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# NAVIGATING TODAY'S GROCERY STORES: FOOD LABELS AND THE REGULATIONS BEHIND THEM

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NAVIGATING TODAY'S GROCERY STORES: FOOD LABELS AND THE  
REGULATIONS BEHIND THEM

by

Jessica Furlan

AN UNDERGRADUATE THESIS

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## APPENDIX B

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### NAVIGATING TODAY'S GROCERY STORES: FOOD LABELS AND THE REGULATIONS BEHIND THEM

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University of Nebraska, 2013

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Rising concern over food safety issues by consumers has resulted in an increased demand for what are perceived to be healthier food options. Labels have become major marketing tools, and instrumental in consumer choices. This study looks at the history and regulations behind three certified labels: USDA Organic, Demeter Certified Biodynamic, and Certified Naturally Grown, as well as the highly prevalent “natural” food claim, in an attempt to discover whether the claims made by their labels are factually sound. With the exception of the “natural” claim, which is neither certified nor regulated by the FDA, USDA or other organizations, it is found that for the most part, all three certified labels represent their products truthfully. Additionally, the differences in growing and processing standards between these three certified labels are very minimal, however their certification processes are quite different.

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## **PREFACE**

I would like to foremost acknowledge and thank my thesis advisor Dr. Thomas Powers for his support throughout this process. Gratitude must also be expressed to my faculty advisors Sara Cooper and Dr. Dave Gosselin for their guidance and support throughout my four years as an Environmental Studies student. Finally, I would like to thank my athletic-academic advisor, Mike Nieman, who has been my primary academic counselor for the entirety of my time as a student at the University of Nebraska – Lincoln. Without these individuals this project would not have been made possible.

## INTRODUCTION

Food scares and food recalls are present almost daily in global media sources. Cases of *salmonella*, *bovine spongiform encephalopathy* (BSE), *Escherichia coli* (E. coli), hepatitis, botulism, *Listeria monocytogenes*, and anti-biotic resistant bacteria have all appeared within the past decade and are the primary causes of such food safety concerns (Piggott & Marsh, 2006). These food borne illnesses are not new, but “the industrial production of food on farms and in the chemistry ‘kitchens’ of large corporations” has made them much more prevalent as of late (Adam 1999).

Today’s technological advancements have dramatically changed the way our food is produced and transported. Foods that once had a specific growing season now have no season at all, and are produced at much faster rates (Bartussek; Postler in Adam, 1999). Thanks to preservatives and genetic engineering, foods can now be stored for greater lengths of time. This allows for food to be transported much greater distances. As a result, most food doesn’t even come from within ones own state. On average, food travels 1,500 miles from farm to table (Barndt 2002; Pollan 2006). With this increased mobility, the effects of food borne illnesses have also become much more widespread.

Technology improvements have also made it possible for global news to be just as easily accessible as local news sources, making the awareness of these food scares that much greater. With this increased attention on food scares, there has also been an increased demand for healthier food products.

Consumers are paying closer attention to the food they purchase by looking at both the way in which it is grown, and the way in which it is processed. They want to know how these growing practices differ and how these products can be distinguished from others (Zanoli, R. and Naspetti, S. 2002). Researching each individual product is unrealistic and, for the most part, unnecessarily time consuming. This leaves labeling as the easiest answer to understanding how food is grown and processed.

Corporations are attempting to capitalize on this fairly newfound interest in healthy options by labeling and marketing their products as such. The variety of different labels and health claims has dramatically increased within the past decade, as is apparent by walking through any store selling food products. Labels advertising healthy growing and processing practices are proving to play a large role in consumer decisions (Huffmann et al., 2003).

Among the top options for healthier choices when it comes to buying practices are “organic” and “natural” foods. This study is not focused on whether organic or natural foods are better for your health. That debate, fueled between organic and traditional farmers and corporations, will be ongoing likely for decades to come. Organic farming, in the 20<sup>th</sup> and 21<sup>st</sup> century sense, is still too young for significant evidence as to the health benefits, or lack thereof, to be ascertained.

