

**Application A1081 – Food derived from herbicide-tolerant soybean line SYHTOH2.**

**Submission From:** Claire McFee Director Organise Your Life [REDACTED],  
[REDACTED]

To whom it may concern,

Thank you for the opportunity to provide this submission against approving food derived from herbicide-tolerant soybean line SYHTOH2

**My concerns about this GMO being approved have to do with:**

- Biased health and environmental research
- Inadequate health and environmental research
- The fact that biotech companies who carry out research on GMO's are not required to submit any negative findings.
- The complete disregard of opposing GMO research
- Food sovereignty/security
- Not enough regard for long term consumer safety
- Not enough consumer information about GMO foods
- If so many other countries have banned GMO's why haven't we at least put a moratorium in place until adequate independent research has been carried out.
- Inadequate reporting system set up for those suffering from GMO related health problems – human and animal
- Not enough thought given to the financial longevity of Australian farmers given they are not able to 'save GMO seeds' – with this serious problem already evident in countries like India
- The issues surrounding the potential financial crippling of business ruined by contamination of their crops by GMO seeds, which due to their patents can be infringed upon and tied up in court cases for years.
- The issues around creating monocultures and lack of biodiversity
- The myths surrounding the benefits of saturating the world with GMO's to purportedly save the world from hunger when it clearly has not had this affect nor will it due to the increasingly reliance on chemicals from those same companies selling the seeds (creating an unfair monopoly) and the above mentioned inability to save seeds.
- FSANZ role is supposed to protect the Australian public from foods that may cause harm and given there appears to be more than enough reasons to wait to approve any more GMO's until more research is done to allay the growing concerns and evidence against GMO's.

I would like to say at the outset that I am not opposed to gene altering technology on the whole but I am opposed the approval of GMO's in Australia that have been approved primarily on inadequate research conducted by the companies who have developed the seeds due to this being a direct conflict of interest. There are now a significant number of countries and States of numerous countries who have banned GMO's due to the growing belief that there hasn't been enough adequate research. This is based on the belief that GMO's may be of concern to human and animal health as well as a threat to the environment and therefore food security. This should be reason enough for FSANZ to stop approving any GMO's until such time that this has been rectified and proven otherwise.

I am disturbed by the attitude of some people in government decision making roles that research concluding that GMO's are unsafe for animal and human consumption are 'conducted by anti GMO activists' rather than seeing them as experienced scientists who have come to their conclusion independently. Irrespective of whether they are anti GMO, the evidence should speak for itself and even if it is not perfect (as with the research provided by the companies who technologies you are approving) if there is enough alarm bells ringing then isn't it common sense that we should stop until we are certain they are safe?

One only has to look at numerous issues that were largely ignored in the past which was predicted by some on the scientific community sometimes decades earlier. Such as water and soil degradation/greenhouse effect/ozone layer depletion/the obesity epidemic/multiple resistant antibiotics through overuse/cigarette smoking and their link to cancer to name just a few. It's all about long term cumulative effect and also the effect of the interaction of any 'matter' not normally found in the food supply.

I apologise in advance for the length of my submission, but in case you haven't read/seen/heard some of the highly relevant information I have found then I thought it was important to include all the compelling and worrying research I found.

Given this statement "FSANZ is required to use the best scientific evidence available in its decision-making processes", I would like to begin by reiterating that the 'best' scientific evidence in any case would therefore need to be carried out by an impartial body and not by a company who could profit by the results of the research they carry out.

**Below is a selection of information I believe is relevant to this submission.**

**Firstly if you haven't seen it please watch this video By The Health Ranger, Mike Adams**, explaining how studies in cell research have demonstrated the mechanism by which micro RNA from genetically engineered foods may alter organ function in humans. <http://www.youtube.com/watch?v=2kSmgAUuoYA#at=134>

Please take the time to watch this all encompassing movie Genetic Roulette with a plethora of experts who illustrate why they think there are major problems with genetically modified foods and the problems they are already causing. Due to your important role please your due diligence by watching the whole thing if you have not already. Thank you. [http://www.youtube.com/watch?v=EBlp\\_thTq0Y](http://www.youtube.com/watch?v=EBlp_thTq0Y) **Full Documentary of Genetic Roulette.**

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In addition please read this article from NCBI - the US National Library of Medicine National Institutes of Health highlighting major problems with exposure to herbicides such as glyphosate (GLYP) and gluphosinate via GMO's with disturbing results. <http://www.ncbi.nlm.nih.gov/pubmed/21338670> - Maternal and fetal exposure to pesticides associated to genetically modified foods in Eastern Townships of Quebec, Canada.

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**Please listen to this Radio interview with Jeffery Smith Executive Director of the Institute of Responsible Technology – who has been quoted by government leaders extensively. NB-** skip to 5 mins in for relevant part about soy beans and how it binds with trace minerals affects next crop rotation and also about concerns around GMO's affecting animals such as hamsters that by the third generation of being exposed to GMO's mostly become infertile. <http://www.youtube.com/watch?v=nt8pcUBmuw> - **The Hidden Truth - GM Food Dangers,**

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This very detailed interview is highly relevant to the application before so please watch in its entirety.

