

Your Name
Your Email
13 November 2019

TO: GMOAppComments@daff.gov.za
[cc: charcybele@gmail.com](mailto:charcybele@gmail.com)

Re: Objection to Application for Commercial Release of MON 87427 X MON 89034 X MIR 162 X NK603 maize by BAYER, supposedly to combat Fall Armyworm on 14 October 2019

Based on evidence of safety risks of the technology of genetic engineering itself mentioned in Annexure 1, as well as the well-documented health risks to people and animals Annexure II of this document, I hereby object to the granting of the above permit

Secondly, in promoting the unsustainable system of industrialised chemical agriculture the SA Government becomes a major contributing factor to climate change, job losses and biodiversity loss, which has recently been established to be threatening the extinction of a million species. A transition towards sustainable agro-ecological approaches, as recommended by the latest [IPBES report \(2019\)](#), is an urgent requirement to protect food security, biodiversity and the fabric of human societies.

We can begin this transition by taking a stance against this foreign-imposed, corporate destruction of our food here in South Africa.

Yours sincerely,

Signed:

Enclosed:

GMO Technology itself is Unsafe – Annexure 1

GMO Foods Pose Major Health Risks – Annexure II

Annexure I : Genetically Modified Foods are Inherently Unsafe

| Assumption | Actual Status | Quote |
|---|---|---|
| Inserted genes will produce a single protein. | Inserted foreign genes might create multiple proteins, with unpredictable consequences. | “The fact that one gene can give rise to multiple proteins . . . destroys the theoretical foundation of a multibillion-dollar industry, the genetic engineering of food crops.” Dr. Barry Commoner, senior scientist at the Center for the Biology of Natural Systems at Queens College |
| The proteins created by inserted genes will act exactly the same way in a new organism. | Foreign proteins may be folded improperly or become attached to other molecules, which could change their properties. Likewise, gene expression may be affected by the genetic disposition of a host organism, or even the environment. | Dr. Peter Wills of Auckland University warns, “an incorrectly folded form of an ordinary cellular protein can under certain circumstances . . . [duplicate itself] and give rise to infectious neurological disease.” Professor David Schubert of The Salk Institute for Biological Studies, says the effect that a particular protein has on a plant or animal “can be modified by the addition of molecules such as phosphate, sulfate, sugars, or lipids.” |
| Inserting foreign genes is precise and non-disruptive. | The process of inserting foreign genes can damage the structure and function of the host’s DNA, switch genes on or off, create never-before-seen genetic sequences, and render the genome unstable. | The BBC’s Tomorrow’s World Magazine says: “Genetic engineering is generally a hit and miss affair. The genes may be inserted the wrong way round or multiple copies may be scattered throughout a plant’s genome. They may be inserted inside other genes—destroying their activity or massively increasing it. More worryingly, a plant’s genetic make-up may become |

unstable. . . . Rogue toxins may be produced or existing ones amplified massively. Such problems may only arise hundreds of generations after the crops are originally modified.”

Foreign genes will not transfer to bacteria in the digestive system. Use of antibiotic resistant genes are therefore safe.

Foreign genes jumped to human gut bacteria in just one meal of a GM soy burger and soy milkshake.

"British scientific researchers have demonstrated for the first time that genetically modified DNA material from crops is finding its way into human gut bacteria, raising potentially serious health questions." The Guardian In 1992, Murray Lumpkin, M.D., then director the FDA's Division of Anti-infective Drug Products, warned: "IT WOULD BE A SERIOUS HEALTH HAZARD TO INTRODUCE A GENE THAT CODES FOR ANTIBIOTIC RESISTANCE INTO THE NORMAL FLORA OF THE GENERAL POPULATION."

The promoter that keeps foreign genes switched on, only influences that one gene.

The promoter may turn on native genes "over long distances" up and down the strand of DNA—even genes on a different chromosome. This can create a flood of proteins with unpredictable consequences. Some scientists theorize that the promoter might even switch on dormant viruses that are deposited along the DNA.

"When inserted into another organism as part of a 'genetic construct,' it [the promoter] may also change the gene expression patterns in the recipient chromosome(s) over long distances up- and downstream from the insertion site." Dr. Michael Hansen, Consumers Union, publishers of Consumer Reports And in their paper, "Cauliflower Mosaic Viral Promoter—A Recipe for Disaster," Drs. Ho, Ryan, and Cummins warn, "Horizontal transfer of the CaMV promoter . . . has the potential to reactivate dormant viruses or [create] new

viruses in all species to which it is transferred.”

The promoter is stable.

Studies indicate that the promoter may create a “hotspot” in the DNA, whereby the whole DNA section, or chromosome, can become unstable. This can cause breaks in the strand or exchanges of genes with other chromosomes.

