ash (\%)} - \text{Fat (\%)} - \text{Protein (\%)}$$

#### Reference:

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

### **Crude Fat (SOP-SE-1)**

Subsamples of ground forage (2 grams) were dried in an oven for at least 2 hours. The crude fat content is determined gravimetrically after acid hydrolysis and extraction with mixed ethers. There is no analytical reference substance for this analysis. Fat results are expressed on a percent fresh weight basis.

#### Reference:

AOAC International Method 922.06 (2000). In Official Methods of Analysis of AOAC International, 17<sup>th</sup> Edition. Association of Official Analytical Chemists International, Gaithersburg, MD.

### **Moisture (SOP-SE-25)**

Moisture content is determined gravimetrically. Subsamples (2 grams) of ground forage are dried to a constant weight in a forced air oven at 135°C for at least 2 hours. Moisture results are expressed on a percent of fresh weight basis. There is no analytical reference substance for this analysis.

#### Reference:

AOAC International Method 930.15 (2000). In *Official Methods of Analysis of AOAC International*, 17<sup>th</sup> Edition. Association of Official Analytical Chemists International, Gaithersburg, MD.

### **Crude Protein (SOP-SE-20)**

Protein content is determined using an automated Kjeldahl technique. A Foss-Tecator 2300 Kjeltac Analyzer Unit is used. Samples are manually digested on a heating block using sulfuric acid and a selenium catalyst then transferred to the analyzer unit where the digests are distilled and titrated. The protein content is calculated by multiplying the amount of nitrogen in the sample by 6.25. Ammonium sulfate is used as an analytical reference substance to verify the accuracy of the distillation step performed by the analyzer unit. The ammonium sulfate reference standard is obtained from Fisher Scientific (Fairlawn, NJ) and has a nitrogen content of 21.0%. The lot number is 043629. Protein results are expressed on a percent fresh weight basis.

#### Reference:

Foss-Tecator (1999). *Foss-Tecator Kjeltac 2300 Site Preparation, Installation, and Operating Guide*, Foss-Tecator AB, Box 70, S-263 21 Hoganos, Sweden.

### **Acid Detergent Fiber (SE-3)**

Subsamples of ground forage are analyzed to determine the percentage of acid detergent fiber (ADF) by digesting with an acid detergent solution and washing with water. The remaining residue is dried and weighed to determine ADF content. Samples are analyzed with the Ankom Extraction Apparatus. There is no analytical reference substance for this analysis. ADF results are expressed on a percent fresh weight basis.

Reference:

Ankom Technology (1999). ANKOM<sup>200</sup> Fiber Analyzer Operator's Manual, Ankom Technology, 140 Turk Hill Park, Fairport, NY 14450.

**Neutral Detergent Fiber (SE-9)**

Subsamples of ground forage are analyzed to determine the percentage of neutral detergent fiber (NDF) by digesting with a neutral detergent solution, sodium sulfite and alpha amylase. The remaining residue is dried and weighed to determine NDF content. Samples are analyzed with the Ankom Extraction Apparatus. There is no analytical reference substance for this analysis. NDF results are expressed on a percent fresh weight basis.

Reference:

Ankom Technology (1999). ANKOM<sup>200</sup> Fiber Analyzer Operator's Manual, Ankom Technology, 140 Turk Hill Park, Fairport, NY 14450.

## **SOY SEED ANALYTICAL METHOD SUMMARIES**

### **Ash (SOP-SE-2)**

Subsamples of ground soy seed are ignited in a muffle furnace for three hours at 650°C. The weight of the ash residue remaining after ignition is determined gravimetrically. There is no analytical reference substance for this analysis. Ash results are expressed on a percent fresh weight basis.

#### Reference:

AOAC International Method 923.03 (2000). In Official Methods of Analysis of AOAC International, 17<sup>th</sup> Edition. Association of Official Analytical Chemists International, Gaithersburg, MD.

### **Carbohydrates (CHO)**

Total carbohydrate content is calculated by difference using the fresh weight-derived data and the formula presented below. There is no analytical reference substance for this analysis.

$$\text{Carbohydrates (\%)} = 100 - \text{Moisture (\%)} - \text{Ash (\%)} - \text{Fat (\%)} - \text{Protein (\%)}$$

#### Reference:

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

### **Crude Fat (SOP-SE-27)**

Subsamples of ground soy seed are extracted for 16 hours with pentane using soxhlet extraction apparatus. The pentane extract is evaporated to dryness and the crude fat residue is determined gravimetrically. There is no analytical reference standard for this analysis. Fat results are expressed on a percent fresh weight basis.

#### Reference:

AOAC International Method 960.39 (2000). In Official Methods of Analysis of AOAC International, 17<sup>th</sup> Edition. Association of Official Analytical Chemists International, Gaithersburg, MD.

#### **Moisture (SOP-SE-4)**

Moisture content is determined gravimetrically. Subsamples (2 grams) of ground soy seed are dried to a constant weight in a vacuum oven at 100°C and 25 inches of mercury pressure for 15 hours. Moisture results are expressed on a percent of fresh weight basis. There is no analytical reference substance for this analysis.

#### Reference:

AOAC International Method 925.09 (2000). In Official Methods of Analysis of AOAC International, 17<sup>th</sup> Edition. Association of Official Analytical Chemists International, Gaithersburg, MD.

#### **Crude Protein (SOP-SE-20)**

Protein content is determined using an automated Kjeldahl technique. A Foss-Tecator 2300 Kjeltex Analyzer Unit is used. Samples are manually digested on a heating block using sulfuric acid and a selenium catalyst then transferred to the analyzer unit where the digests are distilled and titrated. The protein content is calculated by multiplying the amount of nitrogen in the sample by 6.25. Ammonium sulfate is used as an analytical reference substance to verify the accuracy of the distillation step performed by the analyzer unit. The ammonium sulfate reference substance is obtained from Fisher Scientific (Fairlawn, NJ) lot number 043629 and has a nitrogen content of 21.0%. Protein results are expressed on a percent fresh weight basis.

#### Reference:

Foss-Tecator (1999) *Foss-Tecator Kjeltex 2300 Site Preparation, Installation, and Operating Guide*, Foss-Tecator AB, Box 70, S-263 21 Hoganas, Sweden.

#### **Acid Detergent Fiber (SE-3)**

Subsamples of ground soy seed are analyzed to determine the percentage of acid detergent fiber (ADF) by digesting with an acid detergent solution and washing with water. The remaining residue is dried and weighed to determine ADF content. Samples are analyzed with the Ankom Extraction Apparatus. There is no analytical reference substance for this analysis. ADF results are expressed on a percent fresh weight basis.

#### Reference:

Ankom Technology (1999). ANKOM<sup>200</sup> Fiber Analyzer Operator's Manual, Ankom Technology, 140 Turk Hill Park, Fairport, NY 14450.

### **Neutral Detergent Fiber (SE-9)**

Subsamples of ground soy seed are analyzed to determine the percentage of neutral detergent fiber (NDF) by digesting with a neutral detergent solution, sodium sulfite and alpha amylase. The remaining residue is dried and weighed to determine NDF content. Samples are analyzed with the Ankom Extraction Apparatus. There is no analytical reference substance for this analysis. ADF results are expressed on a percent fresh weight basis.

#### Reference:

Ankom Technology (1999). ANKOM<sup>200</sup> Fiber Analyzer Operator's Manual, Ankom Technology, 140 Turk Hill Park, Fairport, NY 14450.

### **Tryptophan (SE-22)**

Subsamples of ground soy seed are analyzed to determine the amount of tryptophan by hydrolyzing with 4M LiOH and diluting to 50 mL with deionized water. Samples are filtered and analyzed by reverse phase High Performance Liquid Chromatography (HPLC) with ultra-violet (UV) detection. L-Tryptophan is used as the analytical reference substance to verify the accuracy of the method and HPLC. The L-Tryptophan analytical reference substance is purchased from Sigma, has a purity of >99% and lot number 026K0375. The limit of quantitation (LOQ) is 0.125 %. Tryptophan results are expressed on a percent fresh weight basis.

#### Reference:

Tagers, S.R.; Pesti, G.M. 1990. "Determination of Tryptophan from Feedstuffs Using Reverse Phase High-Performance Liquid Chromatography". *Journal of Micronutrient Analysis*. 7:27-35.

### **Amino Acids (SE-58)**

Subsamples of ground soy seed are analyzed to determine the amount of the 15 amino acids by converting the free acids, after acid hydrolysis, to the 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate derivatives. Samples are then analyzed by reverse phase Ultra Performance Liquid Chromatography (UPLC) with UV detection. The following amino acids are used as analytical reference substances to verify the accuracy of the method and UPLC:

L-Alanine – lot number 443129/1 and purity 100%. LOQ is 0.375 %.

L-Arginine Hydrochloride – lot number 095K0089 and purity >99%. LOQ is 0.310 %.  
L-Aspartic Acid (Free Acid) – lot number 093K01502 and purity >99%. LOQ is 0.375 %.  
L-Glutamic Acid (Free Acid) – lot number 085K0713 and purity >99%. LOQ is 0.375 %.  
Glycine (Free Base) – lot number 034K0166 and purity >99%. LOQ is 0.375 %.  
L-Histidine Monohydrochloride Monohydrate – lot number 114K0378 and purity >99%.  
LOQ is 0.278 %.  
L-Isoleucine – lot number 065K0231 and purity >99%. LOQ is 0.375 %.  
L-Leucine – lot number 045K0387 and purity >99%. LOQ is 0.375 %  
L-Lysine Monohydrochloride – lot number 067K0078 and purity 99.4%. LOQ is 0.300%.  
L-Phenylalanine – lot number 1166794 and purity 100%. LOQ is 0.375 %.  
L-Proline- lot number 106K0128 and purity 98.9%. LOQ is 0.370 %.  
L-Serine – lot number 077K0015 and purity 99.5%. LOQ is 0.375 %.  
L-Threonine – lot number 095K0374 and purity >99%. LOQ is 0.375 %.  
L-Tyrosine (Free Base) – lot number 075K0015 and purity 100%. LOQ is 0.375 %.  
L-Valine – lot number 095K0378 and purity >99%. LOQ is 0.375 %.  
L-Alpha-Amino-N-Butyric Acid - lot number 126K2666 and purity 100%. No LOQ.  
The amino acid analytical reference substances are purchased from Sigma. The amino acids results are expressed on a percent fresh weight basis.

References:

Hong, Ji Liu (1994). “Determination of Amino Acids by Precolumn Derivatization 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate and Ultra-Performance Liquid Chromatography with Ultraviolet Detection”. Journal of Chromatography A, 670 (1994), 59-66.

Waters Method, Analysis of Amino Acids in Feeds and Foods Using Modification of the ACCQ•Tag Method™ for Amino Acid Analysis.

**Cystine and Methionine (SE-59)**

Subsamples of ground soy seed are analyzed to determine the amount of cystine and methionine by converting the cystine to cysteic acid and methionine to methionine sulfone after acid oxidation and hydrolysis, to the 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate derivatives. Samples are then analyzed by reverse phase UPLC with UV detection. The LOQ is 0.0417 %. The following analytical reference substances are used to verify the method and UPLC:

L-Cysteic Acid - lot number 1215898 and purity 99.3%

L-Methionine Sulfone - lot number 116K1146 and purity 100%

L-Cystine - lot number 037K0148 and purity 100 %

L-Methionine - lot number 074K0372 and purity >99%

The analytical reference substances are purchased from Sigma. The cystine and methionine results are expressed on a percent fresh weight basis.

**References:**

Hong, Ji Liu (1994). "Determination of Amino Acids by Precolumn Derivatization 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate and Ultra-Performance Liquid Chromatography with Ultraviolet Detection". Journal of Chromatography A, 670 (1994), 59-66.

Waters Method, Analysis of Amino Acids in Feeds and Foods Using Modification of the ACCQ•Tag Method™ for Amino Acid Analysis.

**Fatty Acid (SE-45)**

Subsamples of ground soy seed are analyzed to determine the fatty acid content by using a soxhlet extraction apparatus. The fatty acids are derivatized into methyl esters with boron trifluoride/methanol. The methyl esters are then assayed by Gas Chromatography (GC) with Flame Ionization Detection (FID). The following analytical reference substances are used to verify the method and the GC:

Fatty Acid Methyl Ester (FAME) Standard (Major Acids) 0.5% C12:0 (LOQ = 0.00505%), 0.5% C14:0 (LOQ = 0.00509%), 10% C16:0 (LOQ = 0.102%), 0.5% C16:1 (LOQ = 0.00512%), 0.5% C17:0 (LOQ = 0.00513%), 0.5% C17:1 (LOQ = 0.00513%), 4% C18:0 (LOQ = 0.0412%), 20% C18:1 (LOQ = 0.206%), 51% C18:2 (LOQ = 0.00926%), 9% C18:3 (LOQ = 0.00165%), 0.5% C20:0 (LOQ = 0.00517%), 0.5% C20:1 (LOQ = 0.00517%), 0.5% C20:2 (LOQ = 0.00517%), and 1% C22:0 (LOQ = 0.0104%), lot number N15-P

FAME Reference Standard (Minor Acids), 10% C8:0 (LOQ = 0.0197%), 10% C10:0 (LOQ = 0.0200%), 10% C14:1 (LOQ = 0.0203%), 10% C15:0 (LOQ = 0.0204%), 10% C15:1 (LOQ = 0.0204%), 10% C17:1 (0.00513%), 10% C18:2 (0.00926%), 10% C18:3 (GLA) (LOQ = 0.0206), 10% C20:3 (LOQ = 0.0207%), 10% C20:4 (LOQ = 0.0207%), and 10% C22:1 (LOQ = 0.0207%, lot number N15-P

Tridecanoic Acid (C13:0) - lot number N-13A-JY10-Q and purity >99%. No LOQ.

Methyl Tridecanoate - lot number N-13M-MA12-R and purity >99%. No LOQ.

The analytical reference substances are purchased from Nu-Chek Prep. The fatty acid results are reported on a percent fresh weight basis.

Reference:

AOAC International Method 939.05 (2000). In Official Methods of Analysis of the AOAC International, 17<sup>th</sup> Edition. Association of Official Analytical Chemists International, Gaithersburg, Maryland.

**Trypsin Inhibitor (SE-12)**

Subsamples of ground soy seed are analyzed to determine trypsin inhibitor content by extracting with sodium hydroxide. Trypsin is added and reacted with the trypsin inhibitor. The amount of trypsin present in the sample is measured using a spectrophotometer, and the amount of inhibitor is calculated based on how much trypsin remains. The Trypsin reference substance was purchased from MP Biomedicals. The activity is 245  $\mu$ /mg and the lot number is 5432H. There is no LOQ. The trypsin results are reported on a percent fresh weight basis.

Reference:

Anonymous 1997. Trypsin Inhibitor Activity. Official Methods and Recommended Practices of AOCS, Ba 12-75.

**Phytic Acid (SE-10)**

Subsamples of ground soy seed are analyzed to determine the amount of phytic acid by extracting the phytic acid with dilute hydrochloric acid and isolating it using an ion-exchange solid phase extraction column. Once isolated and eluted, the phytic acid is analyzed for elemental phosphorus by inductively coupled plasma optical emission spectroscopy (ICP-OES). The phytic acid content is then calculated from the phosphorus concentration. The LOQ is 0.355%. The following analytical reference substances are used to verify the method and the ICP-OES:

Phosphorus Standard - lot number SC7061617 and concentration 10,050  $\mu$ g/mL

Yttrium Standard – lot number SC7192512 and concentration 1001  $\mu$ g/mL

Phytic Acid Standard - lot number 035K0590 and purity 97%.

The phosphorus and yttrium were purchased from SCP Science Solution and the phytic acid from Sigma. Phytic acid is reported on a percent fresh weight basis.

Reference:

Anonymous 1988. Phytic Acid in Foods. Official Methods of Analysis of AOAC International, Vol. 2.32.5.18.

**Lectins (SE-49)**

Subsamples of ground soy seed are analyzed to determine the amount of lectin by extracting the lectin with potassium phosphate buffer. Lectin was assayed using a hemagglutination test using rabbit red blood cells. The amount of hemagglutination was measured by the amount of turbidity using a spectrophotometer. There are no reference substances and LOQ for the assay. Lectin is reported on a percent fresh weight basis.

Reference:

Leiner, Irvin, E. 1954. *The Photometric Determination of the Hemagglutination Activity of Soyin and Crude Soybean Extracts*. Scientific Journal Series, Minnesota Agricultural Experiment Station.

**Isoflavones (SE-56)**

Subsamples of ground soy seed are analyzed to determine the amount of aglycones by extracting the aglycones with ethanol and hydrochloric acid. The extract is cleaned up using a C18 Sep-PAK and assayed by reverse phase HPLC with UV detection. The LOQ is 10.00 mg/Kg. The following analytical reference substances were used to verify the method and HPLC: Daidzein - lot number DA-120 and purity >99%,  
Genistein - lot number CH-147 and purity >99%  
Glycitein - lot number 0306103 and purity 97%.

