

Orlando Sentinel hosts GMO debate: Who wins on the science?

When a debate gets as contentious as that on GMOs, juxtaposed viewpoints can serve to put many dimensions of an argument in perspective. Last week, the Orlando Sentinel published guest columns by Kevin Folta, associate professor and chairman of the Horticultural Sciences Department at the University of Florida, writing on the pro-GMO side and Dalyn Houser, program associate with Florida Public Interest Research Group, writing on the anti-GMO side.

Houser brought up the standard arguments in anti-GMO campaigns, focusing on safety concerns: use of glyphosate, links to cancer and consumers' right-to-know. She wrote:

According to the U.S. Department of Agriculture, better than 90 percent of the top U.S. crops — such as corn, cotton and soybeans — are genetically engineered. That's a major jump since the turn of the decade. With that, comes the concomitant rise of pesticide and herbicide use in the United States. ...

This escalation poses a potentially harmful impact on our health and local ecosystems due to the fact that most GM crops already are engineered to produce their own pesticides. ...

Some studies suggest the increased use of glyphosate, patented by Monsanto in 1970, may be linked to a number of health problems and diseases, including Parkinson's disease, infertility and cancers. However, longitudinal research on the topic is lacking. ...

The main point here is that we are unaware of the impact of these chemicals on our bodies, which are being increasingly added to our body burden (the aggregate volume of toxic chemicals existing in the human body at a given time) as they entrench and blanket our environment.

Folta addressed the general lack of scientific basis and evidence presented in anti-GMO sentiments:

The hazard of participating in an opinion forum on a scientific topic is that science isn't forged from opinion. Two juxtaposed viewpoints in the Sentinel provide the illusion that they are equally meritorious sides of the same issue. As typical with a scientific topic linked to a public controversy, one perspective is based on significant evidence and the other is emotional, with little scientific base.

Folta emphasized that the safety of GMOs and GMO-containing foods are not debated in scientific conferences or among scientists working in medicine or modern plant biology. "Any debates are a social phenomenon, fueled by activist fears, conspiratorial thinking, emotion, low-quality science, 'natural' marketing gimmicks, and strong feelings about 'Big Ag'," he wrote.

To further illustrate his point, Folta wrote a separate [blog post](#) addressing each of Houser's claims in

detail. “Every single point is an argument from ignorance or a typical trot down non-scientific thinking,” he wrote. “Sadly, there is outright false information that further fuels misunderstanding of this topic. I don’t know if she’s outright lying or just misinformed, but neither adds good science to the public understanding.”

For example, Houser claimed that the use of GM crops also brought about the “concomitant rise of pesticide and herbicide use in the United States.” She provided statistics, without citing their sources, of conventional pesticides and herbicides use, stating that it “more than doubled from 400 million pounds in the mid-1960s to 850 million pounds in 1980.”

Folta claimed that Houser failed to account for increased agrochemical use because of increased farmland and yields in crop production from the mid-1960s to 1980. He added that use of glyphosate, the main herbicide associated with GM crops, also offset the use of other, more toxic and environmentally unfriendly, herbicides. Genetic Literacy Project has also [addressed](#) this and concluded that glyphosate is not used at dangerous levels to humans.

Folta also dealt with Houser’s reference to GM crops “engineered to produce their own pesticides.” Houser alleged that the pesticides (in this case, Bt pesticide) would have a “potentially harmful impact on our health and local ecosystems.” Folta pointed out that Bt, a toxin produced by naturally occurring soil bacteria, targets insects that ruin crops like earworms, but has no effects on non-targets, including humans. Bt pesticide is also used to control pests in organic agriculture.

Houser brought up another commonly cited argument on consumers’ rights to know. Oddly, she supported her point by referencing recent Chinese rejections of American GM corn shipments:

It is the consumer’s right to know what our food contains. Since late 2013, China has rejected shipments of American corn. The reason: China doesn’t endorse genetic modifications to food products.

Folta responded:

The ingredients are on the side of the box or on the back of the can. That is what your food contains. The process it took to get there does not matter. Whether it comes from GM, conventional or organic, sucrose is sucrose, soybean oil is soybean oil. ...

China has been growing GM crops for over a decade. 80% of Brazil’s GM soybeans, and significant corn supplies to go China. 25% of US GM corn goes to China. To say that China “doesn’t endorse genetic modifications to food products” shows her thin knowledge and/or intent to manipulate the reader.

Houser concluded her piece with a call for “accountability in our food” and “proper testing conducted of the food we are consuming, and the damage we are accountable for in the environment.” Folta responded with a call for “personal responsibility to actually research a topic before writing an opinion piece about it.” He concluded his analysis of Houser’s piece:

Here’s someone with limited knowledge of the subject that was compelled to craft a poorly-written and erroneous opinion from fear and ignorance. It is the perfect set up for my associated article that says there is no debate, not two sides.

Additional Resources:

- [“Anti-GMO leaders withdraw from ‘Great Biotech Debate’ — Forum will go on,”](#) Genetic Literacy Project
- [“Hits and misses in Boston Review’s GMO debate,”](#) Grist
- [“How to recognize questionable information about genetically modified organisms,”](#) Biofortified