

**A QUEST TO FULFILL HUNGER OF THE BODY AND MIND POST-2015:**

**Is genetically modified food a solution?** - *A Panel Discussion*

65<sup>th</sup> Annual United Nations DPI/NGO Conference, NYC

Trusteeship Council Chamber

**Sponsored by:** The Light Millennium

**Food Movements for 21<sup>st</sup> Century Challenges:**

**Urban and Rural Alternatives to GMOs**

**by Deborah CARLIN**

Student at Muhlenberg College

August 28, 2014

One of the most virtuous goals established by the GM food movement is that someday, in the near future, world hunger will be eradicated. By manipulating genes, scientists should be able to make crops more nutritious, improve crop yields, and extend growing seasons. In a world with so much poverty, genetic modification seems like the perfect solution. I do not claim to be an expert on the topic, but through my own studies and experiences, I'd like to talk about why GM crops don't seem to be doing their job, and suggest a few alternatives that could have positive results for both people and the environment.

One of the most talked about and controversial issues surrounding GM foods is human health effects. However, while people debate back and forth about whether or not GM crops are safe for humans, we need to keep in mind that they are irrefutably not safe for the environment.

As previously discussed, Roundup Ready seeds promote the development of superweeds that are herbicide resistant, and require the use of stronger and more toxic chemicals. Additionally, over-spraying Roundup has caused a decrease in the presence of milkweed, which is the main food source and habitat for monarch butterfly

larvae. As a result, monarch butterflies have been in decline for at least a decade.<sup>1</sup> Butterflies are vital to our ecosystem because they are pollinators, and without them, biodiversity would dramatically decrease. These are only a few out of the many problems that GM crops cause for the environment.

Many will argue that this environmental damage is worth the risk in order to address world hunger and those living in poverty. However, GM crops have been around for decades, yet food security is still a serious issue. As many predicted, the agroindustry has commercialized GM seeds, and these are very expensive to those who need it most. In some poorer parts of the world, GM seeds are forced onto small farmers. Based on the promise of higher yields, they take on large debts that are difficult to pay off. In other words, GM seeds make many poor farmers even poorer.<sup>2</sup>

Today I want to focus on two questions. First, if the idealistic goal of GM crops is to give more people access to fresh foods, then why not just grow that food locally, using sustainable, urban agriculture practices?

Urban agriculture can encompass so many things, from rooftop farming, to vertical greenhouses, to backyard gardens. There are numerous combinations of growing methods that can be employed, and such practices are slowly becoming popular around the world. In terms of environmental benefits, most facilities recycle their water and waste, avoid using chemical pesticides and herbicides, and follow other organic growing standards. By growing directly in the city, transportation costs are virtually eliminated. Additionally, these farms work to bring communities together as well as provide hundreds of jobs to local residents.

Through my internship with The Horticultural Society of New York, I was able to visit Boswyck Farms, a Queens-based organization that both educates the public about

---

<sup>1</sup> <http://www.geneticliteracyproject.org/2013/03/25/monsanto-v-monarch-butterflies/>

<sup>2</sup> [https://www.youtube.com/watch?v=hCuWs8K9-kI&list=LL6feir9VTqIG5CV3-V29IcQ&feature=mh\\_lolz](https://www.youtube.com/watch?v=hCuWs8K9-kI&list=LL6feir9VTqIG5CV3-V29IcQ&feature=mh_lolz)

hydroponics and builds hydroponic systems for private organizations. Hydroponics is a method of plant growing that does not use soil, and relies on water, nutrient solutions, and alternative growth mediums. Two important benefits of hydroponics is that plants can be grown in indoor growing stations, and virtually all water is recycled within the system. Boswyck Farms works with many organizations in New York City, including local food pantries. By designing and building hydroponic systems within a food pantry, hundreds of patrons are able to have access to inexpensive, fresh vegetables. As a whole, this internship reinforced the fact that in order to appreciate nature, you need to have some sort of connection with it, and urban agriculture provides city-dwellers with the opportunity to make these connections.