The analytical reference substances daidzein and genistein are purchased from LC Laboratories and glycitein was purchased from Indofine Chemical Company, Inc. Isoflavones are reported on a percent fresh weight basis.

Reference:

Pettersson, H., and Kiessling, K.H., "Liquid Chromatographic Determination of the Plant Estrogens Coumestrol and Isoflavones in Animal Feed." *Association of Analytical Chemist Journal*, 67 (3):503-506 (1984).

Seo, A., and Morr, C.V., "Improved High Performance Liquid Chromatographic Analysis of Phenolic Acids and Isoflavoids from Soybean Protein Products." *J. Agric. Food Chem.*, 32: 530-533 (1984).

**Stachyose/Raffinose (SOP SE-40)**

Subsamples of ground soy seed are analyzed to determine the amount of stachyose and raffinose by extracting with methanol/DI water, partitioning with chloroform and evaporating to dryness. The sample residue is redissolved in DI water and analyzed by reverse phase HPLC with refractive index detection. The following analytical reference substances were used to verify the method and HPLC:

Stachyose Hydrate - lot number 065K3775 and purity 98%. The LOQ is 0.260%

Raffinose Pentahydrate - lot number 035K1371 and purity 99%. The LOQ is 0.200%.

The analytical reference substances were purchased from Sigma. Stachyose and raffinose are reported on a percent fresh weight basis.

Reference:

Anonymous 1985, "Determination of Simple Sugars in Cereal Products – HPLC Method". *Approved Methods of the Association of Cereal Chemists, Volume II*, 80-04.

Johansen, Helle Nygaard; Glisto, Vibe; Knudsen, Erik Bach. 1996. Influence of Extraction Solvent and Temperature on the Quantitative Determination of Oligosaccharides from Plant Materials by High-Performance Liquid Chromatography. *J. Agric. Food Chem.*, 44, 1470-1474.

**Vitamin E ( $\alpha$ -tocopherol) (SOP-SE-42)**

Subsamples of ground soy seed are analyzed to determine the amount  $\alpha$ -tocopherol by extracting with hexane. The hexane extract is analyzed by HPLC with fluorescence detection. The following analytical reference substance was used to verify the method and HPLC: Alpha Tocopherol. The analytical reference substance was purchased from Sigma and has a purity of 97%. The lot number is 066K0667. The LOQ is 2.00 mg/Kg. Alpha tocopherol is reported on a percent fresh weight basis.

Reference:

Anonymous 1984, "High Performance Liquid Chromatography of the Tocols in Corn Grain". *JAOCS*, Vol. 61 No. 7, July 1984.

**Appendix 2: Monsanto Company Statistical Sub-Report**

**Compositional Analyses of Forage and Seed Collected from  
MON 87701 Grown in United States during 2007**

The following 56 pages are the statistical sub-report  
Pages 98 – 153

## STATISTICAL REPORT

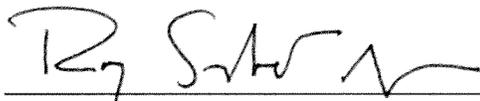
### Compositional Analyses of Forage and Seed Collected from MON 87701 Grown in United States during 2007

**This report reflects data developed and reported in Study Number REG-08-065**

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## 1. Data Description

A SAS<sup>®</sup> dataset (datag457v2.sas7bdat, created 9/11/2008) containing soybean forage and seed compositional analysis data was received from Monsanto. Data were from test substance MON 87701, additional test substance Test 2, conventional control substance A5547, and twenty commercial conventional reference substances.

Soybean forage and seed of the test, control, and reference substances were collected from replicated plots at five U.S. sites during 2007. Test and control substances were planted in a randomized complete block design. Samples were unavailable for one replicate of MON 87701 at Site AL and one replicate of A5547 at Site NC. Reference substances were distributed as follows across sites:

Site AL	Site AR	Site GA	Site IL	Site NC
A5843, A5959, CMA 5804AOC, H6686	Anand, Ozark, Hornbeck C5894, UA 4805	A5403, A5560, CMC 5901COC, LEE 74	A4922, A5427, H4994, H5218	DP 5989, Fowler, Hutcheson, USG 5601T

Analytes with greater than fifty percent of observations below the assay's limit of quantitation (LOQ) were excluded from analysis. Excluded analytes are presented in Listing 1. Otherwise, results below the LOQ were assigned a value equal to half the LOQ. The following analytes were assigned values:

Analyte	Units	Obs. Below LOQ		Total N	LOQ	Value Assigned
		N	(%)			
<b>Seed Fatty Acid</b>						
17:1 Heptadecenoic Acid	% FW	8	12.7	63	0.0051	0.0026
20:2 Eicosadienoic Acid	% FW	9	14.3	63	0.0052	0.0026

Individual samples assigned a value are presented in Listing 2.

<sup>®</sup> SAS is a registered trademark of SAS Institute Inc.

The following formulas were used for re-expression of soybean composition data for statistical analysis:

Analyte	From (X)	To	Formula <sup>1</sup>
Proximates (excluding Moisture), Fiber, Phytic Acid, Raffinose, Stachyose, Amino Acids (AA)	% FW	% DW	X/d
Isoflavones	mg/kg FW	mg/kg DW	X/d
Trypsin Inhibitor	TIU/mg FW	TIU/mg DW	X/d
Vitamin E	mg/kg FW	mg/100g DW	X/(10*d)
Fatty Acids (FA)	% FW	% Total FA	(100)X <sub>j</sub> /ΣX, for each FA <sub>j</sub> where ΣX is over all the FA

<sup>1</sup> 'X' is the individual sample value; 'd' is the fraction of the sample that is dry matter.

## 2. Statistical Methods

The SAS<sup>1</sup> GLM procedure was applied to all data (test, control and reference) to detect potential outliers in the dataset by screening studentized PRESS residuals. Substance, site and replication effects were included in the model.

A PRESS residual<sup>2</sup> is the difference between any value and its predicted value from a statistical model that excludes the data point. The studentized version scales these residuals so that the values tend to have a standard normal distribution when outliers are absent. Thus, most values are expected to be between ± 3. Extreme data points that are also outside of the ± 6 studentized PRESS residual range are considered for exclusion, as outliers, from the final analyses. The following results had PRESS residual values outside of ± 6 range:

Site	Rep	Description	Analyte	ID	Sent Value	Value	PRESS Std Residual
<b>Forage Proximate</b>							
GA	2	CMC 5901COC	Moisture	07017101-00329	38.6	38.6000	-11.4687
<b>Seed Proximate</b>							
NC	2	MON 87701	Total Fat	07017101-00627	33.7	36.3656	9.6571

Both identified values were considered outliers and were removed from further analysis. Because moisture content is required for unit re-expression of forage composition data, all additional forage composition data associated with the outlier moisture sample were additionally removed.

The outlier test procedure was reapplied to all remaining moisture and total fat data to detect potential outliers that were masked in the first analysis. No further PRESS residuals were outside of ± 6 range.

All soybean compositional analytes were statistically analyzed using a mixed model analysis of variance. The five replicated sites were analyzed both separately and combined. Individual replicated site analyses used model (1).

$$(1) Y_{ij} = U + T_i + B_j + e_{ij},$$

where  $Y_{ij}$  = unique individual observation,  $U$  = overall mean,  $T_i$  = substance effect,  $B_j$  = random block effect, and  $e_{ij}$  = residual error.

Combined site analyses used model (2).

$$(2) Y_{ijk} = U + T_i + L_j + B(L)_{jk} + LT_{ij} + e_{ijk},$$

where  $Y_{ijk}$  = unique individual observation,  $U$  = overall mean,  $T_i$  = substance effect,  $L_j$  = random location effect,  $B(L)_{jk}$  = random block within location effect,  $LT_{ij}$  = random location by substance interaction effect, and  $e_{ijk}$  = residual error.

A tolerance interval is an interval that one can claim, with a specified degree of confidence, contains at least a specified proportion,  $p$ , of an entire sampled population for the parameter measured.

For each compositional analyte, 99% tolerance intervals were calculated that are expected to contain, with 95% confidence, 99% of the quantities expressed in the population of commercial conventional substances. Each tolerance interval estimate was based upon one observation per unique reference substance. Because negative quantities are not possible, negative calculated lower tolerance bounds were set to zero.

### 3. Statistical Results

SAS software was used to generate all summary statistics and perform all analyses. Report tables present p-values from SAS as either <0.001 or the actual value truncated to three decimal places.

Statistical results are summarized for MON 87701 vs. the control in Tables 1 through 12. For each analyte, least-square means, standard errors (S.E.), and the range of observed values are presented for each substance. Mean differences, standard errors of the differences, the range of observed differences, 95% confidence intervals for the mean differences and the significance probability are presented for each comparison. In addition, the range of the observed reference values and 99% tolerance intervals are presented.

Analytes with a statistically significant comparison ( $p < 0.05$ ) for MON 87701 vs. the control are further summarized in Table 13.

Numbers of significant comparisons ( $p < 0.05$ ) observed are summarized below.

		<b>No. of Significant Comparisons</b>
<b>Site</b>	<b>Comparisons Tested</b>	<b>MON 87701 vs. Control (A5547)</b>
AL	55	2
AR	55	5
GA	55	10
IL	55	8
NC	55	7
Combined	55	15

#### 4. References

1. SAS Software Release 9.1 (TS1M3). Copyright (c) 2002-2003 by SAS Institute Inc., Cary, NC, USA.
2. Belsley, D. A., Kuh, E., Welsch, R. E. 1980. Regression Diagnostics: Identifying Influential Data and Sources of Collinearity. John Wiley & Sons, New York.

**Table 1. Statistical Summary of Site AL Soybean Forage Fiber and Proximate Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	34.43 (3.22) [30.04 - 38.83]	39.77 (2.63) [37.44 - 42.06]	-5.34 (4.15) [-12.02 - 1.39]	-18.56, 7.88	0.288	(27.99 - 47.33) [14.93, 56.87]
Neutral Detergent Fiber (% DW)	46.71 (7.87) [42.49 - 49.59]	48.02 (6.52) [42.05 - 59.19]	-1.31 (9.17) [-9.60 - -0.31]	-30.47, 27.86	0.895	(30.96 - 54.55) [21.51, 66.01]
<b>Proximate</b>						
Ash (% DW)	5.52 (0.51) [5.05 - 5.98]	7.27 (0.42) [6.24 - 8.13]	-1.76 (0.66) [-1.47 - -1.19]	-3.85, 0.34	0.076	(4.77 - 8.54) [2.46, 10.14]
Carbohydrates (% DW)	69.48 (1.72) [68.29 - 71.06]	66.97 (1.46) [63.68 - 69.20]	2.51 (1.86) [1.86 - 4.62]	-3.41, 8.43	0.270	(60.61 - 77.26) [56.93, 85.88]
Moisture (% FW)	74.24 (0.91) [72.70 - 75.40]	76.93 (0.78) [75.00 - 78.10]	-2.69 (0.95) [-2.30 - -2.30]	-5.70, 0.32	0.065	(66.50 - 80.20) [57.84, 88.56]
Protein (% DW)	19.86 (1.92) [19.72 - 19.92]	19.84 (1.57) [17.94 - 23.29]	0.026 (2.41) [-3.57 - 1.98]	-7.65, 7.70	0.992	(12.68 - 22.92) [7.05, 27.27]
Total Fat (% DW)	4.90 (0.56) [3.96 - 5.85]	5.98 (0.46) [5.61 - 6.72]	-1.08 (0.72) [-2.76 - 0.25]	-3.37, 1.22	0.232	(3.48 - 7.88) [1.11, 9.11]

<sup>1</sup>DW = dry weight; FW = fresh weight; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 2. Statistical Summary of Site AL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Alanine (% DW)	1.83 (0.036) [1.83 - 1.84]	1.81 (0.030) [1.81 - 1.82]	0.018 (0.047) [0.018 - 0.020]	-0.13, 0.17	0.731	(1.66 - 1.93) [1.49, 2.02]
Arginine (% DW)	2.97 (0.081) [2.95 - 3.00]	2.79 (0.067) [2.72 - 2.89]	0.18 (0.11) [0.056 - 0.28]	-0.15, 0.52	0.180	(2.54 - 2.99) [2.22, 3.25]
Aspartic Acid (% DW)	5.28 (0.11) [5.23 - 5.26]	5.27 (0.095) [5.15 - 5.34]	0.013 (0.12) [-0.11 - 0.11]	-0.36, 0.39	0.916	(4.74 - 5.50) [4.22, 5.96]
Cystine (% DW)	0.67 (0.044) [0.65 - 0.67]	0.61 (0.037) [0.58 - 0.63]	0.060 (0.049) [0.044 - 0.066]	-0.095, 0.21	0.308	(0.53 - 0.68) [0.45, 0.77]
Glutamic Acid (% DW)	8.24 (0.17) [8.18 - 8.21]	8.18 (0.14) [8.08 - 8.26]	0.057 (0.20) [-0.076 - 0.13]	-0.57, 0.69	0.791	(7.53 - 8.72) [6.60, 9.37]
Glycine (% DW)	1.88 (0.042) [1.86 - 1.89]	1.80 (0.034) [1.76 - 1.85]	0.078 (0.054) [0.0092 - 0.12]	-0.094, 0.25	0.244	(1.67 - 1.99) [1.49, 2.09]
Histidine (% DW)	1.17 (0.030) [1.16 - 1.18]	1.12 (0.024) [1.09 - 1.15]	0.055 (0.038) [0.014 - 0.090]	-0.067, 0.18	0.248	(1.04 - 1.24) [0.94, 1.31]
Isoleucine (% DW)	1.98 (0.046) [1.98 - 1.99]	1.91 (0.037) [1.88 - 1.96]	0.071 (0.059) [0.019 - 0.10]	-0.12, 0.26	0.313	(1.73 - 2.02) [1.54, 2.14]

**Table 2. Statistical Summary of Site AL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Leucine (% DW)	3.35 (0.074) [3.34 - 3.36]	3.20 (0.060) [3.13 - 3.29]	0.15 (0.095) [0.053 - 0.23]	-0.15, 0.45	0.205	(2.93 - 3.32) [2.64, 3.52]
Lysine (% DW)	2.95 (0.091) [2.92 - 2.99]	2.83 (0.074) [2.67 - 2.91]	0.13 (0.12) [0.022 - 0.077]	-0.25, 0.50	0.357	(2.35 - 3.15) [2.05, 3.47]
Methionine (% DW)	0.58 (0.038) [0.56 - 0.58]	0.53 (0.032) [0.51 - 0.56]	0.042 (0.043) [0.018 - 0.049]	-0.095, 0.18	0.403	(0.49 - 0.62) [0.42, 0.68]
Phenylalanine (% DW)	2.44 (0.089) [2.40 - 2.48]	2.20 (0.073) [2.08 - 2.38]	0.24 (0.12) [0.016 - 0.41]	-0.13, 0.60	0.130	(1.97 - 2.44) [1.66, 2.64]
Proline (% DW)	2.15 (0.044) [2.15 - 2.16]	2.10 (0.036) [2.09 - 2.12]	0.054 (0.057) [0.029 - 0.072]	-0.13, 0.23	0.414	(1.92 - 2.25) [1.73, 2.35]
Serine (% DW)	2.17 (0.045) [2.15 - 2.19]	2.09 (0.037) [2.05 - 2.13]	0.080 (0.058) [0.018 - 0.14]	-0.11, 0.27	0.262	(1.96 - 2.30) [1.75, 2.38]
Threonine (% DW)	1.70 (0.038) [1.69 - 1.72]	1.62 (0.031) [1.58 - 1.68]	0.078 (0.049) [0.010 - 0.13]	-0.079, 0.24	0.210	(1.54 - 1.74) [1.40, 1.83]
Tryptophan (% DW)	0.51 (0.012) [0.50 - 0.52]	0.51 (0.0096) [0.50 - 0.52]	0.00042 (0.014) [-0.0056 - -0.0055]	-0.044, 0.044	0.977	(0.47 - 0.55) [0.43, 0.59]