What can be studied however are the present regulations behind these health claims and labels. With a large degree of faith and trust placed in labels

by today's consumers, it is important to understand what those labels really mean, in a deeper sense than their advertised claim. This research study looks specifically at the regulations behind three certification seals, as well as the "natural" claim, in an attempt to answer the question: are consumers really purchasing what they think they are? The three certified labels: USDA Organic, Certified Naturally Grown, and Demeter Certified Biodynamic all represent a different organic standard. USDA Organic is government regulated and certified (USDA, 2013), Demeter Biodynamic meets both USDA standards as well as its own private certification standards (Demeter, 2013) and Certified Naturally Grown is an alternative certification program that, while based off USDA's National Organic Program (NOP), is not government regulated, and does not permit the use of the word "organic" on their products (Certified Naturally Grown, 2013).

The primary limitation of this project was one of time. As the complexity of the regulations regarding labeling uses became apparent, it was clear that considerable time is required to address these regulations on product labeling in detail. Therefore, within the given timeframe, it was necessary to focus on a small portion of the issues pertaining to these labeling regulations. It is also apparent that bias may enter into some sources of literature increasing the difficulty of presenting a balanced overview of the topic.

This research project outlines the history and regulations behind the aforementioned certified labels as well as the natural foods. Positives and negatives within each label or claim are discussed, as well as comparisons

between them. Conclusions are drawn as to the truthfulness of their claims.

Finally, potential suggestions for further research on this topic are presented.

## MATERIALS AND METHODS

This research project was conducted as a literature review over an eight-month period from September 2012 to May 2013. Largely focused on government regulations, the primary source of research material was obtained from United States government documents.

## RESULTS

The organic movement as it is recognized today is far different than where it began. In ancient history, organic farming practices were the only production method. The study and purposeful practice of organic agriculture did not truly begin until the 1900's. Thought of as the pioneer of organic agriculture, Sir Albert Howard (1873-1943) was educated in England and later moved to India for a quarter century where he directed multiple different agricultural research centres. His research and resulting publications comprise what are now many of the core principles of organic agriculture. Howard's 1940 book *An Agricultural Testament* is "regarded as the keystone of the organic movement" (Rodale Press, 1976) and inspired the publication of *Organic Farming and Gardening Magazine* by Jerome Rodale, of which Howard served as the associate editor (Rodale as cited in Heckman). Rodale's magazine is largely credited with popularizing organic agriculture throughout the United States (Kelly, 1991).

Before national standards and programs were implemented, private organizations had begun developing standards and third party certification to support organic farming practices (Greene, 2002). Founded in 1972 in Versailles, France, the International Federation of Organic Agriculture Movements (IFOAM) represents these private sector organizations (IFOAM, 2009). In 1988 IFOAM became statutes with the United Nations Department of Information and began cooperating partners with the Food and Agriculture Organization (FAO) (Geier, n.d.). Their first accreditation programme was set up in 1992 (SOEL and FiBL, 2002).

## **USDA Organic**

Within the United States, it took forty years from the time *An Agricultural Testament* was published to the first appearance of a government publication on organic farming. In 1980 the USDA published the *Report and Recommendations on Organic Farming* with the purpose stated as “increasing communication between organic farmers and the USDA” (USDA, 1980). The Federal Organic Foods Production Act (OFPA) followed ten years later and in 2002 the first official USDA Certified Organic program was published (USDA, 2013).

As of 2008, there were an estimated 4,815,959 acres of US certified organic farmland, and almost 13,000 certified operations; more than double the number in 2002 (USDA, 2010). Although USDA certified, this farmland and these operations are not technically regulated directly by the United States government. Third party certification bodies are the ones to actually carry out the audits and certification of the operations. These certification bodies must apply to the USDA, are trained, and audited, before they are able to conduct audits themselves. The farms they audit must strictly follow a lengthy list of regulations if they hope to pass inspection and use the term “organic” on their product.

Within USDA’s regulations there are different extents to which the USDA seal and “organic” claim can be used. The seal is used only on products that are 95% organic or greater. Products with 100% organic ingredients may use the USDA organic seal and/or a “100% Organic” claim. Where products have 95% or greater organic ingredients, the USDA seal and/or “organic” claim may also be

used. Products with at least 70% organic ingredients may use the “Made with” organic ingredients claim, but are not allowed to use the USDA seal. When less than 70% of a product is organic, the word “organic” is not permitted on the primary display label. In each of these cases, the organic ingredients must be identified in the ingredient list. The only case in which the term “organic” can appear on a product without it being certified is when that product is from an organic farm that sells less than \$5000 annually.