[http://www.youtube.com/watch?v=h\\_AHLDXF5aw](http://www.youtube.com/watch?v=h_AHLDXF5aw) - **Monsanto's Roundup Herbicide Jeffrey Smith interviewing co-author Stephanie Seneff, PhD, a Senior Research Scientist at MIT**

*In this interview amongst other things they cover information about the active ingredient Glyphophate in herbicides used on GMO crops causing devastation devastating effect of multiple chronic diseases ." The herbicide sprayed on most of the world's genetically engineered crops—and which gets soaked into the food portion—is now linked to "autism ... gastrointestinal issues such as inflammatory bowel disease, chronic diarrhea, colitis and Crohn's disease, obesity, cardiovascular disease, depression, cancer, cachexia, Alzheimer's disease, Parkinson's disease, multiple sclerosis, and ALS, among others."*

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**There are also many experienced vets who believe GMO feed given to animals is highly dangerous** given what they have observed in their practices since GMO's were introduced. "The symptoms veterinarians and researchers have observed in animals are not unlike many of the chronic, and increasingly prevalent, health problems plaguing

humans today. Digestive disorders; Damaged organs; Infertility; Weak immune systems; Chronic depression. "We've got a real mess," says Dr. Art Dunham, an Iowa veterinarian who has treated farm animals for several decades. Dunham is a staunch believer that GMO crops are wreaking havoc with the health of animals and humans.

To see the full article on this topic please go to - [http://www.organicconsumers.org/articles/article\\_28062.cfm](http://www.organicconsumers.org/articles/article_28062.cfm)

when humans eat the meat of animals fed GM Foods we are potentially causing much ill health in ourselves. Again, I say it is imperative that more independent long term research be done on animals and humans alike on ALL GMO's

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Many countries have already banned GM foods including all those listed here—  
<http://www.examiner.com/article/what-countries-have-banned-gmo-crops>

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Info about why Italy has chosen to ban this GMO with 80% support from the public. The topic of GMO's should be publicised more widely so that average Australians are able to make up their own minds and understand the issues around GMO's.

[http://www.organicconsumers.org/articles/article\\_27939.cfm](http://www.organicconsumers.org/articles/article_27939.cfm) - **Italy to Ban Monsanto GMO Corn with 80% Public Support**

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**Information from Dr.Vandana Shiva on why GMO's may contribute to world famine rather than prevent it.**



**5 Reasons Why GMOs are a Recipe for Global Famine**

**1. Patented Seeds** are illegal to save for replanting. farmers are denied their traditional right to save seed for replanting.

**2. Soil Infertility.** GMO agriculture is a chemical intensive system. Agrochemicals are building up in our bodies, our water and most of all, in our soil. The accumulation of Glyphosate (roundup weed killer) is especially alarming.

**3. Monocropping.** Because of industrial agriculture we have already lost 75 percent of the seed diversity passed down to us from our ancestors. Biodiversity equals food security.

**4. Terminator Seed Technology.** Terminator refers to plants that are genetically modified to kill their own seeds. Seeds harvested from terminator crops will not germinate if replanted the following season. Pollen from terminator plants can cross-pollinate with other natural varieties, making otherwise viable seeds infertile. The goal of this technology is crystal clear, it aims to maximize seed industry profits by preventing farmers from reusing seed from their harvest, forcing them to return to the commercial seed market every year.

**5. Dependency on a Centralized Food System.** A network of home gardens, and small to midsize farms offers far greater food security than a centralized, globalized system. Just as diversity of varieties is best, diversity of farms create a more stable food supply.

**Additionally please review the findings of analysis done on GM corn and non GM corn via ISIS –the Institute of Science in Society whose mission statement is :- ‘To promote science responsible to civil society and the public good, independent of commercial and other special interests, or of government control. ‘**

NB: As with all of the information provided that isn't to do with GM soy is still highly relevant as it hasn't been proven that these issues are not a problem for all GMO's.

[http://www.i-sis.org.uk/Stunning\\_differences\\_of\\_GM\\_from\\_non\\_GM\\_corn.php](http://www.i-sis.org.uk/Stunning_differences_of_GM_from_non_GM_corn.php) - A comparison of US Midwest non-GM with GM corn shows shockingly high levels of glyphosate as well as formaldehyde, and severely depleted of mineral nutrients in the GM corn by Dr Mae-WanHo

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**Please also take this study by Dr. Benedetti into consideration via Science Direct - a leading full-text scientific database offering journal articles and book chapters from more than 2,500 peer-reviewed journals and more than 11,000 books.**

<http://www.sciencedirect.com/science/article/pii/S138357181300003X> - **Genetic damage in soybean workers exposed to pesticides.** A new peer-reviewed study has found DNA damage and elevated cell death of blood cells in soybean workers exposed to fungicides, herbicides, and insecticides in Brazil. Glyphosate and 2,4-D were among the herbicides used by the exposed group. 2,4-D is increasingly used to combat glyphosate-resistant weeds in GM soybean fields.