**Table 2. Statistical Summary of Site AL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Tyrosine (% DW)	1.32 (0.031) [1.28 - 1.33]	1.20 (0.026) [1.17 - 1.22]	0.12 (0.032) [0.11 - 0.12]	0.016, 0.22	0.034	(1.04 - 1.31) [0.85, 1.48]
Valine (% DW)	2.07 (0.043) [2.06 - 2.07]	1.99 (0.035) [1.96 - 2.04]	0.075 (0.056) [0.029 - 0.11]	-0.10, 0.25	0.271	(1.83 - 2.13) [1.64, 2.22]
<b>Fatty Acid (% Total FA)</b>						
10:0 Capric Acid (% Total FA)	0.19 (0.012) [0.18 - 0.19]	0.21 (0.010) [0.18 - 0.23]	-0.025 (0.016) [-0.032 - -0.0018]	-0.076, 0.026	0.215	(0.15 - 0.27) [0.065, 0.34]
14:0 Myristic Acid (% Total FA)	0.10 (0.0013) [0.10 - 0.10]	0.10 (0.0010) [0.10 - 0.11]	-0.00044 (0.0015) [-0.00076 - 0.0021]	-0.0052, 0.0043	0.790	(0.064 - 0.097) [0.052, 0.12]
16:0 Palmitic Acid (% Total FA)	12.07 (0.11) [12.05 - 12.09]	12.04 (0.090) [11.96 - 12.08]	0.032 (0.14) [0.013 - 0.095]	-0.42, 0.48	0.836	(9.80 - 12.38) [8.88, 13.53]
16:1 Palmitoleic Acid (% Total FA)	0.10 (0.0043) [0.091 - 0.11]	0.092 (0.0036) [0.091 - 0.095]	0.0079 (0.0052) [-0.00090 - 0.015]	-0.0087, 0.025	0.225	(0.073 - 0.14) [0.037, 0.15]
17:0 Heptadecanoic Acid (% Total FA)	0.10 (0.00085) [0.10 - 0.10]	0.099 (0.00074) [0.099 - 0.099]	0.0025 (0.00080) [0.0017 - 0.0028]	-0.00008, 0.0050	0.053	(0.076 - 0.10) [0.066, 0.11]
17:1 Heptadecenoic Acid (% Total FA)	0.048 (0.00083) [0.047 - 0.048]	0.047 (0.00068) [0.046 - 0.047]	0.00076 (0.0011) [-0.00020 - 0.0016]	-0.0027, 0.0042	0.529	(0.020 - 0.064) [0.0058, 0.083]

**Table 2. Statistical Summary of Site AL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fatty Acid (% Total FA)</b>						
18:0 Stearic Acid (% Total FA)	4.42 (0.096) [4.38 - 4.45]	4.51 (0.078) [4.34 - 4.60]	-0.091 (0.12) [-0.14 - 0.037]	-0.48, 0.30	0.512	(3.21 - 5.24) [1.88, 6.25]
18:1 Oleic Acid (% Total FA)	26.17 (1.17) [25.70 - 26.64]	27.43 (0.96) [26.26 - 28.78]	-1.26 (1.52) [-2.14 - -1.55]	-6.08, 3.57	0.468	(16.69 - 35.16) [5.01, 42.01]
18:2 Linoleic Acid (% Total FA)	49.75 (1.07) [49.32 - 50.17]	48.50 (0.88) [47.18 - 49.32]	1.24 (1.38) [1.16 - 2.14]	-3.16, 5.64	0.435	(44.17 - 57.72) [38.57, 66.94]
18:3 Linolenic Acid (% Total FA)	5.60 (0.12) [5.55 - 5.65]	5.47 (0.10) [5.34 - 5.68]	0.13 (0.16) [0.16 - 0.31]	-0.38, 0.64	0.473	(4.27 - 8.81) [2.69, 10.81]
20:0 Arachidic Acid (% Total FA)	0.54 (0.013) [0.54 - 0.55]	0.55 (0.011) [0.53 - 0.57]	-0.0059 (0.017) [-0.016 - 0.0079]	-0.061, 0.049	0.754	(0.36 - 0.55) [0.23, 0.64]
20:1 Eicosenoic Acid (% Total FA)	0.24 (0.015) [0.21 - 0.28]	0.28 (0.012) [0.27 - 0.28]	-0.031 (0.018) [-0.065 - -0.00053]	-0.088, 0.027	0.189	(0.21 - 0.30) [0.16, 0.33]
20:2 Eicosadienoic Acid (% Total FA)	0.033 (0.0060) [0.020 - 0.045]	0.044 (0.0049) [0.040 - 0.047]	-0.011 (0.0077) [-0.020 - -0.0013]	-0.035, 0.014	0.253	(0.016 - 0.054) [0.0029, 0.083]
22:0 Behenic Acid (% Total FA)	0.64 (0.019) [0.62 - 0.65]	0.63 (0.016) [0.61 - 0.65]	0.0064 (0.025) [-0.00071 - 0.018]	-0.074, 0.086	0.816	(0.38 - 0.59) [0.30, 0.67]

**Table 2. Statistical Summary of Site AL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	14.83 (0.61) [13.66 - 16.00]	14.28 (0.49) [14.00 - 14.72]	0.55 (0.78) [-1.07 - 1.88]	-1.94, 3.04	0.534	(12.79 - 17.98) [11.13, 20.21]
Neutral Detergent Fiber (% DW)	17.37 (1.02) [15.06 - 19.33]	17.49 (0.93) [16.02 - 18.38]	-0.13 (0.84) [-0.97 - 1.25]	-2.80, 2.55	0.890	(13.32 - 23.57) [7.24, 28.70]
<b>Proximate</b>						
Ash (% DW)	5.89 (0.073) [5.87 - 5.90]	5.79 (0.059) [5.69 - 5.88]	0.10 (0.094) [0.025 - 0.18]	-0.20, 0.40	0.358	(4.32 - 5.62) [3.74, 6.45]
Carbohydrates (% DW)	29.12 (0.78) [29.10 - 29.14]	30.31 (0.64) [29.88 - 30.56]	-1.19 (1.01) [-1.39 - -0.74]	-4.41, 2.03	0.324	(31.97 - 38.00) [28.17, 40.99]
Moisture (% FW)	6.94 (1.08) [6.86 - 7.01]	6.85 (0.89) [6.42 - 7.63]	0.082 (1.40) [-0.62 - 0.35]	-4.37, 4.54	0.957	(5.48 - 11.70) [1.45, 12.81]
Protein (% DW)	42.12 (0.53) [42.01 - 42.23]	41.51 (0.43) [41.07 - 41.87]	0.60 (0.68) [0.37 - 0.40]	-1.56, 2.77	0.440	(38.14 - 42.66) [35.30, 45.38]
Total Fat (% DW)	22.92 (0.33) [22.69 - 23.08]	22.40 (0.27) [22.25 - 22.55]	0.52 (0.39) [0.28 - 0.84]	-0.73, 1.77	0.275	(17.90 - 23.56) [14.74, 25.18]
<b>Vitamin</b>						
Vitamin E (mg/100g DW)	7.78 (0.20) [7.58 - 7.98]	6.98 (0.16) [6.86 - 7.21]	0.79 (0.26) [0.70 - 1.12]	-0.022, 1.61	0.053	(1.65 - 8.08) [0, 11.09]

**Table 2. Statistical Summary of Site AL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Antinutrient</b>						
Lectin (H.U./mg FW)	0.17 (0.20) [0.062 - 0.33]	0.32 (0.17) [0.28 - 0.36]	-0.15 (0.22) [-0.22 - -0.037]	-0.86, 0.55	0.542	(0.090 - 2.47) [0, 3.40]
Phytic Acid (% DW)	2.25 (0.11) [2.22 - 2.29]	2.39 (0.090) [2.23 - 2.66]	-0.14 (0.14) [-0.015 - 0.019]	-0.59, 0.32	0.412	(1.10 - 2.32) [0.54, 3.05]
Raffinose (% DW)	0.51 (0.076) [0.49 - 0.56]	0.49 (0.063) [0.43 - 0.55]	0.021 (0.089) [-0.054 - 0.075]	-0.26, 0.31	0.827	(0.52 - 1.62) [0.038, 2.24]
Stachyose (% DW)	1.84 (0.11) [1.83 - 1.89]	2.37 (0.095) [2.27 - 2.55]	-0.53 (0.13) [-0.72 - -0.38]	-0.93, -0.13	0.024	(1.97 - 5.55) [0.99, 7.93]
Trypsin Inhibitor (TIU/mg DW)	33.46 (2.35) [32.26 - 32.53]	31.07 (2.02) [26.21 - 34.20]	2.39 (2.43) [-0.54 - 6.33]	-5.33, 10.12	0.396	(20.84 - 37.24) [13.58, 46.02]
<b>Isoflavone</b>						
Daidzein (mg/kg DW)	202.56 (28.49) [188.96 - 216.15]	216.48 (23.26) [198.95 - 237.23]	-13.93 (36.78) [-9.99 - 2.88]	-130.99, 103.14	0.730	(213.98 - 1273.94) [0, 1585.14]
Genistein (mg/kg DW)	229.96 (22.24) [214.73 - 245.19]	253.03 (18.16) [244.95 - 259.82]	-23.07 (28.71) [-30.22 - -14.64]	-114.43, 68.29	0.480	(148.06 - 1024.50) [0, 1352.86]
Glycitein (mg/kg DW)	71.34 (5.26) [61.08 - 79.67]	64.86 (4.82) [61.28 - 67.07]	6.47 (4.15) [-0.19 - 12.60]	-6.73, 19.68	0.216	(32.42 - 208.45) [0, 272.12]

<sup>1</sup>DW = dry weight; FW = fresh weight; FA = fatty acid; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 3. Statistical Summary of Site AR Soybean Forage Fiber and Proximate Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	37.57 (2.54) [31.80 - 41.20]	36.11 (2.54) [31.86 - 39.42]	1.46 (3.59) [-0.066 - 2.66]	-8.52, 11.43	0.705	(27.99 - 47.33) [14.93, 56.87]
Neutral Detergent Fiber (% DW)	49.83 (2.23) [46.69 - 55.99]	38.62 (2.23) [37.23 - 40.51]	11.21 (3.15) [6.31 - 18.76]	2.45, 19.96	0.023	(30.96 - 54.55) [21.51, 66.01]
<b>Proximate</b>						
Ash (% DW)	5.83 (0.41) [5.29 - 6.52]	6.61 (0.41) [5.58 - 7.23]	-0.78 (0.58) [-1.72 - 0.085]	-2.40, 0.84	0.251	(4.77 - 8.54) [2.46, 10.14]
Carbohydrates (% DW)	70.56 (1.12) [68.75 - 72.89]	70.59 (1.12) [69.06 - 72.99]	-0.030 (1.58) [-0.31 - 0.33]	-4.42, 4.36	0.985	(60.61 - 77.26) [56.93, 85.88]
Moisture (% FW)	72.57 (0.68) [71.60 - 73.30]	72.47 (0.68) [72.20 - 72.60]	0.10 (0.82) [-1.00 - 0.70]	-2.18, 2.38	0.908	(66.50 - 80.20) [57.84, 88.56]
Protein (% DW)	18.53 (0.85) [17.10 - 20.03]	17.37 (0.85) [16.54 - 18.45]	1.16 (1.20) [-0.031 - 1.92]	-2.17, 4.49	0.389	(12.68 - 22.92) [7.05, 27.27]
Total Fat (% DW)	5.20 (0.44) [4.61 - 5.99]	5.33 (0.44) [4.31 - 6.39]	-0.13 (0.48) [-1.41 - 0.70]	-1.47, 1.21	0.798	(3.48 - 7.88) [1.11, 9.11]

<sup>1</sup>DW = dry weight; FW = fresh weight; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 4. Statistical Summary of Site AR Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Alanine (% DW)	1.70 (0.023) [1.66 - 1.77]	1.67 (0.023) [1.65 - 1.69]	0.026 (0.033) [-0.034 - 0.099]	-0.065, 0.12	0.474	(1.66 - 1.93) [1.49, 2.02]
Arginine (% DW)	2.63 (0.064) [2.57 - 2.69]	2.61 (0.064) [2.53 - 2.66]	0.020 (0.091) [-0.061 - 0.092]	-0.23, 0.27	0.838	(2.54 - 2.99) [2.22, 3.25]
Aspartic Acid (% DW)	4.85 (0.091) [4.69 - 5.12]	4.82 (0.091) [4.76 - 4.91]	0.028 (0.13) [-0.16 - 0.31]	-0.33, 0.38	0.837	(4.74 - 5.50) [4.22, 5.96]
Cystine (% DW)	0.62 (0.021) [0.58 - 0.66]	0.61 (0.021) [0.58 - 0.63]	0.0092 (0.018) [-0.011 - 0.043]	-0.042, 0.060	0.642	(0.53 - 0.68) [0.45, 0.77]
Glutamic Acid (% DW)	7.57 (0.12) [7.35 - 7.94]	7.50 (0.12) [7.37 - 7.66]	0.071 (0.18) [-0.23 - 0.46]	-0.42, 0.56	0.705	(7.53 - 8.72) [6.60, 9.37]
Glycine (% DW)	1.73 (0.017) [1.70 - 1.76]	1.69 (0.017) [1.67 - 1.70]	0.040 (0.024) [0.0088 - 0.056]	-0.028, 0.11	0.180	(1.67 - 1.99) [1.49, 2.09]
Histidine (% DW)	1.11 (0.014) [1.09 - 1.12]	1.07 (0.014) [1.05 - 1.09]	0.038 (0.020) [0.027 - 0.054]	-0.018, 0.095	0.132	(1.04 - 1.24) [0.94, 1.31]
Isoleucine (% DW)	1.79 (0.027) [1.74 - 1.86]	1.75 (0.027) [1.72 - 1.79]	0.034 (0.038) [-0.044 - 0.11]	-0.070, 0.14	0.413	(1.73 - 2.02) [1.54, 2.14]

**Table 4. Statistical Summary of Site AR Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Leucine (% DW)	2.99 (0.041) [2.93 - 3.10]	2.93 (0.041) [2.87 - 2.97]	0.066 (0.059) [-0.038 - 0.17]	-0.097, 0.23	0.325	(2.93 - 3.32) [2.64, 3.52]
Lysine (% DW)	2.68 (0.086) [2.58 - 2.83]	2.61 (0.086) [2.45 - 2.74]	0.068 (0.12) [-0.12 - 0.39]	-0.27, 0.40	0.603	(2.35 - 3.15) [2.05, 3.47]
Methionine (% DW)	0.55 (0.018) [0.51 - 0.57]	0.53 (0.018) [0.51 - 0.57]	0.011 (0.022) [-0.013 - 0.049]	-0.051, 0.073	0.648	(0.49 - 0.62) [0.42, 0.68]
Phenylalanine (% DW)	2.06 (0.056) [2.03 - 2.08]	2.02 (0.056) [1.98 - 2.06]	0.042 (0.079) [0.011 - 0.095]	-0.18, 0.26	0.625	(1.97 - 2.44) [1.66, 2.64]
Proline (% DW)	1.99 (0.027) [1.95 - 2.07]	1.96 (0.027) [1.93 - 1.99]	0.034 (0.038) [-0.043 - 0.11]	-0.071, 0.14	0.417	(1.92 - 2.25) [1.73, 2.35]
Serine (% DW)	2.00 (0.021) [1.97 - 2.06]	1.95 (0.021) [1.92 - 1.97]	0.055 (0.026) [0.010 - 0.10]	-0.015, 0.13	0.095	(1.96 - 2.30) [1.75, 2.38]
Threonine (% DW)	1.58 (0.021) [1.55 - 1.62]	1.54 (0.021) [1.51 - 1.55]	0.045 (0.030) [0.0080 - 0.071]	-0.038, 0.13	0.209	(1.54 - 1.74) [1.40, 1.83]
Tryptophan (% DW)	0.51 (0.015) [0.48 - 0.54]	0.49 (0.015) [0.46 - 0.52]	0.021 (0.021) [-0.039 - 0.075]	-0.039, 0.080	0.393 ]	(0.47 - 0.55) [0.43, 0.59]

**Table 4. Statistical Summary of Site AR Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Tyrosine (% DW)	1.08 (0.052) [1.04 - 1.13]	1.12 (0.052) [1.03 - 1.17]	-0.037 (0.074) [-0.11 - 0.095]	-0.24, 0.17	0.641	(1.04 - 1.31) [0.85, 1.48]
Valine (% DW)	1.89 (0.025) [1.85 - 1.96]	1.85 (0.025) [1.82 - 1.88]	0.036 (0.035) [-0.033 - 0.098]	-0.062, 0.13	0.365	(1.83 - 2.13) [1.64, 2.22]
<b>Fatty Acid (% Total FA)</b>						
10:0 Capric Acid (% Total FA)	0.18 (0.023) [0.14 - 0.22]	0.23 (0.023) [0.19 - 0.26]	-0.053 (0.024) [-0.11 - -0.012]	-0.12, 0.012	0.085	(0.15 - 0.27) [0.065, 0.34]
14:0 Myristic Acid (% Total FA)	0.083 (0.00059) [0.082 - 0.084]	0.084 (0.00059) [0.083 - 0.085]	-0.00087 (0.00084) [-0.0021 - 0.00099]	-0.0032, 0.0015	0.359	(0.064 - 0.097) [0.052, 0.12]
16:0 Palmitic Acid (% Total FA)	11.65 (0.053) [11.60 - 11.70]	11.65 (0.053) [11.50 - 11.73]	-0.0067 (0.076) [-0.14 - 0.20]	-0.22, 0.20	0.933	(9.80 - 12.38) [8.88, 13.53]
16:1 Palmitoleic Acid (% Total FA)	0.082 (0.0033) [0.073 - 0.088]	0.085 (0.0033) [0.078 - 0.089]	-0.0030 (0.0047) [-0.016 - 0.0071]	-0.016, 0.010	0.558	(0.073 - 0.14) [0.037, 0.15]
17:0 Heptadecanoic Acid (% Total FA)	0.096 (0.00074) [0.095 - 0.097]	0.095 (0.00074) [0.095 - 0.096]	0.00052 (0.0010) [-0.00053 - 0.0017]	-0.0024, 0.0034	0.640	(0.076 - 0.10) [0.066, 0.11]
17:1 Heptadecenoic Acid (% Total FA)	0.037 (0.0042) [0.023 - 0.046]	0.044 (0.0042) [0.043 - 0.045]	-0.0070 (0.0055) [-0.020 - 0.0031]	-0.022, 0.0084	0.275	(0.020 - 0.064) [0.0058, 0.083]

