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Organic Food: Agricultural Panacea or Elitist, Luddite Farming Practice?

BY SCOTT M. ANDES | APRIL 30, 2010

On Tuesday the USDA ruled that two additives in baby food did not meet the guidelines for the agency's Organic Certification. For the last three years officials at the Department of Agriculture have internally debated whether or not omega-3 fatty acid DHA and omega-6 fatty acid ARA are suitable for the organic label. Organic activists, while not contesting the safety of the ingredients, claim because the fatty acids are derived synthetically they should not be considered organic. Organic food advocates saw the decision as an unequivocal victory for the purity of organic food, as Charlotte Vallaeys, a food policy analyst with the Cornucopia Institute, an organics advocacy group, put it, "this move will give consumers the assurance that the USDA is taking organics seriously."[1] And indeed it looks as if the agency is, but are there costs with the redefinition? The two ingredients, which are used in over 90 percent of organic baby food, were originally adopted by baby formula producers because they more closely mimic breast milk and have been shown to promote cognition and eyesight in babies. Moreover, currently the alternative for the synthetic additives are fish-oil-derived fatty acids which many manufactures consider to be prohibitively costly. So the likely outcome, at least in the near term, is baby formula producers will either produce a product without known health benefits for infants (with few consumers recognizing the problem), or reap the growing financial rewards for the coveted organic green label while having to charge more for the product.

While the ruling is important in its own right the situation brings up a more fundamental question: is the growing demand of American and European consumers for organic foods a good thing? Is 'simpler' food actually a preferable form of farming? Or is the green road to organic farming paved with all the right intentions but leading to a future of less efficient, more expensive food?

The value of discussing such questions seems readily apparent. Surely there are few topics of more relevance than how we provide nourishment for the over 6 billion global inhabitants. Yet organic foods have become a form of dogma for many activists, consumers and policy makers. Indeed simply even questioning the tenants of organic farming—such as the costs-benefit analysis of pesticides, the yields of genetically modified crops, or more simply the role of technology in agriculture—risks having one be demonized as anti-environment, pro-corporate agriculture, and generally socially inept. Indeed the halo around the organic food movement has become so pronounced that the White House has made sure the public knows Mrs. Obama's garden yields only organic veggies.[2]

It's not hard to see why organic foods have become so popular. The developed world has always had a romanticized view of pre-industrial agrarian life. Small family farmers toiling on their land in the absence of big, dirty machines to produce locally grown, fresh foods seems to invoke images of a more simple, charming

lifestyle. Many Americans even believe organic foods to be better for them than non-organic food. According to a 2007 Harris poll 75 percent of Americans believe organic foods are healthier, regardless of the fact according to a study by the Mayo Clinic, "no conclusive evidence shows that organic food is more nutritious than is conventionally grown food."[3] Yet given the fact that the number of undernourished people on the planet has grown since 2006 by 15 percent to over 1 billion people and the number of "food insecure" people (those consuming less than 2,100 calories a day) in Africa alone is expected to increase by 30 percent in the next decade; pleasant narratives aside, food policy deserves to be discussed in a more rigorous manner.

The most worrying element of the organic movement is how rigidly defined the concept is. For USDA organic certification crops must have zero chemicals specifically without synthetic nitrogen fertilizers or pesticides. Such a catchall definition virtually eliminates any possibility for innovation in organic food science regardless of the potential benefits to farmers and consumers. Yet many proponents of organic farming argue simply because they oppose using science to alter the biology of crops does not mean there is no innovation in organic farming . As Anna Lappe states in her article in April 2010's *Foreign Policy* magazine, "modern organic practices are defined by more than just the absence of synthetic chemicals, its knowledge-intense farming. Organic farmers improve output, less by applying purchased products and more by tapping a sophisticated understanding of biological systems."[4] But Lappe never explains why the use of technology and the use of "knowledge intensive" farming techniques need be mutually exclusive. Why do farmers in the developing world need to pick between "a sophisticated understanding of biological systems" and crop innovation that can allow them to produce more food with lower costs? The underlying notion that farmers have to choose between increasing labor productivity through education and increasing capital intensity through scientific farming is counter intuitive to the way in which most industries function. Indeed there are multiple economic studies that find adding technology to the production process increases the returns of a skilled workforce and thus promotes worker education.[5] The responsibility of the developed world is not to help developing world farmers find the most efficient way to produce organically, but to simply produce the most sustainable, affordable, and competitive crops possible.