There has been a high degree of criticism of the NOP on a number of different grounds. One major reason comes from the large list of allowable substances permitted for use in organic agriculture. Over 20 pages long, there are a multitude of chemicals that are allowed in organic farming. The criteria for these substances to be added or removed from The National List of Allowed and Prohibited Substances are evaluated against a number of different criteria. The most significant of these states:

(5) The substance is listed as generally recognized as safe (GRAS) by Food and Drug Administration (FDA) when used in accordance with FDA’s good manufacturing practices (GMP) and contains no residues of heavy metals or other contaminants in excess of tolerances set by the FDA (USDA, 2013).

A study done by Pew Charitable Trust on food additives in the United States yielded some surprising and unsettling results. As of the beginning of

2011, more than 10,000 chemicals were allowed in human food. Those chemicals were cleared for use in one of three ways:

1. The FDA (or EPA when dealing with pesticides) approves the use of the chemical by amending or creating a regulation, in response to a petition by a manufacturer. The public has opportunity to comment before approval is finalized and the regulation is issued. Before 1995 all FDA regulations were made this way. From 2006-2010, only 3% of chemicals were regulated in this manner.
2. A manufacturer requests that the FDA review a chemical it wants to use in food. The FDA replies that it has “no objections” or “no questions.” The public is not notified. From 2006-2010, 97% of FDA regulations proceeded this way.
3. A manufacturer deems a chemical’s use as “generally recognized as safe” based on expert opinions and published studies. The FDA is not notified, nor is the public.

During their three-year research project, the Pew Health Group found that the FDA focuses on the food safety of a product before its use, but have no regulations that ensure that these chemicals are safe for use after their initial approval. Manufacturers are also not required to inform the FDA of the amount of chemicals they use, or new scientific data on the chemicals. Pesticides, industrial chemicals, and chemicals found in consumer products on the other hand, are held up to this level (PEW, 2011).

Chemicals such as brominated vegetable oil (B.V.O.) have existed as ingredients within US food products for decades because of these loopholes in regulations. Found in approximately 10% of all bottled beverages in the United States, including such drinks as orange Gatorade and most Mountain Dew flavours, B.V.O. contains bromine, a chemical that is also found in flame retardants, pesticides, and plastics. It builds up in the body and can cause skin lesions, nerve disorders and memory loss. Banned in Europe and Japan, it has been present as a food additive for 80 years, by maintaining its “generally recognized as safe” additive. According to Michael F. Jacobson, the executive director of the Center of Science in Public Interest, “the testing of B.V.O. is abysmal,” with the longest studies on the additive lasting only four weeks. This is hardly enough time to determine whether or not it is safe to consume, especially when most additives are tested for two years (Strom, 2012).

A study conducted by researchers at the University of Southampton in the UK, found significant evidence in the link between the combined use of artificial food dyes and sodium benzoate and increased hyperactivity in children. Their findings were so significant that it prompted manufacturers to voluntarily change the formulas of the products where this combination was found in their products sold overseas. The European Food Safety Association (EFSA) originally found the study too inconclusive to demand the reformulation of the products, but has now minimized allowable amounts of three of the “Southampton Six” artificial colours (EFSA, 2013).

The main problem with many of these additives (GRAS and others) as well as different food treatments is the fact that they have not been present in food sources for long enough periods of time to be adequately tested. Radiation for example, although not permitted in organic agriculture, is allowed in traditional processing methods, provided those products bear the radiation seal. Deemed safe by international food safety organizations, long-term consequences have proven to show otherwise (Elliot, 1990).

In light of these examples it is very questionable as to the review and strictness of testing standards by the FDA and USDA, especially when a previous evaluation criteria states:

(3) The nutritional quality of the food is maintained when the substance is used, and the substance, itself, or its breakdown products do not have an adverse effect on human health as defined by applicable Federal regulations.

The NOP has also been criticized for its wordy regulations that provide loopholes for farms to operate in ways not up to organic standards. Processes involving animals suffer the greatest amount of criticism, especially those dealing with cattle. The conversion of cows from non-organic to organic, and the permissibility of drugs and chemicals on “organic” animals are two such examples on a long list of what most would consider non-organic practices (USDA, 2013).

