The Dirty Truth About 'Organic' -- It's Marketing Over Substance

By Henry Miller — September 24, 2015

Passionate advocates of organic farming and foods resemble members of a religious cult, one founded on a back to Nature mentality. They are not so fundamentalist, however, that they do not make concessions to reality. For example, organic standards arbitrarily define which pesticides are acceptable, but allow deviations if based on need. Synthetic chemical pesticides are generally prohibited, although there is a lengthy list of exceptions in the Organic Foods Production Act, while most natural ones are permitted (and the application of pathogen-laden animal excreta as fertilizer is allowed). The decisions are made in a murky process that combines agronomy, lobbying, and fundamentalism.

The permitted organic pesticides can be toxic. As evolutionary biologist Christie Wilcox explained in a 2012 Scientific American article: Organic pesticides pose the same health risks as non-organic ones. No matter what anyone tells you, organic pesticides don’t just disappear.

Ironically, the designation organic is itself a synthetic construct of activists and bureaucrats that makes little sense. That brings us to another anomaly: Organic agriculture is based on agreed, allowed sets of principles and techniques, but it has little to do with the ultimate quality or composition of the final products. For example, if prohibited chemical pesticides or forbidden pollen from genetically engineered plants wafts onto and contaminates an organic field, guess what? The farmer gets a mulligan: He does not lose his organic certification.
Are organic foods healthier? They have never been shown to have health (or, for that matter, environmental) benefits; some studies have shown higher levels of certain anti-oxidants, but the significance of that, if any, is unknown. It may even be undesirable; recent medical research has shown that the administration of anti-oxidants blunts the strength-enhancing effects of exercise. In any case, the finding may be a statistical anomaly, because the science of statistics tell us that if you measure a large number of parameters in, say, two plants or other organisms that are identical (or even if you perform blood tests repeatedly on the same individual), purely by chance some differences will appear to be present if we define a statistically significant difference the way that scientists commonly do.

Moreover, a study published in 2012 in the *Annals of Internal Medicine* by researchers at Stanford University s Center for Health Policy aggregated and analyzed data from 237 studies to determine whether organic foods are safer or healthier than non-organic foods. They concluded that fruits and vegetables that met the criteria for organic were on average no more nutritious than their far cheaper conventional counterparts, nor were those foods less likely to be contaminated by pathogenic bacteria like *E. coli* or *Salmonella*.

And speaking of contamination: Organic foods are highly susceptible to it. According to Bruce Chassy, professor of food science at the University of Illinois, organic foods are recalled 4 to 8 times more frequently than their conventional counterparts. This is hardly surprising. Aside from the presence of pathogenic bacteria, organic grains are particularly susceptible to toxins from fungi. In 2003, the UK Food Safety Agency tested six organic corn meal products and 20 conventional (non-organic) corn meal products for contamination with the toxin fumonisin. All six organic corn meals had elevated levels from nine to 40 times more than the recommended levels for human health and they were voluntarily withdrawn from grocery stores. By contrast, the 20 conventional (i.e., non-organic) products averaged about a quarter of the recommended maximum levels.

Advocates of organic agriculture have claimed that its yields are equal or even superior to those of conventional agriculture. A frequently cited example is the Rodale Institute s 30-year side-by-side trial comparing yields per acre of organic versus conventional practices. Rodale contends that organic and conventional plots produced equal yields, but at the 20-year point of the Rodale study, researcher Alex Avery used Rodale s own data to impeach its conclusions. (Rodale s motto, by the way, is, Organic pioneers since 1947.) His analysis concluded that conventional beat organic handily in total system yields (by 30%), nitrogen efficiency (60%), and labor (35%).

And as Ramez Naam, a futurist and fellow of the Institute for Ethics and Emerging Technologies, pointed out, larger-scale, real-word data conflict with Rodale s claims. In 2008, as part of its Census of Agriculture, the USDA conducted the Organic Production Survey, the largest ever study of organic farming yields. The study surveyed all of the 14,450 organic farms in the United States, covering a combined 4.1 million acres.

By covering the overwhelming majority of organic production in the US, the survey gave the first clear view of how organic farming compares on a large scale to conventional farming. And one of the things it found is that organic farms in the US have lower yields than conventional farms. Organic corn has around 70% of the yield of conventional corn. Organic rice has 59% of the yield
of conventional rice. Organic spring wheat has 47% of the yield of conventional spring wheat. Organic cabbage has 43% of the yield of conventional cabbage.

