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WR 122

Essay #1

**Myths of Organic Produce**

Imagine it was possible to help save the environment, while at the same time improving your health by simply consuming organically grown produce, as opposed to the conventional farming methods. Sounds great… but many of these myths about organic produce fall just short of the true. In the last decade, organic produce has begun a seemingly unstoppable rise in popularity primarily due to its claims to improving health and bettering the environment but also for fulfilling the human psyche’s need to feel better than others or to just fit in.

Chances are the majority of the population has, at one point in, consumed organic produce and/or products made from a combination of organically farmed ingredients. As organic produce sales have skyrocketed from $3.6 billion dollars in 1997, to over $31.4 billion dollars last year in the United States alone, it is difficult to avoid their presence (CBS News, 2012). For years everyone has been told, whether by media influence or others, that organic produce is more nutritious, does not contain pesticides or chemicals, is better for the environment and so forth. Advertising perpetuating these ideals can be found everywhere, whether in magazines, newspapers, commercials, the internet or even the news.

I have personally eaten organic produce; not to mention, I have researched this topic ever since it first aroused my interest. I found myself with a nagging curiosity on how the same fruits and vegetables I was raised consuming and my parents had consumed since they were born are now considered inferior in nutrition and unsafe due to pesticide residues.

In order to make an informed decision on whether to purchase organic or conventional produce, consumers need to evaluate a few of the most common reasons given for “going green.” According to a 2010, Nielsen survey those reasons would be eating organic foods are healthier, avoiding pesticides and other toxins, and organic farming is better for the environment (Weisse, 2012). The results of my analysis will be on these three assumptions.

A recent study, which was published in the *Annals of Internal Medicine*, conducted a comprehensive review of prior research that pooled the findings from 223 studies of nutrient and contaminant levels in foods.According to the author, Crystal Smith-Spangler, Professor at Stanford School of Medicine, “organic food is neither more nutritious nor any less prone to bacterial contamination than corresponding, conventionally grown foods**“** (Katz, 2012).What she did find was a notable difference in phosphorus levels. Organic vegetables do contain higher levels of phosphorus, but this is not clinically significant (Smith-Spangler, 2012).

This study is notably peer-reviewed and is the foremost accurate study in the scientific community pertaining to the topic. It should also be noted that this study was conducted without bias or funding from any third parties with possible agendas but at a university. Crystal Smith-Spangler admits that her initial assumption was that organic would prove to be more nutritious and that she was surprised by the outcome.

Many people believe that the traces of pesticide residues found on some conventionally grown crops can, and will, lead to cancer. Just over a year ago, The American Cancer Society published a journal which stated that there is absolutely no evidence that the low doses of pesticides found in produce increase the risk of cancer (American Cancer Society, 2012). Furthermore, Alex Avery, Director of Research and Education with the Center for Global Food Issues at the Hudson Institute, stated in an interview, “An average cup of coffee has 1000 times more cancer risk than a year’s worth of synthetic pesticide residues” (Poole, 2009, July 30).

The second most significant reason that consumers say they buy organic produce is “to avoid pesticides and other toxins.” According to the United States Department of Agriculture, Organic crops are defined by being “produced without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bioengineering; or ionizing radiation” (Gold, 2007). What this means is that organic farming may not use any synthetic pesticides on their crops. Organic farms do, however, use pesticides. Anyone who believes organic farms do not use pesticides has profoundly misunderstood standard organic farming practices.

Spinosad, rotenone and pyrethrin are three of the most commonly used organic pesticides today. If these names sound less organic and more like chemicals made in a laboratory to you, then you would be correct. Organic pesticides, like these, are not made by crushing freshly picked flowers together in a mortar and pestle and mixing in petula oil. They are created by extracting toxins or poisons from plants, making a concentrate from the extract, and combining several of these concentrates together. This may not be synthetic but it is toxic, and at what point of processing does something become a chemical?

Synthetic pesticides used in conventional farming are, in the vast majority, more toxic, ounce for ounce. The problem with this kind of black and white comparison is that synthetic pesticides are far more efficient; therefore, require fewer applications than organic pesticides. Jeff Gillman, a professor of nursery management at the University of Minnesota was asked, “Are naturally derived pesticides less toxic than synthetic ones?” He replied with, “The answer depends a lot on the dosage… I could use a tiny amount of a potent synthetic that has proved safe over the last 50 years, or a much larger amount of an organic pesticide” (Langlois, 2011). This comment brings up another relevant fact.

Many people seem to believe that conventional farming techniques have not been tested enough when in reality the fertilizers, pesticides and so-called “frankenfood,” gene modifications are the most thoroughly tested products at the grocery store. These farming techniques are stringently tested by the Food and Drug Administration, the United States Department of Agriculture and the Environmental Protection Agency for years before they are used for human consumption. Most of these practices have been used to feed the majority of the population of the world for half a century; I don’t know how this could be better tested.

The EPA published a study comparing the effectiveness of a rotenone-pyrethrin mixture with a common synthetic pesticide called imidan. The study concluded that it took six applications of the rotenone-pyrethrin mixture to obtain an equal level of protection that is provided by two applications of the imidan (Kovach, 1989). If you still are not sure what to believe, take a look at the government’s own EPA website, specifically the “National List of Allowed and Prohibited Substances.” If you believed that there were no chemicals or toxins used in the farming of your organic produce, then maybe you should wonder why you have been misled.