## **Demeter Certified Biodynamic**

Biodynamic agriculture finds its roots in a series of lectures given by Rudolf Steiner in 1924. Based on the idea that cosmic or ethereal forces can impact animal and plant development and growth, biodynamic farming attempts to understand and manipulate these forces in order to use them to promote natural growth and health benefits within their products. Similar to the popularization of organic farming within the United States, biodynamic agriculture was brought to the attention of Americans by a student of Steiner's, Ehrenfried Pfeiffer, with the start of a research lab in New York in 1938, and a journal *Biodynamics* (Mazzocchi, 2006).

Certification of biodynamic agriculture is carried out by the international not-for-profit organization Demeter. Established in 1928, they presently boast over 3,000 member farms within 40 countries, and over 1,000,000 hectares of certified biodynamic farmland worldwide. Demeter's main objective is to not only produce organic food at the highest standard, but to "create a farm system that is minimally dependant on imported materials, and instead meets its needs from the living dynamics of the farm itself." (Demeter, 2013).

Prerequisites for Demeter certification require that the NOP standards are met as a base, and that the land is managed to the Demeter *Farm Standards* for at least one year. Unlike the USDA, certification and audits of farms are carried out directly by Demeter. Certification must be renewed annually, in addition to a yearly on-site farm evaluation during the growing season.

One positive to Demeter's certification is their growing and processing regulations. The *Farm Standards* and *Processing Standards* clearly outline ways in which processes should be managed, and which substances are and are not permitted. As NOP standards must be met as a base, many of the Demeter *Standards* are the same or similar. However, as a whole, Demeter generally has stricter regulations on the permissibility of chemicals and antibiotic use. In keeping with the example of cattle, meat products that come from an animal brought in from a non-certified (USDA Organic or Demeter) source, will never be certified, regardless of how much time they spend on a certified farm before slaughter. Demeter *Standards* generously provide notes as to differences or parallels between their standards and those of the NOP.

### **Certified Naturally Grown**

With the implementation of the NOP in 2002, many small farms that had used organic farming practices for years, now found themselves unable to continue to market and label their products as such. It was not that their farms did not meet the USDA standards, but that the cost of becoming certified was unaffordable for many. As a result, Certified Naturally Grown (CNG) was born as a non-profit alternative to USDA certification.

CNG works on a Participatory Guarantee System (PGS) certification, which is supported by IFOAM. Essentially, it is a peer-reviewed system where farmers inspect one another. Because they have first hand experiences with organic growing practices and the challenges they can present, these farmers

have the qualifications to carry out inspections. CNG farmers work together to strengthen their local farming communities, by providing support and knowledge to one another (CNG, 2013).

CNG provides certification for produce, livestock (including poultry and eggs), and apiaries. Though CNG is not associated with the USDA, their standards for produce and livestock are based directly off of the NOP standards. The NOP at this time does not have regulations for beekeepers, and so those CNG standards are original to CNG. Both the livestock and produce standards are almost direct copies of the NOP, although some sections are excluded. Within them, the term “organic” is replaced with “Certified Naturally Grown” and differences between CNG standards and NOP standards are italicized.

## **Natural**

The “natural” food claim is the only non-regulated claim or label within this report. Although the FDA defines “Natural” as “nothing artificial or synthetic (including colors regardless of source) is included, or has been added to the product that would not normally be there. 56 F.R. 60421-01” (1991), there are no regulations to enforce this definition. There have been multiple litigation cases against product manufacturers for the inclusion of unnatural substances in food products labeled “natural” (Goulet, 2012). The FDA has largely refused to get involved or provide guidance. After requesting comments on a potential rule regarding the claim “natural” the FDA still declined to implement an official definition. Instead, they issued a formal statement:

After reviewing and considering the comments, the agency continues to believe that if the term “natural” is adequately defined, the ambiguity surrounding use of this term that results in misleading claims could be abated. However, as the comments reflect, there are many facets to this issue that the agency will have to carefully consider if it undertakes a rulemaking to define the term “natural.” Because of resource limitations and other agency priorities, FDA is not undertaking rulemaking to establish a definition for “natural” at this time. (1993).

On their website, the FDA attempt to answer the question “What is the meaning of ‘natural’ on the label of food?”:

From a food science perspective, it is difficult to define a food product that is “natural” because the food has probably been processed and is no longer the product of the earth. That said, the FDA has not developed a definition for use of the term natural or its derivatives. However, the agency has not objected to the use of the term if the food does not contain added color, artificial flavors, or synthetic substances (FDA, 2013).