According to Geneticist Dr. Joe Cummins, a promoter can have “the same impact as a heavy dose of gamma radiation.”

The promoter only works with plant organisms.

Research indicates that the promoter can influence animal genes. Some scientists believe it can transfer to internal organs and accelerate cell growth, possibly leading to cancer.

Dr. Stanley Ewen, one of Scotland’s leading experts in tissue diseases, says, "It is possible GM DNA could affect stomach and colonic lining by causing a growth factor effect with the unproven possibility of hastening cancer formation in those organs."

Nutritional properties are unaffected by genetic modification.

Significant differences in nutritional content between GM crops and their natural counterparts have been observed.

“Roundup Ready beans were significantly lower in protein and the amino acid phenylalanine. More disturbing were [increased] levels of the allergen trypsin inhibitor in toasted Roundup Ready meal. . . . Lectins in Roundup Ready beans almost doubled the levels in controls. What might be the result of consuming foods with high levels of trypsin inhibitor and lectin? Well, maybe slower and lower growth, say scientists.” Medical writer Barbara Keeler, on data that has been omitted from Monsanto’s published study.

Genes and their

Insertion of foreign genes and

University of Georgia’s Dr. Sharad

expression will act in isolation, not impacting other metabolic processes.

their new proteins may create complex, unpredictable interactions, not well understood. Similarly, inserting two or more foreign genes into the same plant may also cause interactions that have not been studied.

Phatak says, "When you insert a foreign gene, you are changing the whole metabolic process. . . Each change is going to have an effect on other pathways. Will any one gene kick off a whole slew of changes? We don't know for sure." Stanford's Dr. Charles Yanofsky says, "Genetic engineering results in the formation of higher than normal concentrations of certain enzymes and products; these could provide the basis for the synthesis of higher levels of toxic substances." Commenting on the genetically modified supplement L-tryptophan produced by Showa Denko, which killed about 100 people and caused 5-10,000 to fall sick, Yanofsky, one of the world's leading authorities on tryptophan biosynthesis, says, "If Showa Denko engineered the bacterium to overproduce tryptophan [which they did], then there are many unknowns that would be associated with its overproduction."

There is no risk from breathing pollen from GM crops

If GM genes can transfer to gut bacteria or internal organs, then inhalation of pollen may cause unpredicted health problems.

"Experts on the Government's Advisory Committee on Novel Foods and Processes have issued a warning about plants being grown in the U.S. and parts of Europe which contain a gene resistant to antibiotics. They are concerned that, if workers breathe in dust as the crops are processed, the resistance could be transferred to bacteria in their throats. Around one in five people are carriers of the meningitis bacteria, even though they are not affected by the

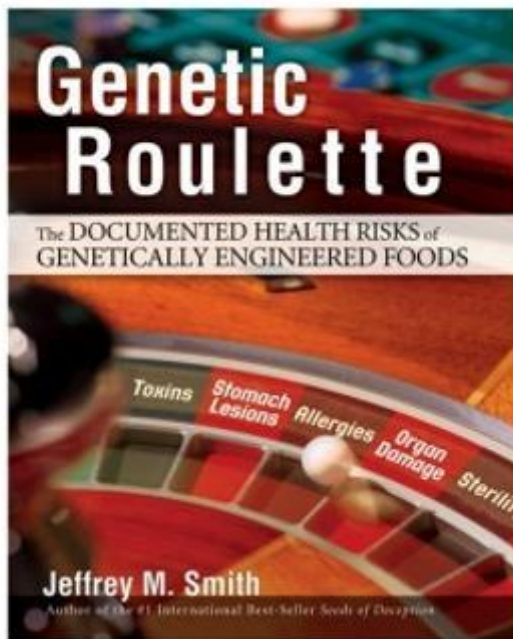
disease. Microbiologist Dr. John Heritage, a member of the committee, has written to American authorities to express his worries. 'It's a huge concern to me,' he said. 'While the risk is small, the consequences of an untreatable, life-threatening infection spreading within the population are enormous.'" Daily Mail (UK)

The chances of GM crops being allergenic are minimal.

After GM soy was introduced into the UK, soy allergies skyrocketed 50%. Current GM corn would not pass tests recommended by international Codex standards for potential allergenicity. It took the FDA 9 months to develop an allergy test for StarLink corn; It was so poorly designed, however, that the EPA's Scientific Advisory Panel rejected its results.