The third most significant reason that consumers say they buy organics is that “organic farming is better for the environment.” The benefits regarding environmental preservation do weigh heavily on the side of current organic farming techniques. According to the USDA, “Organic farming produces higher organic matter content, thicker topsoil depth, higher polysaccharide content, lower modulus of rupture and less soil erosion than the conventionally-farmed soils” (USDA, 2007, June). Not to mention, organic farming creates less pollution and surface water contamination. Though setting our farming techniques back centuries may seem to have some environmental benefits, only conventional farming has the potential, by means of science, to improve and conceivably become even less invasive.

Though increasing biodiversity is a noble cause, is it even feasible to convert to organic farming? Dr. Norman Borlaug, “father of the green revolution,” winner of the 1970 Nobel Peace Prize for saving over a billion lives by spreading conventional farming techniques to third world countries, answered this question best. When asked in an interview what he thought of organic farming in regards to being better for the environment, he replied, “That's ridiculous. This shouldn't even be a debate. Even if you could use all the organic material that you have--the animal manures, the human waste, the plant residues--and get them back on the soil, you couldn't feed more than four billion people. In addition, if all agriculture were organic, you would have to increase cropland area dramatically, spreading out into marginal areas and cutting down millions of acres of forests” (Bailey, 2009). If the greatest threat to biodiversity is habitat loss, and the greatest reason for habitat loss is creating farmland, then creating 30% more farmland to feed the population would be a very counterproductive approach to saving the environment. And, for those of you who do not know, land that is made for growing crops is converted from clear-cut rainforests near the equator. The year round sunny climate in the rainforests is what is necessary to supply stores with year round produce. Guess it’s time to remove the “Save the Rainforests” bumper sticker next to the “Eat Organic” one.

The message to take from this should be that nutritious food is better for your health, whether it is grown conventionally or organically; both types of farming, when done commercially, use chemicals and pesticides; and organic farming may be better for our environment but is a luxury, not feasible for the vast majority of the world or to sustain our growing population. I encourage everyone to go research this on your own, using credible, peer-reviewed sources and weeding out the propaganda, so next time you’re at the grocery store, maybe you can make an informed decision on where your money goes, not a decision based on hearsay or on agenda driven rhetoric.

**References**

American Cancer Society. (2012, January/February). *American Cancer Society Guidelines On Nutrition and Physical Activity for Cancer Prevention. Retrieved from http://www.cancer.org/acs/groups/ cid/documents/webcontent/002577-pdf.pdf*

American Council of Science and Health. (2009) *The Organic Food Nutrition Wars.* Retrieved January 28, 2013, from http://www.acsh.org/the-organic-food-nutrition-wars/

Bailey, Ronald. (2009, March 26). Norman Borlaug, Happy 95th Birthday! Message posted to http://reason.com/blog/2009/03/26/norman-borlaug-happy-95th-birt

CBS News. (2012, September 4).*Organic Food Hardly Healthier, Study Suggests.* Retrieved from http:// www. cbsnews.com/8301-204\_162-57505328/organic-food-hardly-healthier-study-suggests/

Katz, David L.(2012). *Is Organic Food Better?* US News. Retrieved from http://health.usnews.com/health -news/blogs/eat-run/2012/09/04/is-organic-food-better

Kovach, Joseph, Reissig, Harvey, & Nyrop, Jan. (1989). *Effect of Botanical Insecticides: the New York Apple Pest Complex.* Retrieved from Mcgill University, Ecological Agriculture Projects Web site: http://eap.mcgill.ca/CPAP\_1.htm

Langlois, Maureen. (2011). *Organic Pesticides: Not an Oxymoron.* Retrieved from http://www.npr.org/ blogs/health/2011/06/18/137249264/organic-pesticides-not-an-oxymoron

Poole, Christopher. (Director). (2009, July 30). Organic Foods. Jillette, Penn, Price, Star, Teller, Wechter, David, & Yampolski, Aaron. (Executive Producers), *Penn & Teller: Bullshit!* Showtime…

Reganold, J.P. , Elliott, L.F. , Unger, Y.L. (1987). *Long-Term Effects of Organic and Conventional Farmingon Soil Erosion.* United States Department of Agriculture. Retrieved January 26, 2013, from http://naldc.nal.usda.gov/catalog/19192

Smith-Spangler, Crystal, Brandeau, Margaret L, Hunter, Grace E., Bravinger, Clay, Pearson, Maron, Eschbach, Paul J., Sundaram, Vandana, Liu, Hau, Schirmer, Patricia, Stave, Christopher, Olkin, Ingram, & Bravata, Dena M. (2012). *Are Organic Foods Safer or Healthier Than Conventional Alternatives?* (A systematic Review) The Annals of Internal Medicine; 157(5):348-366

United States Department of Agriculture. (2007, June). *What is Organic Production?* (Alternative Farming Systems Information Center). Compiled by Gold, Mary V. Retrieved from http://www.nal.usda.gov/afsic/pubs/ofp/ofp.shtml

Weisse, Elizabeth. (2012). *Study Sees No Nutritional Edge in Organic Food.* USA Today. Retrieved from http://usatoday30.usatoday.com/news/health/story/2012-09-03/organic-food-health/575579 12/1

World Watch Institute. (2013). *Can Organic Farming Feed Us All.* Retrieved January 27, 2013, from http://www.worldwatch.org/node/4060