Other countries are also becoming pioneers in urban agriculture. In Singapore, the company Skygreens has produced one of the world's first vertical greenhouses, which holds 120 30ft-tall rotating plant systems.<sup>3</sup> In Havana, Cuba, the majority of crops are produced sustainably and locally within standard fields, backyards, balconies, and rooftops.<sup>4</sup>

The benefits of urban agriculture become even clearer when we consider that global population is expected to increase by more than 2.5 billion people in less than 50 years.<sup>5</sup> Most of these people are going to be living in and around cities, so the need for more fresh, urban foods is going to become urgent. Urban farming is something that is active and happening right now, and the more people that invest in it, the more food security we will have for the future.

---

<sup>3</sup> <http://www.skygreens.appsfly.com>

<sup>4</sup> <http://www.yale.edu/agrarianstudies/colloqpapers/01premat.pdf>

<sup>5</sup> <http://www.prb.org/Publications/Datasheets/2013/2013-world-population-data-sheet/infographic.aspx>

The second question I'd like to address is, have GM supporters even considered other alternatives to current rural agricultural practices? When advocates promote GMOs as a solution for increasing global access to food, they ignore how we utilize agricultural land. According to the Food and Agriculture Organization, about 80% of agricultural land in the world is used for the production of livestock; this includes grazing and growing crops for animal feed.<sup>6</sup> The vast majority of corn, grains, and soybeans that are produced are being fed to animals, not to humans. And let's not overlook the fact that most of this animal feed is genetically modified, which allegedly affects the health of the animals.

I personally find it somewhat shocking how heavily dependent some cultures are on meat, when science consistently shows that a healthy diet should focus on fruits and vegetables, not animal products. Even the most basic of ecological principles shows that energy is transferred more and more inefficiently as we increase the number of trophic levels, or food chain positions. We are investing so much money and land on an industry that does not even maximize human health.

Decreasing livestock production would also benefit the environment and obviously, the involved animals. Factory farms use an exorbitant amount of fossil fuels and water, and methane produced by the animals significantly contributes to global warming. Also, I think it is important to take a moment and consider the idea that 80% of agricultural land on earth is dedicated to the slaughter of other species. That alone stands to show how we as humans need to deeply reevaluate not only our use of resources, but the ethical standards by which we live. Our species needs to realize that we are simply just that – a species. In fact, we are one species out of about nine million, yet we traipse around the earth like it is ours for the taking. If we can't even put an end to factory farms, which is basically mass torture and murder of sentient

---

<sup>6</sup> <http://www.fao.org/docrep/012/i0680e/i0680e.pdf>

creatures, then how can we expect citizens to be concerned with over spraying herbicides? We need to start creating the mindset that everything on earth is connected, and that includes humans. No matter how indestructible we think we are, we would not be able to survive without other species.

GMO's, urban agriculture, and producing less meat are by no means the only ideas for improving food security, but I think they raise important questions that the United Nations needs to address. If we have the technology to make crops genetically more nutritious, then why is most of that technology focused on making crops resistant to chemicals? If GM crops were meant to feed those in poverty, then why are the seeds too expensive for poor farmers to purchase? If we are able to produce our own fruits and vegetables in our backyard or on our rooftop, then why aren't we? Why is the majority of our land being used to feed animals, rather than humans? Perhaps the question that encompasses all of this, is how can we save our food from those who have purely profit motives? If we allow the agroindustry to continue abusing their power, then not only will we be no closer to ending world hunger, but we will be jeopardizing the future of all species on earth. Some simple things that we can do through our organizations and governments include promoting urban agriculture, encouraging vegetarian friendly diets, and educating others about the environmental, social, and economic dangers of genetically modified crops. *Thank you.*

**Presented by Deborah CARLIN**

**A QUEST TO FULFILL HUNGER OF THE BODY AND MIND POST-2015:  
Is genetically modified food a solution?** - *A Panel Discussion – Dated: Aug. 28, 2014*  
65<sup>th</sup> Annual United Nations DPI/NGO Conference, NYC  
**Sponsored by:** The Light Millennium – <http://www.lightmillennium.org>