The FDA's 1992 policy states, "At this time, FDA is unaware of any practical method to predict or assess the potential for new proteins in food to induce allergenicity and requests comments on this issue." FDA scientist Dr. Carl Johnson wrote, "Are we asking the crop developer to prove that food from his crop is non-allergenic? This seems like an impossible task." According to FDA microbiologist Dr. Louis Pribyl, "the only definitive test for allergies is human consumption by affected peoples, which can have ethical considerations." According to a 1999 Washington Post article, there is still "no widely accepted way to predict a new food's potential to cause an allergy. The FDA is now five years behind in its promise to develop guidelines for doing so." The same remains true today.

Annexure II: Genetic Roulette: The Documented Health Risks of Genetically Engineered Foods (book)



The following [65 document health risks are all referenced](#) here. For ease of comprehension Section 1 has been broken down hereunder.

**A summary of the 65 Health Risks
Presented in [Genetic Roulette](#)
by Jeffrey Smith**

The Documented Health Risks of Genetically Engineered Foods

Section 1: [Evidence of reactions in animals and humans](#)

Section 2: [Gene insertion disrupts the DNA and can create unpredictable health problems](#)

Section 3: [The protein produced by the inserted gene may create problems](#)

Section 4: [The foreign protein may be different than what is intended](#)

Section 5: [Transfer of genes to gut bacteria, internal organs, or viruses](#)

Section 6: [GM crops may increase environmental toxins & bioaccumulate toxins in the food chain](#)

Section 7: [Other types of GM foods carry risks](#)

Section 8: [Risks are greater for children and newborns](#)

Summary of Section 1 above:

Section 1: Evidence of reactions in animals and humans

1.1 GM potatoes damaged rats

1. Rats were fed potatoes engineered to produce their own insecticide.

2. They developed potentially precancerous cell growth in the digestive tract, inhibited development of their brains, livers and testicles, partial atrophy of the liver, enlarged pancreases and intestines and immune system damage.
3. The cause was not the insecticide, but in all likelihood was the process of genetic engineering.
4. GM foods on the market—which were created with the same process—have not been subject to such an extensive testing protocol.

1.2 Rats fed GM tomatoes got bleeding stomachs, several died

1. Rats were fed the GM FlavrSavr tomato for 28 days.
2. Seven of 20 rats developed stomach lesions (bleeding stomachs); another 7 of 40 died within two weeks and were replaced in the study.
3. The tomato was approved despite unresolved safety questions by FDA scientists.

1.3 Rats fed Bt corn had multiple health problems

1. Rats were fed Monsanto's Mon 863 Bt corn for 90 days.
2. They showed significant changes in their blood cells, livers and kidneys, which might indicate disease.
3. Although experts demanded follow-up, Monsanto used unscientific, contradictory arguments to dismiss concerns.

1.4 Mice fed GM Bt potatoes had intestinal damage

1. Mice were fed either GM potatoes engineered to produce the Bt-toxin or natural potatoes spiked with Bt-toxin.
2. Both diets created abnormal and excessive cell growth in the lower part of their small intestine (ileum).
3. Similar damage to the human small intestine might result in incontinence or flu-like symptoms, and may be precancerous.
4. This study overturns the assumptions that Bt-toxin is destroyed during digestion and is not biologically active in mammals.

1.5 Workers exposed to Bt cotton developed allergies

1. Agricultural laborers in six villages who picked or loaded Bt cotton reported reactions of the skin, eyes and upper respiratory tract.
2. Some laborers required hospitalization.
3. Employees at a cotton gin factory take antihistamines everyday.
4. One doctor treated about 250 cotton laborers

1.6 Sheep died after grazing in Bt cotton fields

1. After the cotton harvest in parts of India, sheep herds grazed continuously on Bt cotton plants.
2. Reports from four villages revealed that about 25% of the sheep died within a week.
3. Post mortem studies suggest a toxic reaction.

1.7 Inhaled Bt corn pollen may have triggered disease in humans

1. In 2003, approximately 100 people living next to a Bt cornfield in the Philippines developed

skin, respiratory, intestinal reactions and other symptoms while the corn was shedding pollen.

2. Blood tests of 39 people showed an antibody response to Bt-toxin, which supports—but does not prove—a link.
3. The symptoms reappeared in 2004 in at least four other villages that planted the same corn variety.
4. Villagers also attribute several animal deaths to the corn.

1.8 Farmers report pigs and cows became sterile from GM corn

1. More than 20 farmers in North America report that pigs fed GM corn varieties had low conception rates, false pregnancies or gave birth to bags of water.
2. Both male and female pigs became sterile.
3. Some farmers also report sterility among cows.

1.9 Twelve cows in Germany died mysteriously when fed Bt corn

1. Twelve dairy cows died on a farm in Hesse Germany, after being fed a diet with significant amounts of a single GM corn variety, Bt 176.
2. Other cows in the herd had to be killed due to some mysterious illness.
3. Syngenta, the producers of Bt 176, compensated the farmer for part of his losses, but did not admit responsibility for the cow deaths.
4. In spite of demands by the farmer and even public protests, no detailed autopsy reports were made available.