**Table 4. Statistical Summary of Site AR Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fatty Acid (% Total FA)</b>						
18:0 Stearic Acid (% Total FA)	4.01 (0.048) [3.97 - 4.07]	4.11 (0.048) [4.03 - 4.16]	-0.095 (0.041) [-0.16 - -0.058]	-0.21, 0.019	0.082	(3.21 - 5.24) [1.88, 6.25]
18:1 Oleic Acid (% Total FA)	20.21 (0.33) [19.78 - 20.96]	20.62 (0.33) [20.34 - 21.14]	-0.41 (0.43) [-1.36 - 0.59]	-1.59, 0.78	0.395	(16.69 - 35.16) [5.01, 42.01]
18:2 Linoleic Acid (% Total FA)	54.22 (0.30) [53.57 - 54.63]	53.79 (0.30) [53.50 - 54.07]	0.43 (0.29) [-0.23 - 0.98]	-0.37, 1.24	0.207	(44.17 - 57.72) [38.57, 66.94]
18:3 Linolenic Acid (% Total FA)	8.29 (0.062) [8.14 - 8.41]	8.17 (0.062) [8.12 - 8.26]	0.12 (0.087) [-0.12 - 0.27]	-0.12, 0.36	0.234	(4.27 - 8.81) [2.69, 10.81]
20:0 Arachidic Acid (% Total FA)	0.42 (0.0035) [0.41 - 0.42]	0.42 (0.0035) [0.41 - 0.43]	-0.0016 (0.00087) [-0.0026 - -0.00088]	-0.0040, 0.00084	0.145	(0.36 - 0.55) [0.23, 0.64]
20:1 Eicosenoic Acid (% Total FA)	0.22 (0.010) [0.19 - 0.23]	0.21 (0.010) [0.18 - 0.22]	0.0095 (0.014) [-0.026 - 0.046]	-0.030, 0.049	0.543	(0.21 - 0.30) [0.16, 0.33]
20:2 Eicosadienoic Acid (% Total FA)	0.030 (0.0069) [0.021 - 0.046]	0.037 (0.0069) [0.020 - 0.047]	-0.0070 (0.0086) [-0.024 - 0.0015]	-0.031, 0.017	0.461	(0.016 - 0.054) [0.0029, 0.083]
22:0 Behenic Acid (% Total FA)	0.47 (0.0035) [0.46 - 0.48]	0.46 (0.0035) [0.45 - 0.46]	0.014 (0.0046) [0.0047 - 0.024]	0.0013, 0.027	0.037	(0.38 - 0.59) [0.30, 0.67]

**Table 4. Statistical Summary of Site AR Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	16.56 (0.60) [15.87 - 16.91]	15.99 (0.60) [14.46 - 17.77]	0.57 (0.61) [-0.86 - 1.41]	-1.12, 2.25	0.403	(12.79 - 17.98) [11.13, 20.21]
Neutral Detergent Fiber (% DW)	16.40 (1.30) [15.95 - 17.25]	18.91 (1.30) [15.02 - 22.45]	-2.51 (1.82) [-6.43 - 0.93]	-7.57, 2.55	0.240	(13.32 - 23.57) [7.24, 28.70]
<b>Proximate</b>						
Ash (% DW)	4.92 (0.077) [4.77 - 5.11]	4.80 (0.077) [4.72 - 4.89]	0.11 (0.086) [0.047 - 0.21]	-0.13, 0.35	0.260	(4.32 - 5.62) [3.74, 6.45]
Carbohydrates (% DW)	38.33 (0.78) [36.06 - 39.61]	37.81 (0.78) [37.06 - 39.23]	0.53 (1.05) [-1.07 - 2.56]	-2.40, 3.46	0.642	(31.97 - 38.00) [28.17, 40.99]
Moisture (% FW)	7.57 (0.97) [5.93 - 10.70]	6.02 (0.97) [5.44 - 6.63]	1.55 (1.37) [-0.54 - 4.70]	-2.26, 5.36	0.321	(5.48 - 11.70) [1.45, 12.81]
Protein (% DW)	39.01 (0.43) [38.09 - 40.46]	38.64 (0.43) [38.41 - 38.82]	0.37 (0.61) [-0.73 - 2.05]	-1.34, 2.07	0.583	(38.14 - 42.66) [35.30, 45.38]
Total Fat (% DW)	17.79 (0.48) [17.33 - 18.48]	18.73 (0.48) [17.24 - 19.57]	-0.94 (0.59) [-1.82 - 0.090]	-2.58, 0.70	0.185	(17.90 - 23.56) [14.74, 25.18]
<b>Vitamin</b>						
Vitamin E (mg/100g DW)	6.88 (0.12) [6.77 - 7.08]	5.03 (0.12) [4.88 - 5.12]	1.85 (0.17) [1.66 - 2.20]	1.36, 2.33	<0.001	(1.65 - 8.08) [0, 11.09]

**Table 4. Statistical Summary of Site AR Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Antinutrient</b>						
Lectin (H.U./mg FW)	1.53 (0.66) [0.88 - 2.01]	0.80 (0.66) [0.30 - 1.05]	0.74 (0.93) [0.59 - 0.96]	-1.84, 3.32	0.470	(0.090 - 2.47) [0, 3.40]
Phytic Acid (% DW)	1.70 (0.082) [1.61 - 1.78]	2.01 (0.082) [1.90 - 2.14]	-0.30 (0.11) [-0.53 - -0.17]	-0.61, 0.0017	0.050	(1.10 - 2.32) [0.54, 3.05]
Raffinose (% DW)	1.51 (0.069) [1.44 - 1.54]	1.51 (0.069) [1.40 - 1.61]	-0.0048 (0.098) [-0.073 - 0.040]	-0.28, 0.27	0.963	(0.52 - 1.62) [0.038, 2.24]
Stachyose (% DW)	5.68 (0.17) [5.47 - 5.82]	5.72 (0.17) [5.36 - 5.98]	-0.043 (0.24) [-0.50 - 0.38]	-0.71, 0.62	0.865	(1.97 - 5.55) [0.99, 7.93]
Trypsin Inhibitor (TIU/mg DW)	23.48 (1.42) [23.07 - 23.96]	26.68 (1.42) [23.09 - 30.95]	-3.21 (2.01) [-6.99 - 0.32]	-8.79, 2.38	0.186	(20.84 - 37.24) [13.58, 46.02]
<b>Isoflavone</b>						
Daidzein (mg/kg DW)	767.90 (29.71) [747.32 - 793.95]	658.21 (29.71) [619.71 - 732.57]	109.69 (33.77) [29.86 - 171.61]	15.93, 203.46	0.031	(213.98 - 1273.94) [0, 1585.14]
Genistein (mg/kg DW)	807.35 (25.42) [771.77 - 840.99]	680.07 (25.42) [662.77 - 714.36]	127.28 (25.83) [94.92 - 178.22]	55.57, 198.99	0.007	(148.06 - 1024.50) [0, 1352.86]
Glycitein (mg/kg DW)	182.99 (10.76) [172.51 - 191.49]	163.24 (10.76) [140.43 - 191.71]	19.75 (15.22) [-19.20 - 51.06]	-22.51, 62.02	0.264	(32.42 - 208.45) [0, 272.12]

<sup>1</sup>DW = dry weight; FW = fresh weight; FA = fatty acid; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 5. Statistical Summary of Site GA Soybean Forage Fiber and Proximate Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	31.26 (2.13) [30.21 - 31.87]	32.76 (2.13) [27.42 - 36.30]	-1.50 (2.54) [-4.43 - 2.79]	-8.55, 5.54	0.585	(27.99 - 47.33) [14.93, 56.87]
Neutral Detergent Fiber (% DW)	42.64 (3.78) [37.02 - 52.38]	42.08 (3.78) [34.23 - 46.58]	0.56 (5.34) [-8.40 - 5.81]	-14.26, 15.39	0.920	(30.96 - 54.55) [21.51, 66.01]
<b>Proximate</b>						
Ash (% DW)	5.58 (0.18) [5.50 - 5.69]	5.25 (0.18) [5.10 - 5.38]	0.33 (0.25) [0.17 - 0.42]	-0.37, 1.03	0.262	(4.77 - 8.54) [2.46, 10.14]
Carbohydrates (% DW)	71.49 (0.93) [70.41 - 72.44]	72.52 (0.93) [70.55 - 73.86]	-1.03 (1.32) [-2.23 - -0.14]	-4.68, 2.62	0.478	(60.61 - 77.26) [56.93, 85.88]
Moisture (% FW)	71.13 (0.34) [70.60 - 71.70]	70.13 (0.34) [69.40 - 70.80]	1.00 (0.49) [-0.20 - 1.70]	-0.35, 2.35	0.108	(66.50 - 80.20) [57.84, 88.56]
Protein (% DW)	16.76 (0.64) [15.94 - 17.94]	15.58 (0.64) [14.20 - 16.67]	1.19 (0.91) [0.077 - 2.22]	-1.34, 3.71	0.261	(12.68 - 22.92) [7.05, 27.27]
Total Fat (% DW)	6.22 (0.46) [5.94 - 6.51]	6.61 (0.46) [5.74 - 7.23]	-0.39 (0.65) [-1.00 - 0.20]	-2.19, 1.42	0.584	(3.48 - 7.88) [1.11, 9.11]

<sup>1</sup>DW = dry weight; FW = fresh weight; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 6. Statistical Summary of Site GA Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Alanine (% DW)	1.69 (0.019) [1.68 - 1.70]	1.65 (0.019) [1.63 - 1.67]	0.042 (0.027) [0.0042 - 0.063]	-0.033, 0.12	0.193	(1.66 - 1.93) [1.49, 2.02]
Arginine (% DW)	2.80 (0.036) [2.72 - 2.91]	2.57 (0.036) [2.55 - 2.60]	0.22 (0.050) [0.16 - 0.31]	0.085, 0.36	0.011	(2.54 - 2.99) [2.22, 3.25]
Aspartic Acid (% DW)	4.83 (0.072) [4.80 - 4.87]	4.73 (0.072) [4.59 - 4.90]	0.097 (0.10) [-0.039 - 0.23]	-0.19, 0.38	0.396	(4.74 - 5.50) [4.22, 5.96]
Cystine (% DW)	0.62 (0.013) [0.61 - 0.63]	0.60 (0.013) [0.56 - 0.64]	0.022 (0.018) [-0.018 - 0.052]	-0.027, 0.072	0.279	(0.53 - 0.68) [0.45, 0.77]
Glutamic Acid (% DW)	7.63 (0.098) [7.53 - 7.69]	7.39 (0.098) [7.21 - 7.60]	0.24 (0.14) [0.092 - 0.45]	-0.15, 0.62	0.159	(7.53 - 8.72) [6.60, 9.37]
Glycine (% DW)	1.74 (0.020) [1.73 - 1.78]	1.67 (0.020) [1.64 - 1.72]	0.070 (0.028) [0.059 - 0.089]	-0.0065, 0.15	0.063	(1.67 - 1.99) [1.49, 2.09]
Histidine (% DW)	1.15 (0.011) [1.13 - 1.16]	1.09 (0.011) [1.08 - 1.12]	0.057 (0.015) [0.043 - 0.074]	0.015, 0.098	0.019	(1.04 - 1.24) [0.94, 1.31]
Isoleucine (% DW)	1.81 (0.016) [1.77 - 1.84]	1.74 (0.016) [1.71 - 1.77]	0.074 (0.022) [0.035 - 0.12]	0.012, 0.14	0.029	(1.73 - 2.02) [1.54, 2.14]

**Table 6. Statistical Summary of Site GA Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Leucine (% DW)	3.04 (0.024) [2.98 - 3.09]	2.91 (0.024) [2.87 - 2.96]	0.13 (0.033) [0.087 - 0.18]	0.043, 0.22	0.014	(2.93 - 3.32) [2.64, 3.52]
Lysine (% DW)	2.75 (0.051) [2.67 - 2.79]	2.60 (0.051) [2.54 - 2.66]	0.15 (0.073) [0.11 - 0.20]	-0.056, 0.35	0.114	(2.35 - 3.15) [2.05, 3.47]
Methionine (% DW)	0.53 (0.018) [0.48 - 0.55]	0.51 (0.018) [0.47 - 0.54]	0.017 (0.026) [-0.059 - 0.080]	-0.055, 0.089	0.548	(0.49 - 0.62) [0.42, 0.68]
Phenylalanine (% DW)	2.24 (0.059) [2.11 - 2.35]	2.06 (0.059) [1.99 - 2.20]	0.18 (0.069) [0.13 - 0.25]	-0.013, 0.37	0.060	(1.97 - 2.44) [1.66, 2.64]
Proline (% DW)	2.00 (0.014) [1.99 - 2.02]	1.94 (0.014) [1.93 - 1.94]	0.069 (0.020) [0.055 - 0.089]	0.014, 0.12	0.025	(1.92 - 2.25) [1.73, 2.35]
Serine (% DW)	2.02 (0.031) [2.00 - 2.04]	1.94 (0.031) [1.91 - 1.99]	0.076 (0.044) [0.046 - 0.11]	-0.045, 0.20	0.157	(1.96 - 2.30) [1.75, 2.38]
Threonine (% DW)	1.60 (0.018) [1.56 - 1.62]	1.53 (0.018) [1.50 - 1.59]	0.061 (0.024) [0.028 - 0.11]	-0.0065, 0.13	0.066	(1.54 - 1.74) [1.40, 1.83]
Tryptophan (% DW)	0.52 (0.0098) [0.50 - 0.54]	0.51 (0.0098) [0.50 - 0.53]	0.0044 (0.014) [-0.026 - 0.026]	-0.034, 0.043	0.764	(0.47 - 0.55) [0.43, 0.59]

**Table 6. Statistical Summary of Site GA Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Tyrosine (% DW)	1.18 (0.044) [1.08 - 1.27]	1.09 (0.044) [1.02 - 1.12]	0.097 (0.062) [-0.043 - 0.25]	-0.076, 0.27	0.195	(1.04 - 1.31) [0.85, 1.48]
Valine (% DW)	1.91 (0.017) [1.88 - 1.94]	1.84 (0.017) [1.80 - 1.87]	0.073 (0.023) [0.034 - 0.12]	0.0078, 0.14	0.035	(1.83 - 2.13) [1.64, 2.22]
<b>Fatty Acid (% Total FA)</b>						
10:0 Capric Acid (% Total FA)	0.20 (0.017) [0.18 - 0.24]	0.18 (0.017) [0.16 - 0.19]	0.022 (0.025) [0.0012 - 0.048]	-0.046, 0.091	0.414	(0.15 - 0.27) [0.065, 0.34]
14:0 Myristic Acid (% Total FA)	0.094 (0.0023) [0.092 - 0.095]	0.097 (0.0023) [0.092 - 0.10]	-0.0031 (0.0033) [-0.0085 - 0.0020]	-0.012, 0.0060	0.395	(0.064 - 0.097) [0.052, 0.12]
16:0 Palmitic Acid (% Total FA)	11.51 (0.12) [11.32 - 11.81]	11.93 (0.12) [11.79 - 12.11]	-0.42 (0.17) [-0.72 - 0.026]	-0.90, 0.062	0.072	(9.80 - 12.38) [8.88, 13.53]
16:1 Palmitoleic Acid (% Total FA)	0.10 (0.0043) [0.097 - 0.11]	0.10 (0.0043) [0.094 - 0.11]	-0.0016 (0.0057) [-0.0042 - 0.0031]	-0.017, 0.014	0.798	(0.073 - 0.14) [0.037, 0.15]
17:0 Heptadecanoic Acid (% Total FA)	0.086 (0.0023) [0.084 - 0.088]	0.087 (0.0023) [0.082 - 0.092]	-0.00085 (0.0026) [-0.0064 - 0.0021]	-0.0081, 0.0065	0.763	(0.076 - 0.10) [0.066, 0.11]
17:1 Heptadecenoic Acid (% Total FA)	0.040 (0.0041) [0.039 - 0.041]	0.032 (0.0041) [0.019 - 0.040]	0.0078 (0.0057) [0.00006 - 0.022]	-0.0081, 0.024	0.244	(0.020 - 0.064) [0.0058, 0.083]