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**In other related GM news worldwide here is some more information about India 's moratorium on GM crops -**

**<http://www.downtoearth.org.in/content/indefinite-ban-gm-field-trials-recommended>** - "A committee of technical experts comprising scientists from top public research laboratories and academic institutions set up by the Indian Supreme Court last year has changed the 10-year moratorium on field trials of Bt transgenics that it recommended in October 2012 to what appears to be an indefinite moratorium on food crops in its final report. Based on "the examination/study of the safety dossiers, it is apparent that there are major gaps in the regulatory system. These need to be addressed before issues related to tests can be meaningfully considered. Till such time it would not be advisable to conduct more field trials," the experts say in their final report without specifying any time frame."

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**In relation to the study submitted to you by the applicant -I have a few concerns.** One is the short time frame used for the study, as from my understanding and many of the scientists I have read about, it is the long term cumulative effect of toxins in the body and also the interactions of different toxins over time also that can be potential problems. Another issue is the fact that the 'oral toxicity study' that was done was not included so this could be publicly assessed –as highlighted below. Lastly in relation to the information provided by the applicant why is it that the LATEST version of the document was not provided which had additional information about '.. the OECD recommendations for analysis of phospholipids, sterols and saponins.'

**<http://www.foodstandards.gov.au/code/applications/Documents/A1081-GM-CFS-SD1.pdf>**  
**4.6.5 Acute oral toxicity study**

Study submitted: Eapen, A.K. (2012) AvHPPD-03: single dose oral (gavage) toxicity study in mice with a 2-day or 14-day observation period. Unpublished Syngenta Report, March 8, 2012. T007563-08.

***An acute oral toxicity study in mice, using bacterially-produced AvHPPD-03 protein was submitted by the Applicants but is not included in this safety assessment since no safety concerns were identified in any of the other studies. Similarly, an acute oral toxicity study is not required for the PAT protein.***

## Key components of soybean

For soybean intended for human food use, the key components considered important for compositional analysis include the proximates (moisture, crude protein, fat, ash, fibre), amino acids, fatty acids, minerals, vitamins, isoflavones, phospholipids, sterols, saponins and the anti-nutrients phytic acid, trypsin inhibitors, stachyose, raffinose and lectins, (OECD, 2012). ***It is noted that the OECD recommendations for analysis of phospholipids, sterols and saponins are not emphasised in the previous version of the consensus document (OECD, 2001) and that the compositional studies done by the Applicant were based on this previous version.***

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***Also of interest on the topic is this article in MDPI which is an Open Access Publishing of peer-reviewed, open access journals, established in 1996.*** As seen on their website 'MDPI publishes over 110 diverse open access electronic journals, including *Molecules* (launched in 1996; Impact Factor 2.428), the *International Journal of Molecular Sciences* (launched in 2000; Impact Factor 2.464), *Sensors* (launched in 2001; Impact Factor 1.953), *Marine Drugs* (launched in 2003; Impact Factor 3.978), *Energies* (launched in 2008; Impact Factor 1.844), the *International Journal of Environmental Research and Public Health* (launched in 2004; Impact Factor 1.998), *Viruses* (launched in 2009; Impact Factor 2.509), *Remote Sensing* (launched in 2009; Impact Factor 2.101), *Toxins* (launched in 2009; Impact Factor 2.129) and *Nutrients* (launched in 2009; Impact Factor 2.072). Our publishing activities are supported by more than 4000 active scientists on our journals' international editorial boards, including several Nobelists. More than 60,000 individual authors have already published with MDPI, and 170,000 scholars are in the pool of reviewers'

Not enough attention has been paid to the importance of the gut brain connection on this topic. For example Glyphosate has been shown to disrupt enzymes, which causes a multitude of problems as explained in detail by Stephanie Seneff, PhD, a Senior Research Scientist at MIT. Cancers often don't exhibit themselves until after 3 months. It is clear that there needs to be long term tests – Not just the usual max 90 day studies. Simply not long enough to conclusively show potential links to various diseases.

<http://www.mdpi.com/1099-4300/15/4/1416> - **Glyphosate's Suppression of Cytochrome P450 Enzymes and Amino Acid Biosynthesis by the Gut Microbiome: Pathways to Modern Diseases**

**Full details can be seen via the link about but here is part of their Abstract:**

"Glyphosate, the active ingredient in Roundup®. Glyphosate's inhibition of cytochrome P450 (CYP) enzymes is an overlooked component of its toxicity to mammals. CYP enzymes play crucial roles in biology, one of which is to detoxify xenobiotics. Thus, glyphosate enhances the damaging effects of other food borne chemical residues and environmental toxins. Negative impact on the body is insidious and **manifests slowly** over time as inflammation **damages cellular systems** throughout the body. Here, we show how interference with CYP enzymes acts synergistically with disruption of the biosynthesis of aromatic amino acids by gut bacteria, as well as impairment in serum sulfate transport. Consequences are most of the diseases and conditions associated with a Western diet, which include gastrointestinal disorders, obesity, diabetes, heart disease, depression, autism, infertility, cancer and Alzheimer's disease. We explain the documented effects of glyphosate and its ability to induce disease, and we show that glyphosate is the "textbook example" of exogenous semiotic entropy: the disruption of homeostasis by environmental toxins."