An often-cited meta-analysis published in the prestigious journal *Nature* in 2012 confirmed that overall, organic yields are typically lower than conventional yields, and that under circumstances when the conventional and organic systems are most comparable, organic systems yields are 34% lower.

Among the greatest challenges to organic food production is the unrelenting progress of genetic engineering, the products of which are forbidden to organic farmers. For example, genetically engineered, drought-resistant crops have begun to emerge from the development pipeline. And recently, USDA and FDA approved genetically engineered potato varieties called Innate by their developer, the J.R. Simplot Company that are bruise-resistant and contain 50-70% less asparagine, a chemical that is converted to acrylamide, a probable carcinogen, when heated to high temperatures. And Simplot is performing advanced field testing of second-generation Innate potatoes that will contain an additional trait: resistance to a destructive fungus called late blight, which caused the Irish potato famine of the mid-nineteenth century and is still with us.

Developments such as these, along with the use of highly effective, low toxicity pesticides, are the reasons why upwards of 90% of corn, cotton, soybeans and sugar beets, most papayas (77%), and much of the alfalfa (30%) in the United States are genetically engineered varieties. And it's why genetically engineered crops were grown in 2013 by 18 million farmers in 27 countries, and why there is an extremely high "repeat index," the percentage of farmers who are repeat customers for genetically engineered seeds.

Farmers are not stupid; if organic agriculture were easier or more reliable or improved their bottom line, they'd be flocking to it. They're not.

Researchers at the University of Göttingen in November published a comprehensive analysis of studies that have assessed the impact of genetically engineered crops. Echoing another study published last year, it found that the agronomic and economic benefits, not only in the United States but in the developing world, have been significant: On average, [genetic engineering] technology adoption has reduced chemical pesticide use by 37%, increased crop yields by 22%, and increased farmer profits by 68%.

Those unequivocal benefits, which have been demonstrated again and again, are the real motivation for the relentless opposition to modern agricultural practices the fear in the organic industry that the current gap between organic and conventional agriculture will become a chasm, as technologies and products that are unavailable to organic farmers become ever more efficient and productive. Genetic engineering and new chemicals such as neonicotinoid pesticides which are much less toxic to non-target species and to the human beings who apply them than the chemicals they replaced are leading the charge. And synthetic biology will open up even more new vistas.

What, then, is the purpose of USDA-mandated organic standards and certification? Let me be clear about one thing, Secretary of Agriculture Dan Glickman said when organic certification was being considered: The organic label is a marketing tool. It is not a statement about food safety. Nor
is organic a value judgment about nutrition or quality.

But that marketing tool has been grossly abused. Organic agriculture’s dirty little secret is that it is kept afloat only by massive subsidies and nurtured by a whole panoply of USDA programs, by misleading advertising, and by black marketing that dishonestly disparages the competition.

Academics Review, a reliable, science-oriented nonprofit organization of academic experts, performed an extensive review of hundreds of published academic, industry, and government research reports concerned with consumers views of organic products. It also looked at more than 1,500 news reports, marketing materials, advocacy propaganda, speeches, etc., generated between 1988 and 2014 about organic foods. Their analysis found that 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.

It is hardly news that some industries systematically lie and cheat to further their interests who can forget the decades of mendacity from the tobacco industry but the organic industry’s nefarious actions are actively aided, abetted, and supported by the U.S. Department of Agriculture’s Organic Seal and the National Organic Standards Program (NOSP), in clear violation of the NOSP’s mission. Thus, American taxpayers are funding propaganda about organic products that misleads consumers with fraudulent health, safety and quality claims and fools them into supporting production methods that are an affront to the environment.

Here’s a tough question for the organic movement’s advocates, who have funded and spearheaded wrong-headed and futile state-by-state efforts to require labeling of genetically engineered foods, claiming a right to know what is in our food and how it’s made: Will they demand that potatoes including those that are organically grown that lack Innate’s benefits be labeled to inform consumers that these potatoes are highly subject to bruising, and when cooked, may contain significant amounts of acrylamide, a probable carcinogen? Unlike the genetically engineered label, a required label that informs consumers about lower levels of a carcinogen (and down the road, of naturally-occurring potato toxins solanine and chaconine) would both provide material information and be consistent with federal law.

The advocates of organic agriculture are reminiscent of the buggy manufacturers of a century ago, trying desperately to stay alive by trashing the horseless carriage. But like the Luddites of old, the organic lobby is on the wrong side of history.

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