This definition is largely non-committal, and is not helpful for consumers. “If they have to put the word ‘natural’ on a box to convince you, it probably isn’t” (Schlosser, 2001).

## CONCLUSION

As global concern over food safety increases, consumer demand for healthier food options also increases. With the shift towards organic and other more natural food sources, it is important to look at the regulations behind the labels consumers are placing their trust in, to determine whether those labels claims are truly sound.

With the exception of the “natural” claim, which is neither regulated nor certified, consumers are essentially getting what they believe they are purchasing when looking at organic and similar labels. When looking at the regulations behind the three certified labels studied it was found that none of their products were 100% chemical free, but all were treated with much lesser amounts of chemicals used in traditional farming.

USDA Organic, Demeter Certified Biodynamic, and Certified Naturally Grown products all have extremely similar regulations. Where they differ is the way in which they are certified, and the extent to which they focus on supporting sustainable agriculture. The amount of variance between products bearing the differing certified labels is likely so insignificant that choosing a product for its contribution to sustainable agriculture seems to become almost more of an important decision than the strictness of the standards behind the label.

Organic agriculture in today’s sense is still relatively new, and established regulations are newer still. More time, and more research is needed in order to determine whether organic really is healthier. However, one thing is for certain,

consumers will continue to be increasingly aware of food related issues, and will hopefully drive the government to create stronger testing regulations on all products.

Further recommendations of study would focus primarily on auditing of certified operations. There is a definite lack of uniformity in the certification process within each certification program where research as to how often various sizes of operations are audited over a long period of time (>10 years), would be beneficial in determining the general regulation practices of the certification bodies. A more qualitative study on the perceived strictness of auditors, and reversely, to what degree auditors admit to allowing sub-standard practices, would also prove helpful in verifying whether standards are truly met for each label. However, such a study would be very difficult to carry out, even with a high level of anonymity.

## REFERENCES

- Adam, B. (1999). "Industrial Food for Thought: Timescapes of Risk." *Environmental Values*, 8(2). Retrieved from <http://www.jstor.org/stable/30301704>
- Bartussek, H. (1995). "Zeit der Tiere – Raum für Tiere. Die Haltung von Tieren in der Landwirtschaft" in Schneider, M., Geißler, K. and Held, M. (eds) "Zeit-Fraß. Zue Ökologie der Zeit in Landwirtschaft und Ernährung", *Politische Ökologie*, Sonderheft 8: 66-70.
- Barndt, D. (2007). *Tangled Routes: Women, work and globalization on the tomato trail*. Lanham: Rowman & Littlefield Publishers.
- Burton, M., Young, T. and Crob, R. (1999). "Meat Consumers' Long-Term Response to Perceived Risks Associated with BSE in Great Britain." *Cahiers d'Économie et Sociologie Rurales* 50(1).
- Certified Naturally Grown*. 2013. Web. Retrieved from: <http://www.naturallygrown.org/>
- Demeter Association, Inc.* 2013. Web. Retrieved from: <http://www.demeter-usa.org/>
- EFSA*. 2013. "Food Colours." Web. Retrieved from <http://www.efsa.europa.eu/en/topics/topic/foodcolours.htm>
- Elliot, T. (1990). "Food Irradiation – Miracle or Menace?" *Conservation Now* 1(1).
- FDA*. 2013. Web. Retrieved from <http://www.fda.gov/>
- Geier, B. (n.d.). "A Look at the Development of IFOAM in its First 25 Years." Retrieved from [http://www.ifoam.org/about\\_ifoam/inside\\_ifoam/pdfs/First\\_25\\_Years.pdf](http://www.ifoam.org/about_ifoam/inside_ifoam/pdfs/First_25_Years.pdf)
- Goulet, (2012). "Confusion in Court over "All Natural" Claims." *American Bar Association*. Retrieved from <http://apps.americanbar.org/litigation/committees/classactions/articles/spring2012-0412-all-natural-labels-mean-marketing.html>
- Greene, C. (2002). "Recent Growth Patterns in the U.S. Organic Foods Market." *U.S. Department of Agriculture. Agriculture Information Bulletin No. 777*. Retrieved from: <http://www.ers.usda.gov/publications/aib-agricultural-information-bulletin/aib777.aspx>