**Table 6. Statistical Summary of Site GA Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fatty Acid (% Total FA)</b>						
18:0 Stearic Acid (% Total FA)	5.21 (0.12) [5.07 - 5.36]	5.12 (0.12) [4.78 - 5.36]	0.085 (0.14) [-0.042 - 0.29]	-0.31, 0.48	0.581	(3.21 - 5.24) [1.88, 6.25]
18:1 Oleic Acid (% Total FA)	23.10 (0.67) [22.70 - 23.71]	22.28 (0.67) [20.85 - 23.50]	0.82 (0.92) [0.21 - 2.04]	-1.72, 3.37	0.419	(16.69 - 35.16) [5.01, 42.01]
18:2 Linoleic Acid (% Total FA)	50.98 (0.59) [50.39 - 51.53]	51.56 (0.59) [50.31 - 52.88]	-0.57 (0.74) [-1.35 - 0.083]	-2.62, 1.47	0.478	(44.17 - 57.72) [38.57, 66.94]
18:3 Linolenic Acid (% Total FA)	7.23 (0.14) [7.16 - 7.35]	7.24 (0.14) [7.01 - 7.57]	-0.016 (0.20) [-0.40 - 0.20]	-0.56, 0.53	0.937	(4.27 - 8.81) [2.69, 10.81]
20:0 Arachidic Acid (% Total FA)	0.57 (0.012) [0.56 - 0.58]	0.55 (0.012) [0.51 - 0.57]	0.018 (0.014) [-0.0035 - 0.047]	-0.021, 0.057	0.264	(0.36 - 0.55) [0.23, 0.64]
20:1 Eicosenoic Acid (% Total FA)	0.24 (0.0027) [0.23 - 0.24]	0.22 (0.0027) [0.22 - 0.22]	0.012 (0.0038) [0.0040 - 0.016]	0.0013, 0.022	0.035	(0.21 - 0.30) [0.16, 0.33]
20:2 Eicosadienoic Acid (% Total FA)	0.043 (0.0022) [0.039 - 0.049]	0.041 (0.0022) [0.039 - 0.044]	0.0013 (0.0028) [-0.0019 - 0.0049]	-0.0066, 0.0092	0.678	(0.016 - 0.054) [0.0029, 0.083]
22:0 Behenic Acid (% Total FA)	0.60 (0.011) [0.58 - 0.62]	0.55 (0.011) [0.52 - 0.58]	0.046 (0.014) [0.019 - 0.078]	0.0075, 0.084	0.029	(0.38 - 0.59) [0.30, 0.67]

**Table 6. Statistical Summary of Site GA Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	14.21 (0.35) [13.53 - 14.97]	14.92 (0.35) [14.38 - 15.77]	-0.71 (0.40) [-1.07 - -0.25]	-1.82, 0.40	0.152	(12.79 - 17.98) [11.13, 20.21]
Neutral Detergent Fiber (% DW)	16.23 (0.46) [15.51 - 17.15]	16.14 (0.46) [15.03 - 17.07]	0.095 (0.65) [-1.56 - 2.12]	-1.70, 1.89	0.889	(13.32 - 23.57) [7.24, 28.70]
<b>Proximate</b>						
Ash (% DW)	4.81 (0.079) [4.70 - 4.98]	4.80 (0.079) [4.70 - 4.86]	0.0072 (0.11) [-0.14 - 0.11]	-0.30, 0.32	0.951	(4.32 - 5.62) [3.74, 6.45]
Carbohydrates (% DW)	35.10 (1.46) [34.68 - 35.36]	38.48 (1.46) [35.52 - 43.48]	-3.37 (2.04) [-8.12 - -0.26]	-9.04, 2.29	0.173	(31.97 - 38.00) [28.17, 40.99]
Moisture (% FW)	6.37 (0.40) [5.86 - 7.14]	7.00 (0.40) [6.16 - 8.03]	-0.63 (0.51) [-0.96 - -0.050]	-2.04, 0.77	0.279	(5.48 - 11.70) [1.45, 12.81]
Protein (% DW)	39.33 (1.08) [38.79 - 39.77]	35.93 (1.08) [32.29 - 38.13]	3.39 (1.42) [1.64 - 6.49]	-0.55, 7.34	0.075	(38.14 - 42.66) [35.30, 45.38]
Total Fat (% DW)	20.79 (0.45) [20.29 - 21.20]	20.79 (0.45) [19.39 - 21.68]	-0.0030 (0.63) [-1.39 - 1.80]	-1.76, 1.76	0.996	(17.90 - 23.56) [14.74, 25.18]
<b>Vitamin</b>						
Vitamin E (mg/100g DW)	9.16 (0.22) [8.51 - 9.62]	7.77 (0.22) [7.64 - 7.94]	1.38 (0.32) [0.57 - 1.97]	0.51, 2.26	0.011	(1.65 - 8.08) [0, 11.09]

**Table 6. Statistical Summary of Site GA Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Antinutrient</b>						
Lectin (H.U./mg FW)	0.90 (0.20) [0.68 - 1.10]	0.84 (0.20) [0.54 - 1.28]	0.055 (0.097) [-0.18 - 0.20]	-0.21, 0.32	0.600	(0.090 - 2.47) [0, 3.40]
Phytic Acid (% DW)	1.50 (0.11) [1.39 - 1.71]	1.52 (0.11) [1.31 - 1.66]	-0.020 (0.16) [-0.26 - 0.11]	-0.47, 0.43	0.907	(1.10 - 2.32) [0.54, 3.05]
Raffinose (% DW)	1.60 (0.098) [1.53 - 1.66]	1.69 (0.098) [1.47 - 1.85]	-0.086 (0.14) [-0.32 - 0.19]	-0.47, 0.30	0.566	(0.52 - 1.62) [0.038, 2.24]
Stachyose (% DW)	4.75 (0.14) [4.40 - 4.96]	4.96 (0.14) [4.74 - 5.19]	-0.21 (0.17) [-0.35 - -0.067]	-0.67, 0.25	0.269	(1.97 - 5.55) [0.99, 7.93]
Trypsin Inhibitor (TIU/mg DW)	23.28 (0.86) [21.65 - 25.24]	29.27 (0.86) [27.29 - 30.69]	-6.00 (1.13) [-7.75 - -4.60]	-9.12, -2.87	0.005	(20.84 - 37.24) [13.58, 46.02]
<b>Isoflavone</b>						
Daidzein (mg/kg DW)	796.62 (53.29) [725.52 - 921.29]	748.07 (53.29) [742.75 - 753.38]	48.55 (75.37) [-27.87 - 178.54]	-160.71, 257.81	0.554	(213.98 - 1273.94) [0, 1585.14]
Genistein (mg/kg DW)	736.27 (36.05) [667.09 - 811.59]	708.78 (36.05) [676.11 - 760.87]	27.49 (50.98) [-9.02 - 50.72]	-114.04, 169.03	0.618	(148.06 - 1024.50) [0, 1352.86]
Glycitein (mg/kg DW)	181.56 (11.88) [171.02 - 195.97]	202.27 (11.88) [179.22 - 227.25]	-20.71 (12.27) [-49.56 - -4.37]	-54.79, 13.37	0.166	(32.42 - 208.45) [0, 272.12]

<sup>1</sup>DW = dry weight; FW = fresh weight; FA = fatty acid; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 7. Statistical Summary of Site IL Soybean Forage Fiber and Proximate Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	36.67 (2.60) [31.94 - 44.08]	36.80 (2.60) [33.62 - 39.28]	-0.13 (3.68) [-5.57 - 10.46]	-10.35, 10.08	0.972	(27.99 - 47.33) [14.93, 56.87]
Neutral Detergent Fiber (% DW)	48.78 (4.07) [46.12 - 53.23]	51.06 (4.07) [43.04 - 64.19]	-2.29 (5.75) [-18.07 - 7.27]	-18.26, 13.69	0.711	(30.96 - 54.55) [21.51, 66.01]
<b>Proximate</b>						
Ash (% DW)	6.56 (0.45) [5.92 - 7.46]	6.48 (0.45) [6.38 - 6.54]	0.079 (0.54) [-0.59 - 0.92]	-1.43, 1.59	0.891	(4.77 - 8.54) [2.46, 10.14]
Carbohydrates (% DW)	74.57 (0.94) [71.98 - 76.73]	74.18 (0.94) [74.04 - 74.26]	0.39 (1.33) [-2.28 - 2.50]	-3.30, 4.08	0.782	(60.61 - 77.26) [56.93, 85.88]
Moisture (% FW)	75.83 (0.32) [75.20 - 76.80]	76.63 (0.32) [76.30 - 77.10]	-0.80 (0.46) [-1.60 - 0.50]	-2.07, 0.47	0.154	(66.50 - 80.20) [57.84, 88.56]
Protein (% DW)	14.53 (0.68) [13.56 - 15.74]	14.87 (0.68) [14.48 - 15.40]	-0.34 (0.97) [-1.18 - 1.26]	-3.03, 2.35	0.742	(12.68 - 22.92) [7.05, 27.27]
Total Fat (% DW)	4.28 (0.39) [3.60 - 4.87]	4.43 (0.39) [4.23 - 4.64]	-0.15 (0.55) [-0.81 - 0.23]	-1.69, 1.38	0.796	(3.48 - 7.88) [1.11, 9.11]

<sup>1</sup>DW = dry weight; FW = fresh weight; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 8. Statistical Summary of Site IL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Alanine (% DW)	1.72 (0.036) [1.66 - 1.80]	1.63 (0.036) [1.59 - 1.71]	0.087 (0.043) [0.079 - 0.095]	-0.033, 0.21	0.115	(1.66 - 1.93) [1.49, 2.02]
Arginine (% DW)	2.61 (0.052) [2.49 - 2.70]	2.44 (0.052) [2.37 - 2.56]	0.17 (0.058) [0.11 - 0.25]	0.0060, 0.33	0.045	(2.54 - 2.99) [2.22, 3.25]
Aspartic Acid (% DW)	4.87 (0.14) [4.68 - 5.20]	4.63 (0.14) [4.46 - 4.96]	0.24 (0.16) [0.23 - 0.25]	-0.21, 0.69	0.214	(4.74 - 5.50) [4.22, 5.96]
Cystine (% DW)	0.63 (0.023) [0.58 - 0.65]	0.66 (0.023) [0.62 - 0.69]	-0.032 (0.033) [-0.11 - 0.032]	-0.12, 0.059	0.378	(0.53 - 0.68) [0.45, 0.77]
Glutamic Acid (% DW)	7.53 (0.20) [7.28 - 8.02]	7.16 (0.20) [6.89 - 7.64]	0.36 (0.24) [0.32 - 0.39]	-0.31, 1.04	0.207	(7.53 - 8.72) [6.60, 9.37]
Glycine (% DW)	1.75 (0.022) [1.71 - 1.80]	1.68 (0.022) [1.64 - 1.72]	0.073 (0.030) [0.042 - 0.10]	-0.011, 0.16	0.074	(1.67 - 1.99) [1.49, 2.09]
Histidine (% DW)	1.11 (0.012) [1.09 - 1.13]	1.05 (0.012) [1.03 - 1.08]	0.052 (0.017) [0.039 - 0.072]	0.0054, 0.098	0.036	(1.04 - 1.24) [0.94, 1.31]
Isoleucine (% DW)	1.78 (0.031) [1.74 - 1.85]	1.69 (0.031) [1.64 - 1.75]	0.099 (0.039) [0.075 - 0.12]	-0.0084, 0.21	0.062	(1.73 - 2.02) [1.54, 2.14]

**Table 8. Statistical Summary of Site IL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Leucine (% DW)	2.97 (0.053) [2.88 - 3.08]	2.80 (0.053) [2.73 - 2.93]	0.18 (0.067) [0.15 - 0.23]	-0.0079, 0.37	0.056	(2.93 - 3.32) [2.64, 3.52]
Lysine (% DW)	2.78 (0.088) [2.70 - 2.90]	2.57 (0.088) [2.49 - 2.74]	0.21 (0.12) [0.16 - 0.26]	-0.13, 0.55	0.162	(2.35 - 3.15) [2.05, 3.47]
Methionine (% DW)	0.53 (0.028) [0.49 - 0.56]	0.56 (0.028) [0.53 - 0.59]	-0.033 (0.039) [-0.094 - 0.028]	-0.14, 0.076	0.445	(0.49 - 0.62) [0.42, 0.68]
Phenylalanine (% DW)	2.08 (0.048) [1.94 - 2.21]	1.94 (0.048) [1.91 - 1.99]	0.14 (0.066) [0.018 - 0.31]	-0.043, 0.32	0.101	(1.97 - 2.44) [1.66, 2.64]
Proline (% DW)	1.99 (0.040) [1.94 - 2.09]	1.90 (0.040) [1.85 - 1.99]	0.092 (0.049) [0.083 - 0.10]	-0.045, 0.23	0.135	(1.92 - 2.25) [1.73, 2.35]
Serine (% DW)	2.01 (0.034) [1.94 - 2.08]	1.92 (0.034) [1.87 - 1.99]	0.089 (0.049) [0.061 - 0.12]	-0.046, 0.22	0.142	(1.96 - 2.30) [1.75, 2.38]
Threonine (% DW)	1.59 (0.022) [1.56 - 1.63]	1.52 (0.022) [1.49 - 1.58]	0.070 (0.031) [0.052 - 0.10]	-0.015, 0.15	0.083	(1.54 - 1.74) [1.40, 1.83]
Tryptophan (% DW)	0.53 (0.0088) [0.52 - 0.53]	0.51 (0.0088) [0.50 - 0.52]	0.019 (0.011) [0.012 - 0.023]	-0.011, 0.049	0.159	(0.47 - 0.55) [0.43, 0.59]

**Table 8. Statistical Summary of Site IL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Tyrosine (% DW)	1.10 (0.014) [1.07 - 1.13]	1.01 (0.014) [0.98 - 1.04]	0.092 (0.015) [0.067 - 0.12]	0.050, 0.13	0.003	(1.04 - 1.31) [0.85, 1.48]
Valine (% DW)	1.90 (0.033) [1.85 - 1.98]	1.80 (0.033) [1.76 - 1.87]	0.10 (0.040) [0.090 - 0.12]	-0.0073, 0.22	0.060	(1.83 - 2.13) [1.64, 2.22]
<b>Fatty Acid (% Total FA)</b>						
10:0 Capric Acid (% Total FA)	0.18 (0.017) [0.16 - 0.19]	0.20 (0.017) [0.16 - 0.25]	-0.022 (0.024) [-0.092 - 0.028]	-0.089, 0.046	0.424	(0.15 - 0.27) [0.065, 0.34]
14:0 Myristic Acid (% Total FA)	0.089 (0.00087) [0.086 - 0.090]	0.090 (0.00087) [0.089 - 0.091]	-0.00099 (0.0012) [-0.0036 - 0.0017]	-0.0044, 0.0024	0.465	(0.064 - 0.097) [0.052, 0.12]
16:0 Palmitic Acid (% Total FA)	11.53 (0.048) [11.39 - 11.63]	11.71 (0.048) [11.69 - 11.72]	-0.17 (0.050) [-0.30 - -0.075]	-0.31, -0.034	0.025	(9.80 - 12.38) [8.88, 13.53]
16:1 Palmitoleic Acid (% Total FA)	0.093 (0.0021) [0.092 - 0.097]	0.097 (0.0021) [0.097 - 0.097]	-0.0036 (0.0030) [-0.0053 - -0.00043]	-0.012, 0.0048	0.304	(0.073 - 0.14) [0.037, 0.15]
17:0 Heptadecanoic Acid (% Total FA)	0.093 (0.00086) [0.093 - 0.094]	0.094 (0.00086) [0.092 - 0.094]	-0.00023 (0.0011) [-0.00061 - 0.00035]	-0.0032, 0.0027	0.841	(0.076 - 0.10) [0.066, 0.11]
17:1 Heptadecenoic Acid (% Total FA)	0.043 (0.0038) [0.040 - 0.045]	0.042 (0.0038) [0.042 - 0.042]	0.00034 (0.0054) [-0.0019 - 0.0028]	-0.015, 0.015	0.952	(0.020 - 0.064) [0.0058, 0.083]