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**Next are excerpts from an article written by a journalist who after years of major health issues found that she was intolerant to GMO corn.** This is obviously anecdotal yet should not be dismissed because there are thousands of similar stories both here and overseas, yet due to the medical profession not knowing what they are looking for when it comes to possible reactions to GM foods and the lack of related reporting systems on this issue it is currently one big mess. Of most concern to me about this piece is that fact that after years of tests that they came back saying everything was 'normal'. Given what transpired when she finally found a specialist who could help identify the problem, clearly the current testing is woefully inadequate to identify such problems in

humans. Granted this anecdotal story is not about soy but I think still highlights problems with approving GMO's without more research nonetheless.

**The Bad Seed: The Health Risks of Genetically Modified Corn** -  
<http://www.elle.com/beauty/health-fitness/healthy-eating-avoid-gmo-corn>

- ***With symptoms including headaches, nausea, rashes, and fatigue, Caitlin Shetterly visited doctor after doctor searching for a cure for what ailed her. What she found, after years of misery and bafflement, was as unlikely as it was utterly common.***  
***BY Caitlin Shetterly July 24, 2013***

...At the office of allergist Paris Mansmann, MD

"I was 36. I'd been sick for three and a half years... I visited doctors and had tests...I had no diagnosis, just a collection of weird symptoms: tight, achy pain that radiated through my body and caused me to hobble around; burning rashes that splashed across my cheeks and around my mouth like pizza sauce; exhaustion; headaches; hands that froze into claws while I slept and hurt to uncurl in the morning; a constant head cold; nausea; and, on top of all that, severe insomnia—my body just could not, would not, turn off and rest. I visited every doctor who'd see me and tried everything they threw at me: antidepressants; painkillers; elimination diets (inc ...eight months..without any of the major allergens, ..gluten, nuts, dairy, soy, and nightshades); herbal supplements; iodine pills; steroid shots; hormone treatments; Chinese teas; acupuncture; energy healing; a meditation class—you name it, I did it. Nothing worked...I was sent to neurologists in Boston.

**All of my tests came back normal..** after a long and unhappy antibiotic treatment for Lyme disease, my newest GP (who's still my doctor today), Chuck de Sieyes, MD, announced that he was referring me to Mansmann—a third-generation allergist.. at Jefferson Medical College in Philadelphia... he helped his dad develop two asthma drugs. Later, he headed an allergy and immunology clinic at a West Virginia hospital for 10 years... He listened patiently, asking questions every so often: When did my rashes flare? Was the pain an ache in my muscles, or did it feel deeper? Was I worse after I slept or at the end of the day? Then, with no pyrotechnics, he offered his theory: "I think it's possible you've developed a reaction to genetically modified corn..." Mansmann explained that starting in the mid-1980s, the biotechnology giant Monsanto began to genetically alter corn to withstand its herbicide Roundup—the goal being to eradicate weeds but not crops—as well as to resist a pest called the corn borer. These small changes in the DNA of the corn are expressed by the plant as proteins. It's those proteins, Mansmann believes, that can act as allergens, provoking a multisystemic disorder marked by the overproduction of a type of white blood cell called an eosinophil.

He swabbed inside my nose with a Q-tip, then placed the results under a microscope. "Take a look," Mansmann said. "See all those pink cells? Those are eosinophils." ..When the immune system is working properly, eosinophils swarm certain invading substances, be they parasites or viruses, and work to eliminate them. Sometimes, however, an allergenic protein may prompt the immune system to release eosinophils. Then, it's as if a faucet gets turned on but can't be turned off—eosinophils just keep coming. Eventually they begin to leave the bloodstream and may infiltrate and damage the GI tract, esophagus, mucous membranes, lungs, the fascial system (the layer of connective tissue that surrounds the muscles, blood vessels, and nerves), and the skin—hence, the avalanche of symptoms.

... To experiment with a new GMO food in this country, a developer must first get a permit from the USDA to conduct field trials (literally, trials in open fields), following guidelines largely intended to prevent GMO crops from mixing with conventional ones. In addition, **according to Helscher, biotech firms like Monsanto are required to compile a document that compares the biology of the modified plant to the unmodified one, determining, for example, if there is a "statistically significant difference" in the levels of nutrients such as carbs and fats between the two plants, or, if new proteins are introduced, whether they're included in the database of known allergens.** If nothing goes obviously wrong, the crop is free to go to market. It all sounds fine, until you dig a bit deeper, critics of this process say. For one thing, they question the objectivity of the allergen database because it's compiled at the University of

