Herbicide-tolerant Corn Subject of Regulation Debate

Dow wants regulations lifted for its herbicide-tolerant corn, but sustainable-ag organizations say the product threatens agricultural traditions and personal and environmental health.

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Dow Agrosciences wants its herbicide-resistant corn to be deregulated, despite resistance from sustainable-agriculture and environmental groups. The USDA Animal and Plant Health Inspection Service is considering a petition by Dow Agrosciences to deregulate a corn genetically engineered for herbicide tolerance. The corn, which is engineered to resist several grass and broadleaf herbicides, including 2,4-D, would be marketed as part of Dow's Enlist weed-control system.

Dow's petition for deregulation comes on the heels of the company's November 2011 announcement of the successful production of 2,4-D choline in a commercial scale-up setting. According to company spokesperson Garry Hamlin, the new formula has a leg up on earlier iterations of the herbicide, which used amines or esters. While Hamlin says it's just as effective as its precursors, he adds that 2,4-D choline boasts "better characteristics [and is] less prone to drift and less prone to volatize." This is a boon for diversified operations, he explains, because it decreases the likelihood of "particularly susceptible crops," such as grapes and cotton, from coming into contact with the herbicide.

Several sustainable-ag- and environmental-advocacy groups have voiced opposition to the petition, including The Cornucopia Institute, an organization that works toward economic justice for small-scale farmers. The organization's co-director, Will Fantle, says there are several reasons to be concerned about weed-control-product suites, like Enlist. He cites issues surrounding 2,4-D in particular, as well as the broader implications of herbicide use and genetic engineering.

The herbicide 2,4-D has a troubled history due to its use as one-half of Agent Orange, a defoliant used by the U.S. military during the Vietnam War to strip jungle vegetation and wipe out field and food crops. Hamlin says the stigma attached to 2,4-D is unfair, pointing out that the chemical associated with Agent Orange's serious health effects wasn't an intentional ingredient, but rather a contaminant that made its way into barrels of 2,4,5-T, the defoliant's second ingredient.

"[The herbicide] 2,4-D was even left off of 1980s class-action lawsuits related to Agent Orange," he adds.

Hamlin also stresses the significant difference between the potency of a defoliant formulated for military use and an herbicide licensed for agricultural purposes, saying that to conflate 2,4-D and Agent Orange is "a little bit like describing sushi as cold, dead fish."

Nonetheless, a December 30, 2011, action alert on The Cornucopia Institute's website enumerates several reported 2,4-D side effects, including eye and skin irritation among agricultural workers, fetal abnormalities in rats, and the potential for infertility, birth defects, organ toxicity and neurological defects. As the organization prepares its comments for the USDA, Fantle says they'll continue to gather and synthesize research on 2,4-D effects and toxicity.

The Cornucopia Institute is also concerned about the escalation of herbicide use, with Fantle citing what he calls "the herbicide treadmill."

"We've seen the growing resistance of weeds in this country to herbicides in general and glyphosate in particular," he says, referring to the formulation best known by its Monsanto trade name, Roundup.

As a result, he says, agro-chemical companies, such as Dow and Monsanto, are constantly searching for more effective weed-control formulas. 2,4-D fits the bill, Fantle says, adding that it's "considered by many to be a much harsher herbicide [than glyphosate]." Because "weeds evolve and develop resistance to various types of products over time," Fantle says that, eventually, we're likely to see 2,4-D-resistant weeds, as well.

"I don't know if there's a way off the treadmill," he says.

2,4-D and other crops engineered for herbicide resistance don't just present threats to personal and environmental health, Fantle says. They also threaten sustainable-ag practices and entrench farming traditions, such as seed-saving. In addition to chemical drift, Enlist users' neighbors will also have to worry about pollen drift from Dow's corn, Fantle says. In addition

to impacting their crops' genetics, Fantle says the appearance of 2,4-D-resistant crop residues in their fields could open them up to a (mistaken) lawsuit, thanks to technology-licensing practices designed to block the practice of seed-saving. Even when applied correctly, technology-licensing is objectionable, Fantle says. "Seed-saving is a fundamental piece of agriculture's history that these companies are trying to restrict."

Documents pertaining to Dow's petition can be found on the APHIS website. The USDA is accepting public comments on the petition through Feb. 27, 2012, via mail and online.

Fantle says The Cornucopia Institute, along with other organizations, has filed for a 30-day extension to the comment period.

"[APHIS] announced the potential deregulation [in the Federal Register] in the week between Christmas and New Year's, a busy time for many people," he explains, adding that many of the supporting documents weren't available to the public until the second week of January. This extra time could be crucial, Fantle says. "We know that with the [glyphosate-resistant] alfalfa approval last year, hundreds of thousands of people voiced their opposition … To really have our voices heard, it's going to take even more than what was done [in that case]."