**Table 8. Statistical Summary of Site IL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fatty Acid (% Total FA)</b>						
18:0 Stearic Acid (% Total FA)	4.87 (0.047) [4.76 - 4.99]	5.00 (0.047) [4.92 - 5.06]	-0.13 (0.067) [-0.26 - -0.049]	-0.31, 0.059	0.130	(3.21 - 5.24) [1.88, 6.25]
18:1 Oleic Acid (% Total FA)	22.33 (0.23) [21.78 - 22.97]	21.87 (0.23) [21.68 - 22.05]	0.46 (0.21) [0.096 - 0.91]	-0.13, 1.06	0.097	(16.69 - 35.16) [5.01, 42.01]
18:2 Linoleic Acid (% Total FA)	51.78 (0.18) [51.32 - 52.33]	52.08 (0.18) [51.95 - 52.25]	-0.30 (0.19) [-0.63 - 0.078]	-0.84, 0.24	0.201	(44.17 - 57.72) [38.57, 66.94]
18:3 Linolenic Acid (% Total FA)	7.64 (0.087) [7.45 - 7.74]	7.52 (0.087) [7.44 - 7.57]	0.12 (0.092) [0.012 - 0.19]	-0.13, 0.38	0.256	(4.27 - 8.81) [2.69, 10.81]
20:0 Arachidic Acid (% Total FA)	0.51 (0.0055) [0.50 - 0.53]	0.52 (0.0055) [0.51 - 0.52]	-0.0036 (0.0065) [-0.014 - 0.0075]	-0.022, 0.014	0.603	(0.36 - 0.55) [0.23, 0.64]
20:1 Eicosenoic Acid (% Total FA)	0.24 (0.011) [0.23 - 0.25]	0.23 (0.011) [0.22 - 0.23]	0.012 (0.015) [0.0017 - 0.018]	-0.030, 0.053	0.484	(0.21 - 0.30) [0.16, 0.33]
20:2 Eicosadienoic Acid (% Total FA)	0.050 (0.0041) [0.047 - 0.054]	0.045 (0.0041) [0.044 - 0.047]	0.0045 (0.0057) [0.00080 - 0.011]	-0.011, 0.020	0.472	(0.016 - 0.054) [0.0029, 0.083]
22:0 Behenic Acid (% Total FA)	0.54 (0.012) [0.53 - 0.56]	0.52 (0.012) [0.51 - 0.52]	0.026 (0.012) [0.014 - 0.042]	-0.0058, 0.058	0.085	(0.38 - 0.59) [0.30, 0.67]

**Table 8. Statistical Summary of Site IL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	15.69 (0.78) [14.93 - 16.18]	17.06 (0.78) [15.34 - 19.02]	-1.37 (0.77) [-2.84 - 0.62]	-3.51, 0.77	0.150	(12.79 - 17.98) [11.13, 20.21]
Neutral Detergent Fiber (% DW)	16.74 (0.40) [16.41 - 17.18]	16.21 (0.40) [15.32 - 17.41]	0.53 (0.57) [-1.00 - 1.86]	-1.04, 2.11	0.399	(13.32 - 23.57) [7.24, 28.70]
<b>Proximate</b>						
Ash (% DW)	5.42 (0.083) [5.20 - 5.55]	5.29 (0.083) [5.16 - 5.36]	0.13 (0.042) [0.034 - 0.21]	0.010, 0.25	0.039	(4.32 - 5.62) [3.74, 6.45]
Carbohydrates (% DW)	36.65 (0.71) [35.60 - 37.72]	39.17 (0.71) [37.69 - 39.96]	-2.53 (0.72) [-3.34 - -2.09]	-4.53, -0.52	0.024	(31.97 - 38.00) [28.17, 40.99]
Moisture (% FW)	9.23 (1.03) [6.88 - 10.40]	7.45 (1.03) [6.66 - 8.74]	1.78 (1.12) [0.22 - 3.46]	-1.34, 4.90	0.187	(5.48 - 11.70) [1.45, 12.81]
Protein (% DW)	38.91 (0.63) [37.73 - 40.58]	37.49 (0.63) [36.66 - 38.71]	1.43 (0.78) [1.08 - 1.87]	-0.73, 3.59	0.140	(38.14 - 42.66) [35.30, 45.38]
Total Fat (% DW)	19.05 (0.47) [18.30 - 19.76]	18.05 (0.47) [17.78 - 18.30]	1.00 (0.66) [0.0042 - 1.98]	-0.83, 2.84	0.203	(17.90 - 23.56) [14.74, 25.18]
<b>Vitamin</b>						
Vitamin E (mg/100g DW)	6.72 (0.19) [6.36 - 7.27]	5.31 (0.19) [4.98 - 5.58]	1.41 (0.16) [1.17 - 1.69]	0.98, 1.84	<0.001	(1.65 - 8.08) [0, 11.09]

**Table 8. Statistical Summary of Site IL Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Antinutrient</b>						
Lectin (H.U./mg FW)	0.98 (0.28) [0.21 - 1.65]	1.04 (0.28) [0.84 - 1.18]	-0.058 (0.39) [-0.88 - 0.47]	-1.15, 1.04	0.889	(0.090 - 2.47) [0, 3.40]
Phytic Acid (% DW)	2.07 (0.085) [1.88 - 2.22]	2.05 (0.085) [1.91 - 2.13]	0.022 (0.12) [-0.25 - 0.31]	-0.31, 0.36	0.865	(1.10 - 2.32) [0.54, 3.05]
Raffinose (% DW)	1.60 (0.065) [1.41 - 1.70]	1.58 (0.065) [1.52 - 1.67]	0.018 (0.092) [-0.16 - 0.18]	-0.24, 0.27	0.852	(0.52 - 1.62) [0.038, 2.24]
Stachyose (% DW)	6.05 (0.29) [5.48 - 6.42]	6.10 (0.29) [5.53 - 6.65]	-0.046 (0.40) [-0.63 - 0.73]	-1.16, 1.07	0.915	(1.97 - 5.55) [0.99, 7.93]
Trypsin Inhibitor (TIU/mg DW)	27.09 (1.77) [22.34 - 31.92]	29.51 (1.77) [28.50 - 30.68]	-2.42 (1.96) [-6.16 - 2.58]	-7.85, 3.02	0.284	(20.84 - 37.24) [13.58, 46.02]
<b>Isoflavone</b>						
Daidzein (mg/kg DW)	890.96 (28.34) [834.82 - 983.26]	803.42 (28.34) [788.95 - 830.65]	87.54 (29.71) [45.87 - 152.61]	5.04, 170.04	0.042	(213.98 - 1273.94) [0, 1585.14]
Genistein (mg/kg DW)	776.22 (31.97) [724.87 - 863.84]	725.36 (31.97) [701.70 - 744.59]	50.87 (42.57) [-19.72 - 162.14]	-67.32, 169.05	0.298	(148.06 - 1024.50) [0, 1352.86]
Glycitein (mg/kg DW)	198.74 (14.52) [164.30 - 228.79]	204.69 (14.52) [177.84 - 219.15]	-5.95 (17.13) [-16.03 - 11.73]	-53.52, 41.62	0.746	(32.42 - 208.45) [0, 272.12]

<sup>1</sup>DW = dry weight; FW = fresh weight; FA = fatty acid; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 9. Statistical Summary of Site NC Soybean Forage Fiber and Proximate Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	44.66 (5.11) [37.12 - 58.25]	36.58 (6.26) [31.54 - 41.61]	8.09 (8.08) [-2.99 - 5.58]	-17.64, 33.82	0.390	(27.99 - 47.33) [14.93, 56.87]
Neutral Detergent Fiber (% DW)	47.51 (2.97) [46.55 - 48.83]	48.85 (3.64) [42.62 - 55.09]	-1.35 (4.70) [-6.26 - 3.93]	-16.29, 13.60	0.792	(30.96 - 54.55) [21.51, 66.01]
<b>Proximate</b>						
Ash (% DW)	5.65 (0.19) [5.42 - 6.03]	5.97 (0.23) [5.93 - 6.01]	-0.32 (0.30) [-0.51 - 0.028]	-1.28, 0.63	0.363	(4.77 - 8.54) [2.46, 10.14]
Carbohydrates (% DW)	71.44 (1.22) [70.23 - 73.06]	70.59 (1.39) [67.72 - 72.82]	0.85 (1.34) [-1.78 - 2.51]	-3.42, 5.13	0.571	(60.61 - 77.26) [56.93, 85.88]
Moisture (% FW)	70.47 (0.30) [70.10 - 71.00]	70.85 (0.37) [70.20 - 71.50]	-0.38 (0.48) [-1.40 - 0.80]	-1.91, 1.14	0.482	(66.50 - 80.20) [57.84, 88.56]
Protein (% DW)	17.17 (0.95) [16.26 - 17.68]	17.62 (1.09) [16.10 - 19.66]	-0.45 (1.06) [-1.98 - 1.46]	-3.83, 2.93	0.700	(12.68 - 22.92) [7.05, 27.27]
Total Fat (% DW)	5.82 (0.43) [5.28 - 6.82]	5.82 (0.49) [5.13 - 6.74]	-0.0020 (0.48) [0.086 - 0.14]	-1.53, 1.52	0.996	(3.48 - 7.88) [1.11, 9.11]

<sup>1</sup>DW = dry weight; FW = fresh weight; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 10. Statistical Summary of Site NC Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Alanine (% DW)	1.67 (0.016) [1.66 - 1.68]	1.66 (0.018) [1.66 - 1.68]	0.0055 (0.019) [-0.0051 - 0.0048]	-0.056, 0.067	0.795	(1.66 - 1.93) [1.49, 2.02]
Arginine (% DW)	2.42 (0.078) [2.36 - 2.51]	2.50 (0.091) [2.53 - 2.54]	-0.085 (0.094) [-0.16 - -0.014]	-0.38, 0.21	0.432	(2.54 - 2.99) [2.22, 3.25]
Aspartic Acid (% DW)	4.68 (0.073) [4.61 - 4.75]	4.82 (0.085) [4.72 - 4.91]	-0.14 (0.089) [-0.23 - -0.12]	-0.42, 0.14	0.215	(4.74 - 5.50) [4.22, 5.96]
Cystine (% DW)	0.58 (0.016) [0.57 - 0.59]	0.59 (0.019) [0.57 - 0.61]	-0.016 (0.025) [-0.017 - -0.0080]	-0.096, 0.063	0.561	(0.53 - 0.68) [0.45, 0.77]
Glutamic Acid (% DW)	7.30 (0.084) [7.25 - 7.34]	7.47 (0.10) [7.39 - 7.58]	-0.18 (0.12) [-0.29 - -0.14]	-0.56, 0.20	0.228	(7.53 - 8.72) [6.60, 9.37]
Glycine (% DW)	1.67 (0.036) [1.63 - 1.70]	1.66 (0.041) [1.67 - 1.69]	0.0061 (0.037) [-0.0052 - 0.016]	-0.11, 0.12	0.878	(1.67 - 1.99) [1.49, 2.09]
Histidine (% DW)	1.07 (0.028) [1.05 - 1.11]	1.05 (0.032) [1.06 - 1.08]	0.019 (0.027) [-0.00077 - 0.036]	-0.068, 0.11	0.529	(1.04 - 1.24) [0.94, 1.31]
Isoleucine (% DW)	1.71 (0.031) [1.68 - 1.75]	1.70 (0.034) [1.72 - 1.73]	0.0084 (0.027) [-0.016 - 0.016]	-0.077, 0.094	0.775	(1.73 - 2.02) [1.54, 2.14]

**Table 10. Statistical Summary of Site NC Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Leucine (% DW)	2.85 (0.045) [2.82 - 2.88]	2.87 (0.052) [2.89 - 2.91]	-0.024 (0.053) [-0.044 - -0.024]	-0.19, 0.14	0.684	(2.93 - 3.32) [2.64, 3.52]
Lysine (% DW)	2.55 (0.077) [2.48 - 2.66]	2.42 (0.082) [2.42 - 2.53]	0.14 (0.053) [0.10 - 0.13]	-0.033, 0.31	0.082	(2.35 - 3.15) [2.05, 3.47]
Methionine (% DW)	0.51 (0.014) [0.49 - 0.53]	0.51 (0.017) [0.48 - 0.53]	0.0014 (0.023) [0.0028 - 0.020]	-0.070, 0.073	0.953	(0.49 - 0.62) [0.42, 0.68]
Phenylalanine (% DW)	1.96 (0.096) [1.91 - 2.05]	1.96 (0.11) [1.96 - 2.02]	0.0037 (0.11) [-0.036 - 0.027]	-0.36, 0.37	0.975	(1.97 - 2.44) [1.66, 2.64]
Proline (% DW)	1.89 (0.027) [1.86 - 1.92]	1.92 (0.030) [1.93 - 1.94]	-0.027 (0.028) [-0.058 - -0.0052]	-0.12, 0.063	0.409	(1.92 - 2.25) [1.73, 2.35]
Serine (% DW)	1.94 (0.031) [1.90 - 1.98]	1.92 (0.035) [1.94 - 1.94]	0.027 (0.031) [0.016 - 0.039]	-0.071, 0.12	0.447	(1.96 - 2.30) [1.75, 2.38]
Threonine (% DW)	1.52 (0.029) [1.50 - 1.55]	1.52 (0.032) [1.52 - 1.55]	-0.0018 (0.028) [-0.016 - 0.0045]	-0.090, 0.086	0.951	(1.54 - 1.74) [1.40, 1.83]
Tryptophan (% DW)	0.49 (0.010) [0.47 - 0.51]	0.47 (0.010) [0.47 - 0.49]	0.022 (0.0034) [0.020 - 0.027]	0.012, 0.033	0.006	(0.47 - 0.55) [0.43, 0.59]

**Table 10. Statistical Summary of Site NC Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Tyrosine (% DW)	1.03 (0.041) [0.96 - 1.09]	1.07 (0.050) [1.03 - 1.12]	-0.044 (0.063) [-0.088 - 0.057]	-0.24, 0.16	0.534	(1.04 - 1.31) [0.85, 1.48]
Valine (% DW)	1.82 (0.028) [1.80 - 1.85]	1.82 (0.031) [1.83 - 1.85]	-0.0029 (0.027) [-0.015 - -0.0054]	-0.089, 0.083	0.921	(1.83 - 2.13) [1.64, 2.22]
<b>Fatty Acid (% Total FA)</b>						
10:0 Capric Acid (% Total FA)	0.25 (0.0095) [0.24 - 0.25]	0.22 (0.012) [0.21 - 0.24]	0.022 (0.015) [0.017 - 0.037]	-0.025, 0.070	0.231	(0.15 - 0.27) [0.065, 0.34]
14:0 Myristic Acid (% Total FA)	0.097 (0.0013) [0.094 - 0.10]	0.095 (0.0015) [0.092 - 0.096]	0.0028 (0.0013) [0.0018 - 0.0025]	-0.0013, 0.0070	0.119	(0.064 - 0.097) [0.052, 0.12]
16:0 Palmitic Acid (% Total FA)	12.24 (0.050) [12.19 - 12.30]	12.02 (0.061) [11.91 - 12.13]	0.22 (0.079) [0.057 - 0.40]	-0.036, 0.47	0.072	(9.80 - 12.38) [8.88, 13.53]
16:1 Palmitoleic Acid (% Total FA)	0.086 (0.0016) [0.084 - 0.089]	0.10 (0.0020) [0.098 - 0.10]	-0.014 (0.0026) [-0.018 - -0.0093]	-0.022, -0.0056	0.012	(0.073 - 0.14) [0.037, 0.15]
17:0 Heptadecanoic Acid (% Total FA)	0.093 (0.0014) [0.090 - 0.095]	0.088 (0.0017) [0.088 - 0.090]	0.0044 (0.0019) [0.0033 - 0.0074]	-0.0017, 0.010	0.104	(0.076 - 0.10) [0.066, 0.11]
17:1 Heptadecenoic Acid (% Total FA)	0.038 (0.0032) [0.037 - 0.039]	0.040 (0.0039) [0.040 - 0.040]	-0.0022 (0.0050) [-0.0018 - -0.0011]	-0.018, 0.014	0.690	(0.020 - 0.064) [0.0058, 0.083]