**Nebraska—Lincoln, whose facilities are funded by the six major biotech companies: Monsanto, Syngenta, Dow, Dupont Pioneer, Bayer, and BASF. Indeed, no GMO proteins are on the list, but that's for lack of "sufficient evidence" to put them there, says Richard Goodman, PhD, a UNL research professor and former Monsanto employee.** He does add, however, that much of the existing data regarding the allergenic potential of GMO foods simply examines them for amino acid sequences similar to those in known allergens—like peanuts or milk—which limits the usefulness of the whole enterprise to people like Mansmann: They think **GMOs may be carrying heretofore undiscovered allergens.** (If you're thinking, Well, **what do the clinical trials with humans show?** The answer is: **They're nonexistent because, the biotech firms say, they are impractical, and, again, GMO foods are basically presumed safe and thus don't undergo near the level of scrutiny as new drugs.**)

...“The scandal is that the USDA does not force the companies to give results of trials that had negative outcomes,” says Harwood Schaffer, PhD, a research assistant professor at the University of Tennessee’s Agricultural Policy Analysis Center. “We’ve seen this in medicine: You only get the data that the [industry] wants you to see.” Schaffer also points out that the biotech firms consider their research proprietary, so there’s no record for the public to inspect:

Australian-born immunologist Simon Hogan, PhD, who, interestingly, was the lead author of one of the few independently funded GMO-food studies. In the early 2000s, Hogan’s interest was piqued when he learned GMO peas were being developed in his native country, so he decided to investigate the new product. “I felt there was a fundamental lack of knowledge on whether GMOs could have an effect” on animals (and possibly people).

He was surprised by the results: Mice given the GMO peas had inflammatory reactions such as “mucus hypersecretion,” “pulmonary eosinophilia” (eosinophils in the lungs), and airway hyperresponsiveness (“the lungs were twitchy,” says Hogan). Most important, the peas may have “perturbed” a tolerance mechanism in the mice, leading to enhanced immunoreactivity.

When I think back to how suffocatingly powerless I felt, how sidelined as a wife, mother, and productive person, I just feel, well, sick. Although Dr. Mansmann told me that most people allergic to GMO corn can end up tolerating small amounts after a couple years of abstinence, each time I've dared cheat, I've awoken the next morning with a frozen left hand, a sore hip, and a facial rash. So for now, at least, the extra work isn't really a choice; it's a way of life, one that reminds me daily that our modern world is full of challenges..'

Article Link- [GMO Foods in America - Avoid Genetically Modified Corn - ELLE](#)

*The more I have researched this topic the more I have seen everyday people search for years to find what is wrong with them only to finally be put on a GM free diet by Doctors who understand that for many, GMO foods are a problem and definitely not 'identical' to non GM foods.*

*Although this is anecdotal, it clearly points to the need for more independent research to find out what is really going on.*

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**In relation the other work coming from around the world, the Europeans Food Safety Authority-** EFSA has issued guidelines for two-year whole food feeding studies to assess the risk of long-term toxicity from GM foods. See the full guidelines here -<http://www.efsa.europa.eu/en/efsajournal/pub/3347.htm> and an article on independent research that has already followed these guidelines here

<http://gmoseralini.org/seralini-validated-by-new-efsa-guidelines-on-long-term-gmo-experiments/>

Part of these guidelines state “EFSA requires a priori power analysis to ensure appropriate sample size, depending on the effect size that is being looked for.” The author of the above article notes that they have..” **never noticed the GM industry doing one of these, resulting in experiments that are virtually guaranteed not to find anything.**” This is highly worrying. For more comment on this, see: <http://www.ijbs.com/v05p0706.htm>

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**I read with disappointment FSANZ response to independent GM researcher Dr. Judy Carmen's recent GMO research findings.** Whether or not the research was conducted to your specifications or not, the results of the research should obviously make alarm bells ring. To write off her findings completely due to the reasons given is extremely concerning to me. In case you haven't seen Dr. Carmen's response please read the following from her website.

<http://gmojudycarman.org/>

**Monsanto (M): Some of the factors reported as different between the test and control groups appear to be in the normal range of observation for both.**

**Answer Summary: Monsanto provide no proof for this statement. Carman et al used adequate sample sizes, appropriate statistical tests and generated reliable findings.**

Detailed Answer: Monsanto do not back up their assertion with any data. That is, they do not provide an officially-endorsed normal range for uterus weights for pigs, nor do they provide an officially-endorsed normal level of stomach inflammation in pigs. In fact, they provide no data at all.

It is important to understand that Monsanto are saying that the level of severe stomach inflammation seen in pigs fed the GM diet is normal in piggeries – i.e. that it's normal for a third of pigs to experience severe stomach inflammation in piggeries. This is a worrying animal welfare allegation about conditions in commercial piggeries and Monsanto needs to provide proof for their allegations.

It is also important to understand that the level of severe stomach inflammation in the GM-fed pigs was many times higher than in the non-GM fed pigs. Overall, GM-fed pigs had 2.6 times the level of stomach inflammation, with female pigs experiencing 2.2 times the rate and male pigs experiencing 4 times the rate. This is not "normal".

**M: The author's speculation about differing uterine weights might be the result of pigs in estrus (heat) which would be complicated by the use of a pen design that had only 1 or 2 pens per treatment.**

**Answer Summary: Randomisation and proximate housing ensured estrus was not a confounding factor.**

**Detailed Answer:** Two to six pens were actually used per dietary group, depending on the age of the pigs, not 1 or 2 as Monsanto says.

