

## PolicyPennings by Daryll E. Ray & Harwood D. Schaffer

### The GMO debate

With the Vermont GMO (Genetically Modified Organism) labeling law set to go into effect shortly, a number of companies have begun to voluntarily label all of their products sold anywhere in the US rather than end up having to produce different labels for different states. They are, in effect, treating the Vermont law as the national standard for GMO labeling, although the labeling of some companies goes well beyond the Vermont provisions.

In the midst of all this there is an argument going on about “sound science” and the need to label at all. The argument is that functionally there is no difference between a GMO corn kernel or a GMO soybean seed and the non-GMO product and thus there is no need for the segregation of GMO and non-GMO strains of grains and oilseeds into two different marketing chains and no need for labeling.

Corn is corn, they say, whether or not that kernel contains a GMO trait. For the sound science person that is the end of the discussion, labeling is unnecessary. For the sound science people, the presence of a label indicating that a given product contains a GMO is akin to indicating that the product is dangerous and they object to that.

A second group in this discussion includes people that one might call critical or questioning scientists. They look at early claims that the use of herbicide-tolerant GMOs will not result in the significant development of weeds resistant to the use of the herbicide that is used to kill weeds in a field with that GMO seed. Slowly over the last decade and a half we have seen the spread of resistant weeds so that now we are seeing the development of GMO crops that are resistant to two herbicides to control weeds.

One of the arguments in favor of glyphosate-tolerant GMO seeds was that glyphosate, unlike other herbicides in use at the time, was not persistent in the soil, and had no possibility of being found in ground water. More recent studies have reminded us that glyphosate was not originally developed as an agricultural chemical. It was developed as a chelation agent to remove calcium and other chemicals from the pipes of boilers. A metabolite of glyphosate bound with chemicals like calcium and magnesium, making them water soluble and easy to clear from a boiler system. Some of these recent studies have suggested that glyphosate works in the same way in soils that contain a wide variety of heavy metals, with potential negative consequences for human health.

In claiming that a given product like glyphosate is safe, it is important not to simply declare them safe, but to indicate the conditions they were tested under and what the test hypotheses were. Without that knowledge and the full disclosure of all tests it is not possible for an outside-the-company critical scientist to make a

complete risk assessment. For the science to be truly sound, all tests conducted by the company and those they have funded to do research must be released to the public. That will allow others to identify gaps in the original research that led to the decision to allow each GMO event to be released for general production.

A third group reacts to the development of GMOs by arguing that one shouldn't be messing with nature and arguments about traditional plant breeding notwithstanding, they oppose the creation of GMO crops based on their personal beliefs. No amount of analysis is likely to sway this group from their beliefs.

The fourth group are those who say, “No way, no how never.” Like the third group, no amount of evidence is likely to get them to change their minds. Their attitude is “Don't confuse me with the facts, my mind is already made up.”

As economists we come to the debate from a different perspective. We believe that the economic engine is driven by the presence of consumers. Consumers can purchase any legal product they want and need not justify their preference. For some people two flecks of black pepper on a dish makes it “too hot” while others seek out all the Scovilles they can get. Some people like the soft sweetness of Red Delicious apples while others like that crisp tartness of Pink Lady apples and they are all labeled with a little sticker. The same should be true for GMOs. If the Europeans do not want GMOs, then we should produce and sell them what they want. And the last thing we should do is to sue them in a trade dispute.

In this debate over GMO labeling we should remember that groups of humans are not all consistent in the same way. Looking at GMO crops the risk may be extremely low. For the farmer, there are significant benefits of growing GMOs like better weed control and fewer passes over the field. So, many farmers have a solid reason to support the growing of GMO crops. The GMO seed companies and the chemical companies profit from the sale of these seeds and the tech fees they charge farmers.

But some consumers view glyphosate-resistant GMO seed as providing them with zero benefit. With zero perceived benefit, even an infinitesimal risk may be more than they are willing to take if there is a non-GMO available, even if the non-GMO is higher priced.

Now, as a contrast, consider a group of these consumers who have a serious disease. Suppose there is a medicine that treats the disease, but the medicine is produced by using some of the same genetic techniques used to produce GMO seeds. And further suppose that those genetic-modifying techniques introduce a known risk of severe side effects. In this case, even if the known risk of taking the medicine is orders-of-magnitude greater than consumers' perceived risk of

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GMO crops, many people will accept that risk in order to realize the prospect of an effective medicine.

In the end, the labeling issue is more about perceived risk or benefit than it is about sound science. For the producers of herbicides and GMO seeds the risk is that with labeling their customers will perceive a product labeled as containing GMOs to be dangerous and sales, profits, and ease of production will be at risk. Likewise, for some consumers, even a low risk of problems with eating GMO-containing foods, the fact that they receive no benefit may sway them toward purchasing non-GMO products.

With or without GMO labeling laws, in the long-run consumers tend to get the products they want.

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