

Commentary

A 'Genetically Engineered' Label: Way More Expensive Than You Think

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ABSTRACT

Pseudo-controversy continues to rage over whether foods from plants and animals genetically engineered with the newest molecular techniques should have to be labeled as such. The battles, fought in the media, state legislatures, referendum issues, and in federal courts, have been largely fomented and funded by the organic agriculture and food industries. All but one of the proposals to require labeling in the United States have failed, and that exception is being challenged in a federal court. In spite of these failures and the fact that mandatory labeling fails every test—scientific, economic, legal and common-sense—the true believers soldier on.

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One of the less obvious but more egregious claims made by pro-labelling groups is that the costs of mandatory labeling would be minimal. In the run-up to referendum issues on labeling in the November 2014 elections in Colorado and Oregon, for example, Consumers Union, a product-testing

and advocacy group, released an analysis³ it had commissioned on the costs of mandatory labeling of genetically engineered (GE) foods which claimed that the median cost of labeling would be "\$2.30 per person per year," with a broad range of estimates, "from \$0.32 to \$15.01."

This analysis is an example of getting the wrong answer by making the wrong assumptions. Approaching the labeling question as the FDA did in its study of the impact of nutritional labeling was fundamentally misguided. Costs associated with nutritional labeling requirements do indeed incur a relatively small one-time cost, essentially from the reprinting of packaging to conform to regulators' new requirements; but the labeling of genetically engineered ingredients is far more complicated, fraught with difficulties and expensive. In short, GE ingredient and nutritional labelling are very different because GE crops would need to be kept strictly segregated in order to ensure that labeling regulations are complied with and to avoid or minimize the potential for liability due to cross-contamination (even if the effects are wholly inconsequential).

The expense associated with GE labeling is primarily a function of two cost elements: (1) the productivity-driven difference between the cost of production of GE and non-GE production systems (the GE crop tends to be cheaper than the non-GE alternative); and (2) the costs involved in delivering certified non-GE products

1 <http://www.usatoday.com/story/news/nation/2014/06/12/lawsuit-challenges-vermonts-gmo-labeling-law/10402301/>

2 <http://www.forbes.com/sites/henrymiller/2013/10/09/mandatory-labeling-of-genetically-engineered-foods-deserves-a-warning-label-of-its-own/>

3 https://consumersunion.org/wp-content/uploads/2014/09/GMO_labeling_cost_findings_Exe_Summ.pdf

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to the market (which includes the nominal cost of changing the labels on both products that contain GE ingredients as well as on those that do not).

Those two primary cost elements are in turn affected by several factors, many of which are related to supply and demand:

- *the cost of production/supply differential* is driven by the impact of the technology, which is a function of factors such as pest, weed, or drought pressure—if the GE trait is pest-resistance, herbicide-tolerance or drought-tolerance, respectively; the level of effectiveness of conventional pest/weed control or drought alleviation strategies compared to the GE alternative; the costs of inputs (herbicides, insecticides, fuel, seed) for production; and the availability (supply) of GE versus non-GE products. Evidence from 18 years of widespread cultivation of GE crops around the world shows that GE crops are more productive and cheaper to produce than non-GE alternatives.⁴
- *the costs of delivering certified non-GE products* to users who wish to avoid GE ingredients depend on factors such as the specifications set by food manufacturers and retailers—for example, whether they want certified supplies to contain less GE than, say, 1% or 0.1%. This is crucial because the tighter (lower) the specification, the higher the cost.
- *the availability of certified non-GE products* (which can vary on both an annual and seasonal basis) and the level of aggregate demand for such products.
- the extent to which the avoidance of GE ingredients is applied to highly processed “derived” products, food processing aids and animal products. Related issues include, for example, whether material related to the process of genetic modification can be detected in the final product (it is unlikely in soybean oil or sugar from sugarbeets, for example); meat, milk and eggs, where the issue is whether animals have been raised on non-GE feed, or to products derived from and using processing aids obtained from GE derived micro-organisms (e.g., recombinant DNA-derived chymosin in cheese production).

4 <http://dx.doi.org/10.4161/gmcr.28098>

If a GE ingredient-avoidance policy is extended to these types of products—typically where the GE content typically is not detectable, this will add further costs, mainly because strict raw material traceability and supply chain auditing systems will be required to ensure product (non-GE) authenticity.

The evolution of markets in places like the EU where GE ingredient labelling has been mandatory for many years shows that—contrary to the stated intentions of labeling initiatives (viz., to offer greater choice)—consumers are the principal losers, with less choice and higher prices in the short term, and less innovation in the long-term.