Secondly, by ruling out the use of anything "synthetic" the organic movement may hinder the ability to reach their own goals. For example, reducing the need for pesticides—a long held and worthwhile goal—may be possible with newly genetically modified crops that are more resilient so pesticides can be applied only once, reducing the cost to farmers and agriculture waste runoff. According to a study by the University of Reading if 50 percent of maize, sugar, and cotton grown in the EU were genetically modified varieties the need for pesticides would decline by 14.5 million kg, save 20.5 million liters of diesel and reduce 73,000 tons of carbon dioxide released in the atmosphere per year.[6] Furthermore, advances in tractor technology such as GPS systems, auto steering, and infrared sensors make pesticide use far more efficient and less environmentally dangerous today than in the past. The question for global food production should not be whether or not to produce foods organically but at what point do the added benefits of new technology to crop yields reduce the supposed costs of non-organic farming to an acceptable level? By *a priori* neglecting any technology that makes food any different than it was a hundred years ago unnecessarily hamstrings innovation and hurts consumers and farmers. As Robert Paarlberg, Harvard professor and member of the Agriculture and Natural Resources department at the National Academies, puts it, "If we are going to get serious about solving global hunger, we need to de-romanticize our view of preindustrial food and farming. And that means learning to appreciate modern, scientific-intense, and highly capitalized agricultural systems."[7]

Some less purist organic proponents argue that while the increased crop productivity from conventional farming is warranted in the developing world, here in the United States we should accept higher food costs on behalf of the environmental benefits of organic farming. Yet there are three reasons why the logic behind this argument is flawed. First, the data on the environmental impact of organic farming is mixed because not all organic foods can be produced in the same fashion as non-organic foods. For example, while organic milk requires less energy inputs and zero pesticides because the production process requires roughly 80 percent more land, carbon emissions are higher for organic milk, equaling 1.06kg per liter for conventional milk versus 1.23kg for organic milk.[8] Similarly, because organic chickens require longer growing time they can produce nearly double the amount of waste byproducts and consume 25 percent more energy than conven-

tional chickens. Even some vegetables are less environmentally sustainable when grown organically. Vine tomatoes, for example, require 10 times the amount of land as conventional tomatoes and twice the energy. Most U.S. consumers are shielded from these added environmental costs because of the small size of the organic foods industry in the United States. Currently less than one percent of our food supply is produced organically; according to Paarlberg if the rest of our farms produced organically the U.S. cattle population would need to grow fivefold to produce enough manure to be used as organic fertilizer.[9] Doing so would inevitably require deforestation on behalf of expanding farmland—not to mention a misallocation of resources to farmland and away from higher value-added uses of U.S. real estate. Secondly, shifting food production to locally grown, organic farms and away from conventional farms where ever in the world it is most efficient to grow crops, reduces market share for developing world farmers whom likely have a comparative advantage in agriculture, which increases poverty, decreases food supplies and raises the cost of food around the world. Finally, we need to accept organic foods for what they are: a luxury item that some with the means to do so choose to consume, just as some Americans choose to buy Gucci handbags and Lexus automobiles. If they want to consume them, fine. But for many Americans struggling to make ends meet, spending more on organic foods means spending less on other necessities of life.

The growing demand for organic foods in the United States and Europe reflects a clear desire to eat more responsibly, which is commendable. Yet there is a global responsibility to find innovative ways to produce food and activists, consumers and policy makers should embrace the role of science and technology in agriculture, as is done in virtually all other areas of our lives.

ENDNOTES

1. Kimberly Kindy, "Obama administration bans two additives used in organic baby foods," *The Washington Post*, April 28, 2010, http://www.washingtonpost.com/wp-dyn/content/article/2010/04/27/AR2010042704500.html.

2. Christopher Beam, "Organic Panic: Michelle Obama's Garden and Its Discontents," *Slate*, June 4, 2009, http://www.slate.com/id/2219772/pagenum/all/#p2.

3. Nutrition and healthy eating, "Organic food: Buy or bypass?" *The Mayo Clinic*, http://www.mayoclinic.com/health/organic-food/NU00255/NSECTIONGROUP=2.

4. Anna Lappe, "Don't Panic, Go Organic," *Foreign Policy,* April 2010, http://www.foreignpolicy.com/articles/2010/04/29/dont_panic_go_organic?print=yes&hidecomments=yes&page=full.

5. For example, Lex Borghans and Bas ter Weel, "What Happens When Agent *T* Gets a Computer? The Labor Market Impact of Cost Efficient Computer Adoption," *IZA DP No. 792*, (2003).

6. R.H. Phipps and J.R. Park, "Environmental Benefits of Genetically Modified Crops: Global and European Perspectives on Their Ability to Reduce Pesticide Use," *Journal of Animal and Feed Sciences,* 11 (2002).

7. Robert Paarlberg, "Attention Whole Foods Shoppers," *Foreign Policy,* May/June 2010, http://www.foreignpolicy.com/articles/2010/04/26/attention_whole_foods_shoppers.

8. Cahal Milmo, "Organic farming 'no better for the environment,'" *The Independent*, February 19, 2007, http://www.independent.co.uk/environment/green-living/organic-farming-no-better-for-the-environment-436949.html.

9. Ibid.