Robyn O’Brien defends anti-GMO crusader Don Huber: Whistleblower or crank?

Dr. Don Huber—Professor Emeritus of Plant Pathology at Purdue University and one of the leading critics of genetic modification—is recovering from a recent car accident. Reports of the accident prompted an extensive review of his views by Robyn O’Brien, a crusading biotech critic and a sharp response from Kevin Folta, chairman of the Horticultural Sciences Department at the University of Florida.

Huber plays a unique role in the debate over GMOs. Unlike most GMO critics, he has expertise in the field. He has been a plant pathologist for 50 years, with 35 years spent at Purdue. A respected leader in his field for many years, in recent years he has become a controversial figure in the debate around biotech crops for his claims that a mysterious plant pathogen he says he discovered nearly a decade ago is causing serious health problems in livestock fed herbicide resistant GMO corn and soy. He claims that the deadly pathogen could be causing miscarriages in livestock at a rate of 20-50 percent. He also believes that the pathogen is causing serious crop failures and could possibly be behind increases in cancer and autism in humans as well.

Huber made headlines in January 2011 when he wrote to Secretary of Agriculture Tom Vilsack, warning him of this mysterious pathogen. Many scientists were puzzled that he would send this letter without having published his work on the subject or shared his data. The mainstream scientific community has greeted Huber’s claims with extreme skepticism. Anastasia Bodnar, a government scientist and the co-director of the independent website Biology Fortified, has previously dissected his views, as has Kevin Folta.

O’Brien sees Huber as a “whistleblower” in the debate over crop biotechnology. In her piece, Huber’s Brave Crusade Against Biotech, she reflects back on a previous interview that she did with Huber and her history of concern over possible links between pesticides and cancer. After Huber tells her about what he described to Secretary Vilsack in his letter, she asks him about glyphosate, the active ingredient in the chemical paired with herbicide resistant GMO crops known as Roundup.

> … According to Dr. Huber, glyphosate kills weeds by turning off key enzymes that produce defense mechanisms for plants. It essentially targets and destroys their immune systems by chelating, stripping, micronutrients like magnesium, copper and zinc from the plant. As a result, there are fewer of these key micronutrients in the plants and in our food supply.
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> And as Dr. Huber shared, as glyphosate immobilizes critical enzymes responsible for life and resistance in plants, it turns off the natural suppressive mechanisms, leaving these plants more vulnerable to diseases (like Sudden Death Syndrome in soy and Goss’ Wilt in corn), as well as increasing levels of toxins and mycotoxins as seen in the Root Rot and Head Scab being seen in our cereal crops.

He went on to explain, “that with the approval of every new RoundUp Ready crop, there is a two to five times increase in the amount of glyphosate that is applied,” and “that the Canadian tolerable levels for

glyphosate are 58 times lower that those in the U.S. and that European tolerance levels are even lower as a precautionary measure to protect vulnerable subsets of the population, like pregnant women and children. He then shared that the levels of glyphosate now found in the U.S. food supply have been clinically shown to be toxic, citing its effects on human placental, kidney, liver and testicular cells."

In his response, Folta points out the obvious fact that glyphosate does not work by turning off "by turning off key enzymes that produce defense mechanisms for plants" and destroying their immune system through chelation. It works by inhibiting the activity of the enzyme 5-enolpyruvylshikimate-3-phosphate synthase. It essentially blocks a metabolic pathway in the plant from synthesizing necessary amino acids. This something that is both well, and widely understood.

Folta then recounts an encounter he had with Huber last November at a talk Huber gave in Gainesville, Florida. Blown away by the Huber's mangling of the science on one point after another and his talk of a 'mystery pathogen',' Folta took 22 pages of notes. Instead of just challenging Huber's misinformation, he made a generous offer instead.

> … when the presentation ended the organizer from Florida Organic Growers and Consumers recognized me in the audience and made a comment about how I'd disagree with everything Huber said, but could ask a question.
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> I didn't ask a question. I offered my assistance. Huber claims to have cultured this mystery thingy (he used to call it a micro-fungus, then it was a new pathogen, now it is a prion or "biomatrix") so I asked politely if he'd be willing to share it with the broad scientific community. My lab sequences DNA all the time, and we could sequence and assemble the genetic material from his mystery pathogen in a few weeks. I offered to pay for it personally, make all data public, and do everything in an open access format- where he would receive all the credit.
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> For the next 9 minutes and 7 seconds rambled about how the self-replicating organism has no DNA (contrary to what he says in Genetic Roulette's updated version where he says, "The DNA is being sequenced" @~32 min), that his Chinese collaborators are doing it, and hitting me with "why don't you just culture it yourself?" I also asked him about specialized containment for safety and he said that there was none. Bottom line– Busted. After this point, in all of his subsequent presentations, his organism would have no DNA.

O'Brien is convinced that Huber has identified genuine health issues linked to GMOs–concerns the U.S. government is consciously ignoring:

> I then shared that the companies marketing and producing these synthetic chemicals and funding the safety studies of crops engineered to withstand increasing doses of glyphosate, had recently called upon the United States Department of Agriculture to conduct its own safety assessments, acknowledging that their own "research is directed toward their own sales and

> profits, and that federal research is needed to address long-term and overlooked needs."
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> I couldn't leave it at that. So I asked Dr. Huber what he would call for or suggest as "next steps", given his 55 years of experience and extensive research and the potential environmental and human health implications of our chemically intensive agricultural system, he said without hesitating, **"The labeling of these genetically modified crops so that people can know what they are eating."**

For Folta, represents the problem not the solution. Huber: If animals and people are being threatened by a 'mystery pathogen,' he has a responsibility to provide the evidence so this 'deadly threat' can be addressed and eradicated.

> As a participant in the self-correcting discipline of science, I am obligated to both skeptically criticize claims, especially those made without evidence. I should intervene in public education, especially where the public is led astray by twisted science and again, claims without evidence. I should offer to use my capacities to help build evidence on his behalf if his claims do have merit and simply need additional expertise that I possess.
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> O'Brien's characterization paints a false picture of a kind scientist trying to fight the machine. Ironically, Huber is a major cog in a broken machine that spits out bad science and misleading information, paralyzing adoring audiences with fear, and confusing public science discourse in biotechnology. And if any scientist of credibility gets in the way—he will try to get them counseled, disciplined, or excused.
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> It was almost a year ago that I offered to sequence Huber's mysterious self-replicating culturable pathogen that lacks genetic material. One year later, this breakthrough science, that could be wrapped up in weeks, remains a mystery to science, but high gospel for the credulous true believers.
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> My hope is that he is well after his accident, that he recovers fully, and with his recovery finds an awakening to either provide proof of his claim via publication, or come clean and say he was just making it up. Let's put this issue to bed.

Marc Brazeau is a writer and agriculture editor for the Genetic Literacy Project. He blogs at Food and Farm Discussion Lab. Follow Marc on Twitter @realfoodorg.

Additional resources:

- Glyphosate's Impact on Field Crop Production and Disease Development [pdf], Purdue Extension
- Organic farmer deconstructs 'the scientist' vs. 'the activist' in Don Huber's talks, Fanning Mill
- Massive data do not support Don Huber's GMO/glyphosate pathogen claims , Illumination
- On Maui anti-GMO tour, Don Huber refuses to engage scientists on questionable glyphosate claims, Biofortified.org