1.10 Mice fed Roundup Ready soy had liver cell problems

1. The liver cells of mice fed Roundup Ready soybeans showed significant changes.
2. Irregularly shaped nuclei and nucleoli, an increased number of nuclear pores and other changes, all suggest higher metabolism and altered patterns of gene expression.
3. The changes may be in response to a toxin.
4. Most of the effects disappeared when GM soy was removed from the diet.

1.11 Mice fed Roundup Ready soy had problems with the pancreas

1. Mice fed GM soy showed changes in the synthesis and processing of digestive enzymes.
2. The production of alpha-amylase, a major digestive enzyme, dropped by as much as 77%.
3. This, combined with other pancreatic changes, suggests that GM soy may interfere with digestion and assimilation, as well as alter gene expression.

1.12 Mice fed Roundup Ready soy had unexplained changes in testicular cells

1. The structure and gene expression pattern of testicle cells of mice fed Roundup Ready soybeans changed significantly.
2. The cause for the changes is unknown, but the testicles are sensitive indicators of toxins.
3. Some of the changes might possibly influence adult fertility as well as the health of the offspring.
4. Mouse embryos from GM-fed mothers did show a temporary decrease in gene expression.

1.13 Roundup Ready Soy Changed Cell Metabolism in Rabbit Organs

1. Rabbits fed GM soy for about 40 days showed significant differences in the amounts of certain

enzymes in their kidneys, hearts and livers.

2. A rise in LDH1 levels in all three organs suggests an increase in cellular metabolism.
3. Changes in other enzymes point to other alterations in the organs.

1.14 Most offspring of rats fed Roundup Ready soy died within three weeks

1. Female rats were fed Roundup Ready soy starting before conception and continuing through pregnancy and weaning.
2. Of the offspring, 55.6% died within three weeks compared to 9% from non-GM soy controls.
3. Some pups from GM-fed mothers were significantly smaller and both mothers and pups were more aggressive.

4. In a separate study, after a lab began feeding rats a commercial diet containing GM soy, offspring mortality reached 55.3%.
5. When offspring from GM-fed rats were mated together, they were unable to conceive.

1.15 Soy allergies skyrocketed in the UK, soon after GM soy was introduced

1. In a single year, 1999, soy allergies in the UK jumped from 10% to 15% of the sampled population.
2. GM soy was imported into the country shortly before 1999.
3. Antibody tests verify that some individuals react differently to GM and non-GM soy varieties.
4. GM soy also has an increased concentration of a known allergen

1.16 Rats fed Roundup Ready canola had heavier livers

1. The livers of rats fed GM canola were 12-16% heavier than those fed non-GM varieties.
2. The liver is a chemical factory and primary detoxifier for the body.
3. Heavier livers may indicate liver disease or inflammation.
4. If this were caused by oil-soluble toxins, they may be present in canola oil.

1.17 Twice the number of chickens died when fed Liberty Link corn

1. The death rate for chickens fed Chardon LL GM corn for 42 days was 7%, compared to 3.5% for controls.
2. GM-fed chickens also had more erratic body weight and food intake, and less weight gain overall.
3. The study was designed so that only huge differences would be statistically significant.
4. The results were therefore dismissed without follow-up.

1.18 GM peas generated an allergic-type inflammatory response in mice

1. In advanced tests not normally part of GM crop evaluations, protein produced by GM peas generated a dangerous immune response in mice.

2. That “same” protein, when produced naturally in beans, had no effect.
3. The GM peas produced a subtle, hard-to-detect difference in the way sugar molecules attached to the protein, which likely caused the problem.
4. The response in mice suggested that the GM peas could provoke inflammatory or allergic reactions in humans; commercialization of the peas was therefore cancelled.
5. This type of subtle but dangerous change in the GM protein would rarely, if ever, be detected in the safety assessments typically used to approve GM crops.

1.19 Eyewitness reports: Animals avoid GMOs

1. When given a choice, several animals avoided eating GM food.
2. In farmer-run tests, cows and pigs repeatedly passed up GM corn.
3. Animals that avoided GM food include cows, pigs, geese, squirrels, elk, deer, raccoons, mice and rats.

1.20 A GM food supplement killed about 100 people and caused 5,000-10,000 to fall sick

1. One brand of the supplement L-tryptophan created a deadly US epidemic in the 1980s
2. The company genetically engineered bacteria to produce the supplement more economically.
3. Their product contained many contaminants, five or six of which were suspected as the cause of the disease.
4. Discovering the epidemic required multiple coincidences, suggesting that adverse reactions to GM foods may be hard to identify.