The weights of the uterus cannot be due to differing rates of estrus (heat) in the pigs, as pigs were thoroughly randomised before they began their diets. And then all the pens were placed very close to each other, so that pigs could touch snouts between pens. So, if estrus in one pig stimulated estrus in another pig in this study, then all the pigs in both dietary groups should have been in estrus together. Which means that estrus cannot be causing the differences that were seen between the GM-fed and the non-GM-fed groups.

By Monsanto suggesting that the rate of estrus was different between the GM-fed and non-GM-fed pigs, then because of the way the study was conducted, with everything except for the GM aspect of the diet "randomised out" from having an effect on the results, then Monsanto is actually suggesting that the GM diet caused a difference in the rates of estrus in pigs. This is a hypothesis that is both interesting and worrying for health and should be followed-up.

**M: the results are due to poor animal husbandry practices, as shown by the fact that pigs died, even in the control group.**



**Answer Summary:** The pigs in both groups were treated equally, humanely and within commercial piggery standards. Any assumption otherwise would be contesting the standards of the U.S. government and should be directed as a complaint to U.S. legislators.

**Detailed answer:** Pigs were housed under conditions that apply in commercial piggeries in the US. If Monsanto is suggesting that these pigs were subjected to inhumanely poor conditions, then they are also suggesting more widely that pigs in commercial piggeries in the US are subjected to those conditions as well. Pigs in commercial piggeries are housed in groups. They can and do get infectious diseases and there are indeed a number of infectious diseases that tend to occur in US commercial piggeries. Furthermore, pigs fight, bite and harass each other. As a result, some pigs, particularly runts, can, and do, die. Piggery owners **expect** some pigs to die and they factor this into their financial returns. Indeed, if no pigs had died in this study, many US piggery owners would have found the results of the study rather incredible.

The number of pigs that died was essentially the same between the GM-fed and non-GM-fed pigs. All pigs that died underwent autopsies. In all cases, death was found to be due to things such as infectious diseases, i.e. things that were piggery-related. At no time did any pig handler or veterinarian note, or autopsy indicate, that there was anything treatment-related associated with any pig's death, including intestinal or stomach problems. Moreover, the number of deaths were the same between groups, which adds weight to the evidence that there was no treatment-related aspect to these deaths.

All pigs, regardless of dietary group, were fed and treated the same way by experienced pig handlers that were blinded as to the dietary group of the pig so that any differences between the two dietary groups can only reasonably be due to the effect of the GM component of the diet.

<http://gmoevidence.com/location/australia/>

#### **Dr Judy Carman replies to comments that GM crops are safe to eat**

**GM industry comment:** GM crops have a clear record of safety. There have been hundreds of animal feeding studies that show that GM crops are safe to eat.

**Reply:** Most of the papers referred-to like this are usually animal production studies, where diets that were used or outcomes that were measured are not applicable to humans, and hence could not be used to assess effects on human health. These examples have been found in these sorts of studies:

- The effects of eating GM silage when humans do not eat silage. Silage is a type of rotted plant material.
- Diets were altered using ingredients that are not permissible in human diets e.g. sand and ground cardboard.
- Animal production outcomes were measured such as death rates, milk production, feed conversion to various types of carcass weight and even "sticky droppings". These are not measures of human health.
- Animals with completely different physiologies to humans were used as experimental animals. For example, chickens were often used when they are clearly not comparable to humans – they have feathers, fly, lay eggs, do not suckle their young, have nucleated red blood cells, caeca, air sacks instead of lungs, kidneys that do not produce urine, two "stomachs", and swallow grit and pebbles to help grind their food – all of which would be considered highly unusual in a human. Studies on fish are even less comparable. Cows are also not comparable because, while they are at least mammals compared to many other animal models used in these studies, amongst other things, they have several stomachs, chew their cud, and can digest cellulose so that they can thrive on a diet of grass, which would kill a human. Pigs are physiologically closer to humans and can be used in feeding studies designed to test human end points but in practice are rarely used due to their size. That is, they cost more to house and feed than rats.

Other studies cited are often measurements done *in vitro* or on soil or plants. Examples of the latter include comparisons of the composition of a GM crop to a non-GM crop and measurements of the amount of transgenic protein expressed in a GM plant. Furthermore, some of the papers used to support this sort of statement actually show adverse health effects on the animals that have eaten GM crops.

**GM industry comment:** Americans have eaten billions of meals with GM ingredients over at least a decade and there has never been a documented case of anyone getting ill from eating GM crops.

**Reply:** Since GM crops were introduced into the US food supply, millions of Americans have gone to hospital and millions of Americans have died. There has been no investigation into whether any of those hospitalisations or deaths were due, in full or in part, to eating GM crops. So there is simply no evidence to determine if GM crops have caused any adverse effects in people, or not.