**Table 10. Statistical Summary of Site NC Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fatty Acid (% Total FA)</b>						
18:0 Stearic Acid (% Total FA)	4.42 (0.065) [4.34 - 4.49]	4.79 (0.080) [4.66 - 4.92]	-0.36 (0.10) [-0.57 - -0.17]	-0.69, -0.035	0.038	(3.21 - 5.24) [1.88, 6.25]
18:1 Oleic Acid (% Total FA)	19.78 (0.35) [19.21 - 20.21]	21.60 (0.43) [20.83 - 22.37]	-1.82 (0.56) [-3.16 - -0.62]	-3.60, -0.036	0.047	(16.69 - 35.16) [5.01, 42.01]
18:2 Linoleic Acid (% Total FA)	54.21 (0.31) [53.89 - 54.61]	52.62 (0.38) [51.93 - 53.30]	1.59 (0.49) [0.58 - 2.68]	0.046, 3.14	0.046	(44.17 - 57.72) [38.57, 66.94]
18:3 Linolenic Acid (% Total FA)	7.45 (0.087) [7.33 - 7.66]	7.11 (0.11) [6.98 - 7.25]	0.34 (0.14) [0.079 - 0.68]	-0.10, 0.78	0.091	(4.27 - 8.81) [2.69, 10.81]
20:0 Arachidic Acid (% Total FA)	0.49 (0.0072) [0.49 - 0.50]	0.51 (0.0088) [0.50 - 0.53]	-0.019 (0.011) [-0.044 - -0.0020]	-0.056, 0.017	0.185	(0.36 - 0.55) [0.23, 0.64]
20:1 Eicosenoic Acid (% Total FA)	0.25 (0.0057) [0.24 - 0.26]	0.23 (0.0064) [0.23 - 0.23]	0.014 (0.0059) [0.0054 - 0.014]	-0.0051, 0.033	0.102	(0.21 - 0.30) [0.16, 0.33]
20:2 Eicosadienoic Acid (% Total FA)	0.043 (0.0012) [0.041 - 0.044]	0.044 (0.0013) [0.042 - 0.045]	-0.0015 (0.0012) [-0.0013 - -0.00084]	-0.0054, 0.0023	0.296	(0.016 - 0.054) [0.0029, 0.083]
22:0 Behenic Acid (% Total FA)	0.55 (0.0059) [0.54 - 0.56]	0.53 (0.0072) [0.52 - 0.54]	0.025 (0.0092) [0.0057 - 0.034]	-0.0038, 0.055	0.069	(0.38 - 0.59) [0.30, 0.67]

**Table 10. Statistical Summary of Site NC Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	16.49 (0.69) [16.04 - 17.05]	15.85 (0.85) [15.49 - 16.20]	0.64 (1.09) [-0.16 - 1.56]	-2.84, 4.13	0.597	(12.79 - 17.98) [11.13, 20.21]
Neutral Detergent Fiber (% DW)	20.15 (1.15) [18.97 - 21.80]	17.24 (1.41) [17.16 - 17.32]	2.91 (1.82) [2.53 - 4.47]	-2.87, 8.69	0.207	(13.32 - 23.57) [7.24, 28.70]
<b>Proximate</b>						
Ash (% DW)	4.99 (0.039) [4.92 - 5.04]	5.05 (0.048) [4.98 - 5.12]	-0.063 (0.062) [-0.12 - -0.061]	-0.26, 0.13	0.383	(4.32 - 5.62) [3.74, 6.45]
Carbohydrates (% DW)	31.82 (3.28) [21.58 - 37.50]	36.64 (4.00) [36.15 - 36.58]	-4.82 (4.94) [-15.00 - 0.23]	-20.55, 10.91	0.401	(31.97 - 38.00) [28.17, 40.99]
Moisture (% FW)	7.21 (0.34) [7.08 - 7.33]	6.92 (0.41) [6.77 - 7.06]	0.29 (0.47) [0.27 - 0.31]	-1.22, 1.79	0.585	(5.48 - 11.70) [1.45, 12.81]
Protein (% DW)	37.02 (1.11) [36.49 - 37.46]	35.25 (1.36) [32.37 - 38.18]	1.77 (1.72) [-0.72 - 4.74]	-3.71, 7.25	0.378	(38.14 - 42.66) [35.30, 45.38]
Total Fat (% DW)	21.11 (0.65) [21.02 - 21.20]	20.63 (0.65) [20.59 - 20.66]	0.48 (0.92) [0.61 - 0.61]	-3.47, 4.43	0.651	(17.90 - 23.56) [14.74, 25.18]
<b>Vitamin</b>						
Vitamin E (mg/100g DW)	7.83 (0.29) [7.59 - 8.19]	6.14 (0.34) [5.47 - 6.55]	1.69 (0.35) [1.03 - 2.25]	0.56, 2.82	0.017	(1.65 - 8.08) [0, 11.09]

**Table 10. Statistical Summary of Site NC Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Antinutrient</b>						
Lectin (H.U./mg FW)	0.96 (0.39) [0.53 - 1.74]	0.54 (0.47) [0.32 - 0.85]	0.42 (0.57) [-0.23 - 1.42]	-1.39, 2.24	0.511	(0.090 - 2.47) [0, 3.40]
Phytic Acid (% DW)	1.76 (0.039) [1.69 - 1.83]	1.85 (0.047) [1.86 - 1.88]	-0.088 (0.051) [-0.11 - -0.026]	-0.25, 0.074	0.181	(1.10 - 2.32) [0.54, 3.05]
Raffinose (% DW)	1.38 (0.067) [1.23 - 1.47]	1.41 (0.082) [1.39 - 1.43]	-0.033 (0.11) [0.0042 - 0.080]	-0.37, 0.31	0.774	(0.52 - 1.62) [0.038, 2.24]
Stachyose (% DW)	4.56 (0.11) [4.32 - 4.72]	5.50 (0.13) [5.36 - 5.73]	-0.94 (0.14) [-1.00 - -0.72]	-1.37, -0.51	0.006	(1.97 - 5.55) [0.99, 7.93]
Trypsin Inhibitor (TIU/mg DW)	24.82 (1.64) [24.57 - 25.04]	25.72 (2.01) [22.49 - 28.96]	-0.90 (2.60) [-4.10 - 2.55]	-9.17, 7.37	0.751	(20.84 - 37.24) [13.58, 46.02]
<b>Isoflavone</b>						
Daidzein (mg/kg DW)	661.66 (45.55) [617.52 - 710.29]	589.26 (55.79) [583.50 - 595.01]	72.41 (72.02) [62.16 - 126.79]	-156.79, 301.60	0.388	(213.98 - 1273.94) [0, 1585.14]
Genistein (mg/kg DW)	715.20 (41.48) [668.18 - 746.88]	598.93 (50.80) [591.01 - 606.84]	116.27 (65.58) [123.71 - 155.87]	-92.43, 324.98	0.174	(148.06 - 1024.50) [0, 1352.86]
Glycitein (mg/kg DW)	187.13 (17.29) [147.65 - 228.15]	145.09 (20.56) [139.44 - 165.70]	42.05 (22.80) [19.91 - 88.71]	-30.52, 114.62	0.162	(32.42 - 208.45) [0, 272.12]

<sup>1</sup>DW = dry weight; FW = fresh weight; FA = fatty acid; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 11. Statistical Summary of Combined Site Soybean Forage Fiber and Proximate Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	37.17 (1.72) [30.04 - 58.25]	36.53 (1.72) [27.42 - 42.06]	0.65 (2.01) [-12.02 - 10.46]	-3.42, 4.71	0.749	(27.99 - 47.33) [14.93, 56.87]
Neutral Detergent Fiber (% DW)	47.16 (2.00) [37.02 - 55.99]	45.57 (2.00) [34.23 - 64.19]	1.59 (2.48) [-18.07 - 18.76]	-3.50, 6.68	0.526	(30.96 - 54.55) [21.51, 66.01]
<b>Proximate</b>						
Ash (% DW)	5.84 (0.30) [5.05 - 7.46]	6.32 (0.30) [5.10 - 8.13]	-0.48 (0.33) [-1.72 - 0.92]	-1.25, 0.29	0.190	(4.77 - 8.54) [2.46, 10.14]
Carbohydrates (% DW)	71.43 (1.12) [68.29 - 76.73]	70.97 (1.12) [63.68 - 74.26]	0.47 (0.61) [-2.28 - 4.62]	-0.79, 1.73	0.452	(60.61 - 77.26) [56.93, 85.88]
Moisture (% FW)	72.86 (1.19) [70.10 - 76.80]	73.41 (1.19) [69.40 - 78.10]	-0.55 (0.49) [-2.30 - 1.70]	-1.67, 0.58	0.296	(66.50 - 80.20) [57.84, 88.56]
Protein (% DW)	17.39 (1.07) [13.56 - 20.03]	17.07 (1.07) [14.20 - 23.29]	0.32 (0.60) [-3.57 - 2.22]	-0.90, 1.54	0.591	(12.68 - 22.92) [7.05, 27.27]
Total Fat (% DW)	5.30 (0.34) [3.60 - 6.82]	5.65 (0.34) [4.23 - 7.23]	-0.35 (0.26) [-2.76 - 0.70]	-0.89, 0.19	0.195	(3.48 - 7.88) [1.11, 9.11]

<sup>1</sup>DW = dry weight; FW = fresh weight; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 12. Statistical Summary of Combined Site Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Alanine (% DW)	1.72 (0.029) [1.66 - 1.84]	1.69 (0.029) [1.59 - 1.82]	0.036 (0.016) [-0.034 - 0.099]	0.0044, 0.068	0.027	(1.66 - 1.93) [1.49, 2.02]
Arginine (% DW)	2.68 (0.069) [2.36 - 3.00]	2.58 (0.069) [2.37 - 2.89]	0.096 (0.058) [-0.16 - 0.31]	-0.039, 0.23	0.138	(2.54 - 2.99) [2.22, 3.25]
Aspartic Acid (% DW)	4.90 (0.10) [4.61 - 5.26]	4.85 (0.10) [4.46 - 5.34]	0.053 (0.055) [-0.23 - 0.31]	-0.059, 0.17	0.339	(4.74 - 5.50) [4.22, 5.96]
Cystine (% DW)	0.62 (0.014) [0.57 - 0.67]	0.61 (0.014) [0.56 - 0.69]	0.0051 (0.014) [-0.11 - 0.066]	-0.024, 0.034	0.718	(0.53 - 0.68) [0.45, 0.77]
Glutamic Acid (% DW)	7.65 (0.15) [7.25 - 8.21]	7.53 (0.15) [6.89 - 8.26]	0.12 (0.084) [-0.29 - 0.46]	-0.056, 0.29	0.177	(7.53 - 8.72) [6.60, 9.37]
Glycine (% DW)	1.75 (0.026) [1.63 - 1.89]	1.70 (0.026) [1.64 - 1.85]	0.049 (0.017) [-0.0052 - 0.12]	0.014, 0.083	0.007	(1.67 - 1.99) [1.49, 2.09]
Histidine (% DW)	1.12 (0.015) [1.05 - 1.18]	1.08 (0.015) [1.03 - 1.15]	0.043 (0.011) [-0.00077 - 0.090]	0.021, 0.064	<0.001	(1.04 - 1.24) [0.94, 1.31]
Isoleucine (% DW)	1.81 (0.037) [1.68 - 1.99]	1.76 (0.037) [1.64 - 1.96]	0.052 (0.020) [-0.044 - 0.12]	0.0061, 0.098	0.031	(1.73 - 2.02) [1.54, 2.14]

**Table 12. Statistical Summary of Combined Site Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Leucine (% DW)	3.04 (0.066) [2.82 - 3.36]	2.94 (0.066) [2.73 - 3.29]	0.095 (0.040) [-0.044 - 0.23]	0.0018, 0.19	0.046	(2.93 - 3.32) [2.64, 3.52]
Lysine (% DW)	2.74 (0.060) [2.48 - 2.99]	2.62 (0.060) [2.42 - 2.91]	0.12 (0.046) [-0.12 - 0.39]	0.028, 0.21	0.012	(2.35 - 3.15) [2.05, 3.47]
Methionine (% DW)	0.53 (0.012) [0.48 - 0.58]	0.53 (0.012) [0.47 - 0.59]	0.0043 (0.014) [-0.094 - 0.080]	-0.023, 0.032	0.754	(0.49 - 0.62) [0.42, 0.68]
Phenylalanine (% DW)	2.15 (0.056) [1.91 - 2.48]	2.04 (0.056) [1.91 - 2.38]	0.11 (0.052) [-0.036 - 0.41]	-0.013, 0.23	0.073	(1.97 - 2.44) [1.66, 2.64]
Proline (% DW)	2.01 (0.035) [1.86 - 2.16]	1.96 (0.035) [1.85 - 2.12]	0.042 (0.021) [-0.058 - 0.11]	-0.0069, 0.091	0.082	(1.92 - 2.25) [1.73, 2.35]
Serine (% DW)	2.03 (0.032) [1.90 - 2.19]	1.96 (0.032) [1.87 - 2.13]	0.060 (0.019) [0.010 - 0.14]	0.020, 0.10	0.004	(1.96 - 2.30) [1.75, 2.38]
Threonine (% DW)	1.60 (0.020) [1.50 - 1.72]	1.55 (0.020) [1.49 - 1.68]	0.046 (0.016) [-0.016 - 0.13]	0.0078, 0.084	0.024	(1.54 - 1.74) [1.40, 1.83]
Tryptophan (% DW)	0.51 (0.0068) [0.47 - 0.54]	0.50 (0.0068) [0.46 - 0.53]	0.011 (0.0067) [-0.039 - 0.075]	-0.0024, 0.025	0.102	(0.47 - 0.55) [0.43, 0.59]

**Table 12. Statistical Summary of Combined Site Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Amino Acid (% DW)</b>						
Tyrosine (% DW)	1.13 (0.034) [0.96 - 1.33]	1.10 (0.034) [0.98 - 1.22]	0.039 (0.029) [-0.11 - 0.25]	-0.028, 0.11	0.213	(1.04 - 1.31) [0.85, 1.48]
Valine (% DW)	1.92 (0.032) [1.80 - 2.07]	1.86 (0.032) [1.76 - 2.04]	0.053 (0.022) [-0.033 - 0.12]	0.0029, 0.10	0.040	(1.83 - 2.13) [1.64, 2.22]
<b>Fatty Acid (% Total FA)</b>						
10:0 Capric Acid (% Total FA)	0.20 (0.014) [0.14 - 0.25]	0.21 (0.014) [0.16 - 0.26]	-0.010 (0.020) [-0.11 - 0.048]	-0.053, 0.032	0.607	(0.15 - 0.27) [0.065, 0.34]
14:0 Myristic Acid (% Total FA)	0.093 (0.0031) [0.082 - 0.10]	0.094 (0.0031) [0.083 - 0.11]	-0.00056 (0.0019) [-0.0085 - 0.0025]	-0.0048, 0.0037	0.769	(0.064 - 0.097) [0.052, 0.12]
16:0 Palmitic Acid (% Total FA)	11.80 (0.12) [11.32 - 12.30]	11.88 (0.12) [11.50 - 12.13]	-0.079 (0.081) [-0.72 - 0.40]	-0.27, 0.11	0.359	(9.80 - 12.38) [8.88, 13.53]
16:1 Palmitoleic Acid (% Total FA)	0.092 (0.0033) [0.073 - 0.11]	0.095 (0.0033) [0.078 - 0.11]	-0.0028 (0.0029) [-0.018 - 0.015]	-0.0097, 0.0041	0.372	(0.073 - 0.14) [0.037, 0.15]
17:0 Heptadecanoic Acid (% Total FA)	0.094 (0.0021) [0.084 - 0.10]	0.093 (0.0021) [0.082 - 0.099]	0.0011 (0.0018) [-0.0064 - 0.0074]	-0.0030, 0.0052	0.553	(0.076 - 0.10) [0.066, 0.11]
17:1 Heptadecenoic Acid (% Total FA)	0.041 (0.0032) [0.023 - 0.048]	0.041 (0.0032) [0.019 - 0.047]	-0.00009 (0.0040) [-0.020 - 0.022]	-0.0092, 0.0090	0.981	(0.020 - 0.064) [0.0058, 0.083]

**Table 12. Statistical Summary of Combined Site Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fatty Acid (% Total FA)</b>						
18:0 Stearic Acid (% Total FA)	4.59 (0.22) [3.97 - 5.36]	4.70 (0.22) [4.03 - 5.36]	-0.12 (0.11) [-0.57 - 0.29]	-0.38, 0.14	0.328	(3.21 - 5.24) [1.88, 6.25]
18:1 Oleic Acid (% Total FA)	22.35 (1.28) [19.21 - 26.64]	22.71 (1.28) [20.34 - 28.78]	-0.36 (0.49) [-3.16 - 2.04]	-1.51, 0.79	0.486	(16.69 - 35.16) [5.01, 42.01]
18:2 Linoleic Acid (% Total FA)	52.16 (0.95) [49.32 - 54.63]	51.76 (0.95) [47.18 - 54.07]	0.40 (0.38) [-1.35 - 2.68]	-0.48, 1.29	0.320	(44.17 - 57.72) [38.57, 66.94]
18:3 Linolenic Acid (% Total FA)	7.24 (0.45) [5.55 - 8.41]	7.11 (0.45) [5.34 - 8.26]	0.13 (0.12) [-0.40 - 0.68]	-0.13, 0.40	0.276	(4.27 - 8.81) [2.69, 10.81]
20:0 Arachidic Acid (% Total FA)	0.51 (0.025) [0.41 - 0.58]	0.51 (0.025) [0.41 - 0.57]	-0.0027 (0.013) [-0.044 - 0.047]	-0.032, 0.026	0.836	(0.36 - 0.55) [0.23, 0.64]
20:1 Eicosenoic Acid (% Total FA)	0.24 (0.012) [0.19 - 0.28]	0.23 (0.012) [0.18 - 0.28]	0.0044 (0.010) [-0.065 - 0.046]	-0.020, 0.029	0.683	(0.21 - 0.30) [0.16, 0.33]
20:2 Eicosadienoic Acid (% Total FA)	0.040 (0.0030) [0.020 - 0.054]	0.042 (0.0030) [0.020 - 0.047]	-0.0024 (0.0042) [-0.024 - 0.011]	-0.012, 0.0068	0.585	(0.016 - 0.054) [0.0029, 0.083]
22:0 Behenic Acid (% Total FA)	0.56 (0.028) [0.46 - 0.65]	0.54 (0.028) [0.45 - 0.65]	0.023 (0.0084) [-0.00071 - 0.078]	0.0041, 0.042	0.022	(0.38 - 0.59) [0.30, 0.67]