Contrary to some inexpert, simplistic and flawed analyses, mandatory labeling of GE products is a complex and potentially costly undertaking. And in the end, it’s neither necessary nor advantageous to consumers.

Evidence from markets where GE ingredient labeling has been required suggests that most food manufacturers and retailers will initiate GE-ingredient avoidance policies because they are typically concerned about threats to their brand or name, a perceived risk of bad PR fomented by anti-GE lobby groups (manifested by demonstrations against products labeled as containing GE ingredients, social media campaigns, etc.), and can be easily influenced by a small number of “customers” demanding they stock certified non-GE products.

Consider, for example, that food production behemoths like General Mills and Post Foods were stampeded by activists⁵ into reformulating their iconic Cheerios and Grape Nuts cereals, respectively, to be non-GE, and then were confounded by the Law of Unintended Consequences⁶—namely, needing to eliminate certain added vitamins from their products because they couldn’t obtain these from sources certified to be non-GE. This is an example of how a manufacturer trying to meet a perceived consumer demand (i.e., for a certified non-GE product) ends up supplying both a more expensive and inferior product—inferior in having reduced nutrients (vitamins). This situation has been called a “regrettable substitution.”⁷

If consumers are offered a genuine choice of certified non-GE products alongside essentially the same products containing GE ingredients, most will likely

5 <http://www.wsj.com/articles/SB10001424052702304049704579320311512770326>

6 <http://www.npr.org/blogs/thesalt/2014/12/05/368248812/why-did-vitamins-disappear-from-non-gmo-breakfast-cereal>

7 <http://www.tandfonline.com/doi/full/10.1080/13698575.2014.969687#tabModule>

buy the less expensive, GE one because the issue of GE ingredients in food is not important (or at least, not as important as price) to a majority of consumers. A minority (likely small) will buy the more expensive, certified non-GE product.

However, the marketplace rarely operates so straightforwardly. Food manufacturers don't want to perform separate product runs and segregate processing and packing, because this adds cost. And at the retail level, because shelf space in supermarkets is limited, managers don't want shelves filled with three choices of virtually identical products—viz., conventional, containing GE; certified non-GE; and organic. This means that, as has happened in the EU, many U.S. food manufacturers would likely adopt a policy of GE avoidance, insisting that all supplies are certified non-GE, or else switch to crop ingredients where GE technology is not currently available, such as from soybean oil to sunflower oil.

In this way, given the current milieu, mandatory labeling gives rise not to more consumer choice in the marketplace, but to *less*, with consumers often having access only to either certified non-GE or organic products—both of which are more expensive than the unavailable GE alternative.

This scenario plays into the hands of the organic sector because it makes the now “conventional” (i.e., certified non-GE) alternative more expensive, narrowing the price differential with organic and reducing the availability of the cheapest alternative (i.e., GE-containing products). The organic sector thereby hopes to attract consumers who switch to organic because there is less of a price differential between the organic product and the GE-free “conventional” one.

The promotion of mandatory GE food ingredient labeling fits very well with the underlying marketing strategy of the organic sector. As exposed by Academics Review⁸, a science-oriented nonprofit organization of academic experts, “consumers have spent hundreds of billion dollars purchasing premium-priced organic food products based on false or misleading perceptions about

comparative product food safety, nutrition and health attributes,” and that this is due to “a widespread organic and natural products industry pattern of research-informed and intentionally-deceptive marketing and paid advocacy.”

Mandatory labeling of GE foods is a subtle but integral part of this “black marketing” campaign, because by increasing fear, suspicion and doubt among consumers, it is likely to result in more of them pressuring retailers and food manufacturers for what they perceive is more “choice” in the form of greater availability of certified non-GE products.

If the food industry and retailers comply with such demands, the constraints on supply chains, processing costs and shelf space could result in:

- the stocking of organic as the alternative to GE—thus increasing organic sales, if the retailer did not previously sell an organic alternative;
- food manufacturers shifting to organic ingredients, because they should, by definition, be GE-free, eliminating the need to establish a whole new supply chain system to provide a certified non-GE alternative;
- using only non-GE-certified supplies of ingredients and products (instead of GE-derived ones), which increases the cost of what would be the only alternative to organic—and which would have the effect of making organic more attractive to some consumers because of the lower price differential;
- possible legal liability for inadvertent (and inconsequential) errors in labeling;
- a financial bonanza for companies that provide GE testing in the supply chain.

8 http://academicsreview.org/wp-content/uploads/2014/04/AR_Organic-Marketing-Report_Print.pdf