- <http://gmojudycarman.org/a-specific-reply-to-mark-lynas/>

### **A specific reply to Mark Lynas**

Prominent pro-GM activist, Mark Lynas has, as expected, attacked the study by Dr Judy Carman and her colleagues for their recent work titled, "A long-term toxicology study on pigs fed a combined genetically modified (GM) soy and GM maize diet." *Criticism Source:* [marklynas.org](http://marklynas.org)

*Author: GMO Judy Carman Website Editors*

**ML: The authors are GM activists/campaigners and their results shouldn't be trusted.**

**Answer Summary: The authors are not GM activists; they are highly credentialed experts.**

**Detailed Answer:** Two authors are Associate Professors in Health and the Environment, School of the Environment, Flinders University in South Australia. Another is a Senior Lecturer at Adelaide University in South Australia. Two are veterinarians, one is a medical doctor, and two are farm experts. The authors have over 60 years of combined experience and expertise in medicine, animal husbandry, animal nutrition, animal health, veterinary science, biochemistry, toxicology, medical research, histology, risk assessment, epidemiology and statistics.

**ML: The paper's acknowledgements are a veritable who's who of anti-biotech activism, including Jeffrey Smith, John Fagan and Arpad Pusztai.**

**Answer Summary: Two of these individuals are scientists with serious qualifications (qualifications Mr. Lynas does not possess). Mr. Smith's acknowledgement derives from his role in fostering the international collaborations that were necessary part of the study's completion.**

**Detailed Answer:** There were 38 people in the acknowledgement section, including an ex government Minister, an ex Chief of Staff to the Govt Minister and an ex member of the Board of Australia's food regulator, as well as numerous scientists with more qualifications than Mr. Lynas has (as author, advisor, and speaker) and numerous farmers who were involved in the research.

Mr. Lynas has picked out three people in that list of 38 and alleged that they are anti-GM activists. This is not the case. In fact two of them are scientists with serious qualifications, qualifications that he doesn't have.

The only anti-GM activist, Jeffrey Smith, is acknowledged simply because he suggested that Howard, who was seeing these effects in pigs and wanted to determine if they were scientifically real, should contact Judy who had the scientific expertise to conduct the study. That simple and singular action resulted in discussions between Howard and Judy

which resulted in this research. This starting point was rightfully acknowledged, but importantly, the research was conducted entirely independently of all three people Mr. Lynas mentions.

**ML: Funding for the research was derived from anti-GM advocates and therefore biases the results.**

**Answer Summary: Funding for the study was actually derived from a current supporter of GM technologies.**

**Detailed answer:** It is clearly stated in the paper that the major funder of IHER's involvement in the study is the Government of Western Australia, and the current government is a supporter of GM crops.

With regard to IHER's previous work in opposing Bt brinjal in India and CSIRO's GM wheat in Australia, IHER conducted a thorough review of the evidence presented and concluded that there were serious safety concerns about GM brinjal and CSIRO's GM wheat. The organization opposed the release of these based on a review of the evidence, not on ideology.

**ML: All the animals were in very poor health. Weaner mortality rates indicate inadequate husbandry standards, and higher rates of abnormalities of the heart and liver in non-GM fed pigs were conveniently ignored.**

**Answer Summary: Mr. Lynas does not appreciate the role of statistics in ascertaining scientific certainty.**

**Detailed answer:** Mr. Lynas is incorrect. These are not the mortality rates for weaners. The rates presented are for the entire lifespan of the animal. Furthermore, animal husbandry was the same for both the GM and non-GM fed groups. This effect has been randomised-out as an effect on the results. Therefore, animal husbandry is not a factor in the difference between GM and non-GM-fed pigs.

There are hundreds of numbers in the paper. Mr. Lynas has "cherry-picked" a few of these numbers that were not statistically significant and tried to allege that they are. Carman et al only discuss statistically significant findings because this is the scientifically credible approach. GM-fed animals had smaller livers, more pneumonia and more abnormal lymph nodes, but the researchers did not make any statements about these findings because they were not statistically significantly different when compared to non-GM fed animals.

**ML: The authors used "statistical fishing" in their interpretation of the results, clearly attempting to skew or exaggerate their findings. What visual evidence is presented is done so to justify this statistical fishing experiment.**

**Summary: The authors executed careful and comprehensive statistical analysis to answer two hypotheses that had been generated by previous observations by the researchers in the U.S. piggeries.**

**Detailed answer:** The authors performed statistical tests on all of the parameters that Mr. Lynas mentions, and none of them were found to be statistically significantly different. These analyses are clearly presented in the paper. Mr. Lynas either did not read the paper well enough or saw the analysis but did not understand them.

The counter argument from supporters of Mr. Lynas suggests that the study was not designed to test and statistically evaluate a sole hypothesis. If the authors had measured just the variables associated with the hypotheses being specifically tested (stomach inflammation and reproductive problems) and nothing else, few statistical tests would have been done and little to no statistical adjustment would have been suggested. The significant results that the authors found around the hypotheses that were tested should not be made invalid simply because the authors took some other measurements.

