



Research Report

General Assembly 3

The question of reducing the impact on the environment caused by the use of GMOs across all nations

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Introduction

Genetically modified organisms (GMOs) are used for a variety of reasons. GMOs are used in medicines to create pills and vaccines to cure ourselves. GMOs are used in agriculture to enhance nutrition or to increase the resistance of a crop to disease. The way in which organisms are modified varies immensely according to their purpose but also depending on the country they happen to be in. Most North and South American countries and large parts of East Asia allow the growth and development of GMOs. The United States even uses growth hormones to cultivate their meat. Whilst some countries are clearly against and some are in favour, some lie somewhere in between. Whether the use of GMOs is good for our environment remains an unanswered question dependent on culture and opinion.

The Committee

This committee will focus on a number of different issues concerning current environmental, humanitarian and health issues that affect people all over the world. Because of the pressing issue of the environment, MUNA added environment to its "Third Committee", and gave it a slightly different name than the name used at the real UN for its Third Committee (Social, Humanitarian and Cultural). This committee is not an ad-hoc committee and thus necessitates doing proper research beforehand. It is also obligatory to create your own resolutions to submit and find co-submitters for. Furthermore, this committee will attend the plenary session on the Friday afternoon. For more information regarding the rules of procedure, read through the MUNA instruction booklet found on www.munalfrink.nl under downloads.

Keywords

GMO
= Genetically modified organism

ISAAA
= International Service for the Acquisition of Agri-biotech Applications
(A non-profit organisation doing research to help developing nations use GMO crops to feed their poverty-stricken population)

Genetic modification (EU definition)
= organisms in which the genetic material (DNA) has been altered in a way that does not occur naturally by mating and/or recombination.

Biotechnology
= the broad area of biology involving living systems and organisms to develop or make products, or "any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use" (UN Convention on Biological Diversity, Art. 2)

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Overview

The debate on the use of GMOs in food is heavily polarised with one side maintaining that GMOs are toxic and dangerous in the long term. Other people state that by using GMOs the level of pesticide use drops by 8,1%, resulting in cleaner crops and less polluted soil and atmosphere.

Argument in favour: (gmoanswers.com)

'GMOs help farmers to grow more crops using less land. Genetically modified traits such as insect and disease resistance and drought tolerance help to maximize yield by minimizing crop loss to pests, diseases and adverse weather conditions. Between 1996 and 2015, crop biotechnology was responsible for an additional 180.3 million tons of soybeans, 357.7 million tons of corn, 25.2 million tons of cotton lint and 10.6 million tons of canola, without having to bring more land into production. To produce the same amount of crops without GM technology, farmers would have needed to cultivate 48 million additional acres of land.'

Argument against: (Emily Cassidy - ewg.org)

'Seed and chemical companies like Monsanto claimed that genetically engineered crops would be good for the environment by reducing pesticide use and increasing crop yields, but the past 20 years have shown that they do nothing of the sort. Not only have GMO crops not improved yields, they have vastly increased the use of glyphosate, the active ingredient in Monsanto's Roundup herbicide.

That has potentially serious implications for human health. Last year, the World Health Organization classified glyphosate as "probably carcinogenic to humans." The conclusion was based in part on studies showing that farmers exposed to glyphosate had twice the risk of developing a blood cancer called non-Hodgkin lymphoma.'

Although both sides deliver clear arguments, agriculture is not the only point of debate with regards to environmental damage. Also, meat, medicines and plants are being genetically modified. The Beef hormone controversy is significant in the United States as some people claim that certain hormones have negative side effects for humans. This is why the European Union banned these types of meat from imports. Although many diseases can be cured using GMOs, some people are afraid that diseases will mutate to become even stronger and more dangerous. Organisations like the ISAAA strive to ensure the development of GMOs to aid underdeveloped countries with stronger, faster growing, and more nutritious crops, to feed their underfed population.

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Timeline of Events

- 1935 - DNA Discovered
 - Russian scientist Andrei Nikolaevitch Belozersky isolates pure DNA.
- 1975 - Asilomar Conference
 - A group of biologists get together with a few lawyers and doctors to create guidelines for the safe use of genetically engineered DNA.
- 1980 - First GMO Patent Issued
 - A 1980 court case between a genetics engineer at General Electric and the U.S. Patent Office is settled by a 5-to-4 Supreme Court ruling, allowing for the first patent on a living organism. The GMO in question is a bacterium with an appetite for crude oil, ready to gobble up spills.
- 1982 - FDA Approves First GMO
 - Humulin, insulin produced by genetically engineered E. coli bacteria, appears on the market.
- 1994 - GMO Hits Grocery Stores
 - The U.S. Food and Drug Administration approves the Flavr Savr tomato for sale on grocery store shelves. The delayed-ripening tomato has a longer shelf life than conventional tomatoes.
- 1996 - GMO-Resistant Weeds
 - Weeds resistant to glyphosate, the herbicide used with many GMO crops, are detected in Australia. Research shows that the super weeds are seven to 11 times more resistant to glyphosate than the standard susceptible population.
- 1997 - Mandatory Labels
 - The European Union rules in favor of mandatory labelling on all GMO food products, including animal feed.
- 1999 - GMO Food Crops Dominate
 - Over 100 million acres worldwide are planted with genetically engineered seeds. The marketplace begins embracing GMO technology at an alarming rate.
- 2003 - GMO-Resistant Pests
 - In 2003, a Bt-toxin-resistant caterpillar-cum-moth, *Helicoverpa zea*, is found feasting on GMO Bt cotton crops in the southern United States. In less than a decade, the bugs have adapted to the genetically engineered toxin produced by the modified plants.
- 2011 - Bt Toxin in Humans
 - Research in eastern Quebec finds Bt toxins in the blood of pregnant women and shows evidence that the toxin is passed to fetuses.

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- 2012 - Farmer Wins Court Battle
 - French farmer Paul Francois sues Monsanto for chemical poisoning which he claims was caused by its pesticide Lasso, part of the Roundup Ready line of products. Francois wins and sets a new precedent for future cases.
- 2016 - GMO Patent Expires
 - Monsanto's patent on the Roundup Ready line of genetically engineered seeds has ended. In 2009, Monsanto introduced Roundup 2 with a new patent set to make the first-generation seed obsolete.

Resolution

Keep in mind that your resolution should give an image of your country's stance on the issue. Furthermore, it should offer possible solutions to reduce or increase the use of GMOs depending on your nation's opinion. There is a sample resolution on www.munalfrink.nl under Conference > Downloads > Sample Resolution.

Useful links and sources (these sources contain mostly factual information. Also do your own research with regards to your own opinion)

- <https://ag.purdue.edu/GMOs/Pages/WhyGMOs.aspx>
- <https://nutritionstudies.org/gmo-dangers-facts-you-need-to-know/>
- <https://gmo.geneticliteracyproject.org/FAQ/where-are-gmos-grown-and-banned/>
- https://en.wikipedia.org/wiki/Beef_hormone_controversy
- <https://www.isaaa.org/resources/publications/briefs/52/executivesummary/default.asp>
- <https://www2.gov.scot/Topics/farmingrural/Agriculture/Environment/15159/definition>
- <https://gmoanswers.com/gmos-environment>
- <https://www.onegreenplanet.org/animalsandnature/the-environmental-impact-of-gmos/>
- <https://www.ewg.org/agmag/2016/03/are-gmos-bad-environment>
- <http://www.rosebudmag.com/truth-squad/gmo-timeline-a-history-of-genetically-modified-foods>