**Table 12. Statistical Summary of Combined Site Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Fiber</b>						
Acid Detergent Fiber (% DW)	15.58 (0.49) [13.53 - 17.05]	15.62 (0.49) [14.00 - 19.02]	-0.042 (0.58) [-2.84 - 1.88]	-1.37, 1.28	0.943	(12.79 - 17.98) [11.13, 20.21]
Neutral Detergent Fiber (% DW)	17.33 (0.70) [15.06 - 21.80]	17.28 (0.70) [15.02 - 22.45]	0.057 (0.74) [-6.43 - 4.47]	-1.67, 1.78	0.940	(13.32 - 23.57) [7.24, 28.70]
<b>Proximate</b>						
Ash (% DW)	5.20 (0.18) [4.70 - 5.90]	5.14 (0.18) [4.70 - 5.88]	0.054 (0.043) [-0.14 - 0.21]	-0.046, 0.15	0.246	(4.32 - 5.62) [3.74, 6.45]
Carbohydrates (% DW)	34.22 (1.50) [21.58 - 39.61]	36.44 (1.50) [29.88 - 43.48]	-2.22 (1.02) [-15.00 - 2.56]	-4.31, -0.14	0.037	(31.97 - 38.00) [28.17, 40.99]
Moisture (% FW)	7.52 (0.38) [5.86 - 10.70]	6.84 (0.38) [5.44 - 8.74]	0.68 (0.47) [-0.96 - 4.70]	-0.28, 1.64	0.159	(5.48 - 11.70) [1.45, 12.81]
Protein (% DW)	39.27 (0.86) [36.49 - 42.23]	37.80 (0.86) [32.29 - 41.87]	1.46 (0.54) [-0.73 - 6.49]	0.24, 2.68	0.023	(38.14 - 42.66) [35.30, 45.38]
Total Fat (% DW)	20.29 (0.78) [17.33 - 23.08]	20.12 (0.77) [17.24 - 22.55]	0.17 (0.39) [-1.82 - 1.98]	-0.71, 1.05	0.670	(17.90 - 23.56) [14.74, 25.18]
<b>Vitamin</b>						
Vitamin E (mg/100g DW)	7.69 (0.52) [6.36 - 9.62]	6.24 (0.52) [4.88 - 7.94]	1.45 (0.27) [0.57 - 2.25]	0.81, 2.09	<0.001	(1.65 - 8.08) [0, 11.09]

**Table 12. Statistical Summary of Combined Site Soybean Seed Amino Acid, Fatty Acid, Fiber, Proximate, Vitamin, Antinutrient and Isoflavone Content for Test (MON 87701) vs. the Conventional Control (A5547) (cont.)**

Analyte (Units) <sup>1</sup>	MON 87701 Mean (S.E.) [Range]	A5547 Mean (S.E.) [Range]	Difference (Test minus Control)			Commercial (Range) [99% Tolerance Interval <sup>2</sup> ]
			Mean (S.E.) [Range]	95% CI (Lower, Upper)	p-Value	
<b>Antinutrient</b>						
Lectin (H.U./mg FW)	0.96 (0.19) [0.062 - 2.01]	0.72 (0.19) [0.28 - 1.28]	0.24 (0.25) [-0.88 - 1.42]	-0.27, 0.74	0.354	(0.090 - 2.47) [0, 3.40]
Phytic Acid (% DW)	1.85 (0.12) [1.39 - 2.29]	1.97 (0.12) [1.31 - 2.66]	-0.11 (0.097) [-0.53 - 0.31]	-0.34, 0.11	0.276	(1.10 - 2.32) [0.54, 3.05]
Raffinose (% DW)	1.33 (0.19) [0.49 - 1.70]	1.34 (0.19) [0.43 - 1.85]	-0.0086 (0.074) [-0.32 - 0.19]	-0.18, 0.16	0.910	(0.52 - 1.62) [0.038, 2.24]
Stachyose (% DW)	4.59 (0.63) [1.83 - 6.42]	4.93 (0.63) [2.27 - 6.65]	-0.34 (0.22) [-1.00 - 0.73]	-0.83, 0.16	0.156	(1.97 - 5.55) [0.99, 7.93]
Trypsin Inhibitor (TIU/mg DW)	26.06 (1.24) [21.65 - 32.53]	28.57 (1.24) [22.49 - 34.20]	-2.51 (0.96) [-7.75 - 6.33]	-4.48, -0.54	0.014	(20.84 - 37.24) [13.58, 46.02]
<b>Isoflavone</b>						
Daidzein (mg/kg DW)	667.54 (108.30) [188.96 - 983.26]	604.88 (108.30) [198.95 - 830.65]	62.65 (25.68) [-27.87 - 178.54]	3.56, 121.74	0.040	(213.98 - 1273.94) [0, 1585.14]
Genistein (mg/kg DW)	655.57 (88.52) [214.73 - 863.84]	594.58 (88.52) [244.95 - 760.87]	60.99 (36.27) [-30.22 - 178.22]	-23.10, 145.09	0.132	(148.06 - 1024.50) [0, 1352.86]
Glycitein (mg/kg DW)	164.87 (21.23) [61.08 - 228.79]	156.93 (21.23) [61.28 - 227.25]	7.94 (13.22) [-49.56 - 88.71]	-22.57, 38.44	0.564	(32.42 - 208.45) [0, 272.12]

<sup>1</sup>DW = dry weight; FW = fresh weight; FA = fatty acid; S.E. = standard error; CI = Confidence Interval.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Table 13. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547) and Commercial Reference Substances**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in Combined-Site Analysis</b>							
<b>Seed Amino Acid (% DW)</b>							
Alanine (% DW)	Combined Site	1.72	1.69	2.15	0.027	[1.66 - 1.84]	[1.49, 2.02]
Glycine (% DW)	Combined Site	1.75	1.70	2.88	0.007	[1.63 - 1.89]	[1.49, 2.09]
Histidine (% DW)	Combined Site	1.12	1.08	3.94	<0.001	[1.05 - 1.18]	[0.94, 1.31]
Isoleucine (% DW)	Combined Site	1.81	1.76	2.94	0.031	[1.68 - 1.99]	[1.54, 2.14]
Leucine (% DW)	Combined Site	3.04	2.94	3.23	0.046	[2.82 - 3.36]	[2.64, 3.52]
Lysine (% DW)	Combined Site	2.74	2.62	4.63	0.012	[2.48 - 2.99]	[2.05, 3.47]
Serine (% DW)	Combined Site	2.03	1.96	3.08	0.004	[1.90 - 2.19]	[1.75, 2.38]
Threonine (% DW)	Combined Site	1.60	1.55	2.95	0.024	[1.50 - 1.72]	[1.40, 1.83]
Valine (% DW)	Combined Site	1.92	1.86	2.85	0.040	[1.80 - 2.07]	[1.64, 2.22]
<b>Seed Fatty Acid (% Total FA)</b>							
22:0 Behenic Acid (% Total FA)	Combined Site	0.56	0.54	4.33	0.022	[0.46 - 0.65]	[0.30, 0.67]

**Table 13. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547) and Commercial Reference Substances (cont.)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in Combined-Site Analysis</b>							
<b>Seed Proximate</b>							
Carbohydrates (% DW)	Combined Site	34.22	36.44	-6.10	0.037	[21.58 - 39.61]	[28.17, 40.99]
Protein (% DW)	Combined Site	39.27	37.80	3.87	0.023	[36.49 - 42.23]	[35.30, 45.38]
<b>Seed Vitamin</b>							
Vitamin E (mg/100g DW)	Combined Site	7.69	6.24	23.26	<0.001	[6.36 - 9.62]	[0, 11.09]
<b>Seed Antinutrient</b>							
Trypsin Inhibitor (TIU/mg DW)	Combined Site	26.06	28.57	-8.79	0.014	[21.65 - 32.53]	[13.58, 46.02]
<b>Seed Isoflavone</b>							
Daidzein (mg/kg DW)	Combined Site	667.54	604.88	10.36	0.040	[188.96 - 983.26]	[0, 1585.14]
<b>Statistical Differences Observed in More than One Individual Site</b>							
<b>Seed Amino Acid (% DW)</b>							
Arginine (% DW)	Site GA	2.80	2.57	8.75	0.011	[2.72 - 2.91]	[2.22, 3.25]
	Site IL	2.61	2.44	6.88	0.045	[2.49 - 2.70]	
Histidine (% DW)	Site GA	1.15	1.09	5.17	0.019	[1.13 - 1.16]	[0.94, 1.31]
	Site IL	1.11	1.05	4.90	0.036	[1.09 - 1.13]	
Tyrosine (% DW)	Site AL	1.32	1.20	9.95	0.034	[1.28 - 1.33]	[0.85, 1.48]

**Table 13. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547) and Commercial Reference Substances (cont.)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in More than One Individual Site</b>							
<b>Seed Amino Acid (% DW)</b>							
Tyrosine (% DW)	Site IL	1.10	1.01	9.14	0.003	[1.07 - 1.13]	
<b>Seed Fatty Acid (% Total FA)</b>							
22:0 Behenic Acid (% Total FA)	Site AR	0.47	0.46	3.08	0.037	[0.46 - 0.48]	[0.30, 0.67]
	Site GA	0.60	0.55	8.24	0.029	[0.58 - 0.62]	
<b>Seed Vitamin</b>							
Vitamin E (mg/100g DW)	Site AR	6.88	5.03	36.69	<0.001	[6.77 - 7.08]	[0, 11.09]
	Site GA	9.16	7.77	17.81	0.011	[8.51 - 9.62]	
	Site IL	6.72	5.31	26.56	<0.001	[6.36 - 7.27]	
	Site NC	7.83	6.14	27.55	0.017	[7.59 - 8.19]	
<b>Seed Antinutrient</b>							
Stachyose (% DW)	Site AL	1.84	2.37	-22.36	0.024	[1.83 - 1.89]	[0.99, 7.93]
	Site NC	4.56	5.50	-17.12	0.006	[4.32 - 4.72]	
<b>Seed Isoflavone</b>							
Daidzein (mg/kg DW)	Site AR	767.90	658.21	16.67	0.031	[747.32 - 793.95]	[0, 1585.14]

**Table 13. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547) and Commercial Reference Substances (cont.)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in More than One Individual Site</b>							
<b>Seed Isoflavone</b>							
Daidzein (mg/kg DW)	Site IL	890.96	803.42	10.90	0.042	[834.82 - 983.26]	
<b>Statistical Differences Observed in One Site</b>							
<b>Forage Fiber</b>							
Neutral Detergent Fiber (% DW)	Site AR	49.83	38.62	29.02	0.023	[46.69 - 55.99]	[21.51, 66.01]
<b>Seed Amino Acid (% DW)</b>							
Isoleucine (% DW)	Site GA	1.81	1.74	4.23	0.029	[1.77 - 1.84]	[1.54, 2.14]
Leucine (% DW)	Site GA	3.04	2.91	4.59	0.014	[2.98 - 3.09]	[2.64, 3.52]
Proline (% DW)	Site GA	2.00	1.94	3.56	0.025	[1.99 - 2.02]	[1.73, 2.35]
Tryptophan (% DW)	Site NC	0.49	0.47	4.75	0.006	[0.47 - 0.51]	[0.43, 0.59]
Valine (% DW)	Site GA	1.91	1.84	3.96	0.035	[1.88 - 1.94]	[1.64, 2.22]
<b>Seed Fatty Acid (% Total FA)</b>							
16:0 Palmitic Acid (% Total FA)	Site IL	11.53	11.71	-1.48	0.025	[11.39 - 11.63]	[8.88, 13.53]
16:1 Palmitoleic Acid (% Total FA)	Site NC	0.086	0.10	-13.81	0.012	[0.084 - 0.089]	[0.037, 0.15]
18:0 Stearic Acid (% Total FA)	Site NC	4.42	4.79	-7.62	0.038	[4.34 - 4.49]	[1.88, 6.25]

**Table 13. Summary of Differences (p<0.05) for the Comparison of Soybean Analyte Levels for Test (MON 87701) vs. the Conventional Control (A5547) and Commercial Reference Substances (cont.)**

Analyte (Units) <sup>1</sup>	Site	MON 87701 Mean	A5547 Mean	Mean Difference (Test minus Control)		Test Range	Commercial Tolerance Interval <sup>2</sup>
				Mean Difference (% of A5547)	Signif. (p-Value)		
<b>Statistical Differences Observed in One Site</b>							
<b>Seed Fatty Acid (% Total FA)</b>							
18:1 Oleic Acid (% Total FA)	Site NC	19.78	21.60	-8.42	0.047	[19.21 - 20.21]	[5.01, 42.01]
18:2 Linoleic Acid (% Total FA)	Site NC	54.21	52.62	3.03	0.046	[53.89 - 54.61]	[38.57, 66.94]
20:1 Eicosenoic Acid (% Total FA)	Site GA	0.24	0.22	5.27	0.035	[0.23 - 0.24]	[0.16, 0.33]
<b>Seed Proximate</b>							
Ash (% DW)	Site IL	5.42	5.29	2.42	0.039	[5.20 - 5.55]	[3.74, 6.45]
Carbohydrates (% DW)	Site IL	36.65	39.17	-6.45	0.024	[35.60 - 37.72]	[28.17, 40.99]
<b>Seed Antinutrient</b>							
Trypsin Inhibitor (TIU/mg DW)	Site GA	23.28	29.27	-20.48	0.005	[21.65 - 25.24]	[13.58, 46.02]
<b>Seed Isoflavone</b>							
Genistein (mg/kg DW)	Site AR	807.35	680.07	18.72	0.007	[771.77 - 840.99]	[0, 1352.86]

<sup>1</sup>DW = dry weight; FA = fatty acid.

<sup>2</sup>With 95% confidence, interval contains 99% of the values expressed in the population of commercial substances. Negative limits were set to zero.

**Listing 1. Analytes Excluded from Summary and Analysis Due to Excessive Observations Below the Assay's Limit of Quantitation**

Tissue	Category	Analyte	(N) Below LOQ	(N) Total	(%)
Seed	Fatty Acid	12:0 Lauric Acid	63	63	100.0
		14:1 Myristoleic Acid	63	63	100.0
		15:0 Pentadecanoic Acid	63	63	100.0
		15:1 Pentadecenoic Acid	63	63	100.0
		18:3 Gamma Linolenic Acid	63	63	100.0
		20:3 Eicosatrienoic Acid	63	63	100.0
		20:4 Arachidonic Acid	63	63	100.0
		22:1 Erucic Acid	63	63	100.0
		8:0 Caprylic Acid	63	63	100.0

**Listing 2. Analytes with Observations Below the Assay's Limit of Quantitation Not Excluded from Summaries and Analysis**

Tissue	Category	Analyte	Material	Site	Rep	Original Value	Value Assigned	
Seed	Fatty Acid	17:1 Heptadecenoic Acid	A5547	Site GA	2	<0.00513	0.0026	
			Fowler	Site NC	3	<0.00513	0.0026	
			MON 87701	Site AR	3	<0.00513	0.0026	
			Test 2	Site IL	1	<0.00513	0.0026	
				Site IL	3	<0.00513	0.0026	
				Site NC	2	<0.00513	0.0026	
				Site NC	3	<0.00513	0.0026	
			USG 5601T	Site NC	3	<0.00513	0.0026	
			20:2 Eicosadienoic Acid	A5547	Site AR	2	<0.00517	0.0026
				CMC 5901COC	Site GA	2	<0.00517	0.0026
		H6686		Site AL	3	<0.00517	0.0026	
		Hornbeck C5894		Site AR	3	<0.00517	0.0026	
		MON 87701		Site AL	1	<0.00517	0.0026	
				Site AR	2	<0.00517	0.0026	
				Site AR	3	<0.00517	0.0026	
		Test 2		Site IL	1	<0.00517	0.0026	
				Site IL	3	<0.00517	0.0026	