Furthermore, the level of inflammation in the non-GM fed group was concentrated in the mild to moderate range of inflammation. Feeding GM crops boosted that to severe inflammation, and this was a significant finding. Importantly, inflammation is a graded variable; the more inflammation, the more biologically impactful it can be to the animal. So, you cannot equalize the biological consequence of nil or mild inflammation to severe inflammation. Doing so goes against scientific knowledge on the effects of inflammation.

**ML: This study subjects animals to inhumanely poor conditions.**

**Summary: The pigs in both groups were treated equally, humanely and within commercial piggery standards. Any assumption otherwise would be contesting the standards of the U.S. government and should be directed as a complaint to U.S. legislators.**

Detailed answer: Pigs in commercial piggeries are not like laboratory animals that are raised and housed in specific-pathogen-free environments, sometimes only one animal to a cage. On the contrary, pigs in commercial piggeries are part of an industrialised food chain. Pigs are born in commercial farrowing facilities housing many sows at a time. Once weaned, pigs are housed communally in large pens. The result is a real-world experiment that is closer to the interactive, infectious-disease-transmitting and messy school yard than the more controlled environment of a laboratory animal house. Commercial pigs can and do get infectious diseases and there are indeed a number of infectious diseases that tend to occur in US commercial piggeries. Furthermore, pigs fight, bite and harass each other. As a result, some pigs, particularly runts, can, and do, die. Piggery owners **expect** some pigs to die and they factor this into their financial returns. Indeed, if no pigs had died in this study, many US piggery owners would have found our results rather incredible.

The number of pigs was essentially the same between the GM-fed and non-GM-fed pigs.

All pigs that died underwent autopsies. In all cases, death was found to be due to things such as infectious diseases, i.e. things that were piggery-related. At no time did any pig handler or veterinarian note, or autopsy indicate, that there was anything treatment-related associated with any pig's death, including intestinal or stomach problems. Moreover, the number of deaths were the same between groups, which adds weight to the evidence that there was no treatment-related aspect to these deaths.

All pigs, regardless of dietary group, were fed and treated the same way by experienced pig handlers that were blinded as to the dietary group of the pig so that any differences between the two dietary groups can only reasonably be due to the effect of the GM component of the diet.

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**Another major issue of concern is that of reported bee colony collapses** due to the overuse of pesticides on chemical resistant crops as well as terminator seeds more of which you can read about in this article here:- <http://www.globalresearch.ca/death-of-the-bees-genetically-modified-crops-and-the-decline-of-bee-colonies-in-north-america/25950>

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**There's also plenty of information pointing to the fact that not only do GMO crops not increase yields in the way the manufacturers say they do, they often actually decrease yield.** Again look at the impartial research readily available on the net and discussed within the information included in this submission. [http://www.non-gm-farmers.com/news\\_details.asp?ID=914](http://www.non-gm-farmers.com/news_details.asp?ID=914) For example a study by Fulton and Keyowski found Roundup Ready canola in Canada was associated with lower yields of around 7.5 percent. I have no doubt that similar results would be found with soy. Independent testing should be done to assess this otherwise this supposed benefit turns into a negative and should lead to extreme caution on approving any more GMO's.

**On the topic of contamination of non GM Australian crops** which would potentially cripple non GM farmers – from my research, I understand that Australia's ..... 'Legislation has assumed GM is no different to non-GM and yet there is an unmanageable zero tolerance of GM contamination allowed in non-GM products eg: Trade Practises Act, half of our wheat export volume requires this guarantee etc. ([More](#) .) There is no regard to the market reality of no tolerance. ([More](#)). Zero tolerance is unachievable after GM introduction which is a clear indication that we will lose markets if commercially grown or even with the introduction of large trials.' [http://www.non-gm-farmers.com/news\\_details.asp?ID=664](http://www.non-gm-farmers.com/news_details.asp?ID=664) This is unacceptable. We personally know of an organic farmer in Western Australia whose livelihood was ruined by a GMO crop allowed next to his property due to contamination. Contamination so easily occurs due to the weather variables and cross pollination and cannot be avoided. Farmers who are trying to ensure the biodiversity of our foods should not be penalised by gmo seeds that haven't even been studied properly. This is clearly a risk to the future of un-tampered non-gmo seed and food sovereignty. Further to this topic please see more info on the following link.

**<http://www.scribd.com/doc/134899632/Scientific-Papers-Compiled-March-2013-Coalition-for-a-Gm-Free-India> - ADVERSE IMPACTS OF TRANSGENIC CROPS/FOODS - A COMPILATION OF SCIENTIFIC REFERENCES WITH ABSTRACTS**

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To conclude, given all of the above, all I can reiterate is that alarm bells should well and truly be ringing worldwide on the issue of all GM food which we need to take heed of. These are clearly not 'just' conspiracy theories – the experts obviously know what they are talking about and importantly and not biased in their findings like the companies putting forward these applications are. Please do not allow this GM crop to be allowed in Australia unless exhaustive research conclusively proves it is safe for animals, humans and the environment.

Thanks for your time. I look forward to being kept up to date with how this application goes.

Yours sincerely,

Claire McFee