Heckman, J. (2005). "A history of organic farming: Transitions from Sir Albert Howard's *War in the Soil* to USDA National Organic Program." *Renewable Agriculture and Food Systems*, 21(3). Retrieved from <http://www.westonaprice.org/farm-a-ranch/history-of-organic-farming>

Huffman, W., Shogren, J., Rousu, M., and Tegene, A. (2003). "Consumer Willingness to Pay for Genetically Modified Food Labels in a Market with Diverse Information: Evidence from Experimental Auctions" *Journal of Agricultural and Resource Economics*, 28(3). Retrieved from <http://0-www.jstor.org.library.unl.edu/stable/40987963>

IFOAM. 2009. Web. Retrieved from <http://www.ifoam.org/index.html>

Kelly, W. C. (1991). "Rodale Press and Organic Gardening." History of the Organic Movement. Retrieved from [http://www.hort.purdue.edu/newcrop/hort\\_306/reading/Reading%2031-4.pdf](http://www.hort.purdue.edu/newcrop/hort_306/reading/Reading%2031-4.pdf)

Postler, G. (1995). 'Lebens- oder Hochleistung? Vom Hirten zum Gentechniker in der Tierzucht', Schneider, M., Geißler, K. and Held, M. (eds). 'Zeit-FraB. Zur Ökologie der Zeit in Landwirtschaft und Ernährung', Politische Ökologie, Sonderheft 8

Marcu, Monica. EUROSTAT. (2009). "The EU-27 population continues to grow." Retrieved from [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-QA-09-031/EN/KS-QA-09-031-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-QA-09-031/EN/KS-QA-09-031-EN.PDF)

Mazzocchi, M. (2006). "No News Is Good News: Stochastic Parameters versus Media Coverage Indices in Demand Models after Food Scares." *American Journal of Agricultural Economics*, 88(3). Retrieved from: <http://www.jstor.org/stable/3697761>

McCann, D., Barrett, A., Cooper, A., Crumpler, D., Dalen, L., Grimshaw, K., Kitchin, E., Lok, K., Porteous, L., Prince, E., Sonuga-Barke, E., Warner, J., Stevenson, J. (2007). "Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial." *Lancet*. Nov 3;370(9598):1560-7

PEW Charitable Trusts. 2011. Web. Retrieved from <http://www.pewhealth.org>

Piggott, N. and Marsh, T. (2004). "Does Food Safety Information Impact U.S. Meat Demand?" *American Journal of Agricultural Economics*, 86(1). Retrieved from <http://0-www.jstor.org.library.unl.edu/stable/3697881>

Pollan, M. *The omnivore's dilemma*. New York: Penguin Press, 2006.

Rodale, J.I. (1942). "An introduction to organic farming." *Organic Farming and Gardening May*.

- Schlosser, E. *Fast Food Nation: The Dark Side of the All-American Meal*. Boston: Houghton Mifflin, 2001.
- Strom, S. (2012). "Drink Ingredient Gets a Look." *The New York Times*. Web. Retrieved from [http://www.nytimes.com/2012/12/13/business/another-look-at-a-drink-ingredient-brominated-vegetable-oil.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2012/12/13/business/another-look-at-a-drink-ingredient-brominated-vegetable-oil.html?pagewanted=all&_r=0)
- United States Department of Commerce. (2010). *Table 1378. EU and U.S. Organic Land, Farm Sector, and Sales: 2007 and 2008*. [Data File]. Retrieved from <http://www.census.gov/compendia/statab/2012/tables/12s1378.pdf>
- United States Department of Agriculture. (1980). Report and Recommendations on Organic Farming. Retrieved from <http://www.nal.usda.gov/afsic/pubs/USDAOrgFarmRpt.pdf>
- United States Department of Agriculture. (2010). *U.S. certified organic farmland acreage, livestock numbers, and farm operations*. [Data file]. Retrieved from [http://www.ers.usda.gov/data-products/organic-production.aspx#.UWt\\_H46l2yE](http://www.ers.usda.gov/data-products/organic-production.aspx#.UWt_H46l2yE)
- Zanoli, R. and Naspetti, S. (2002). "Consumer motivations in the purchase of organic food. A means-end approach." *Università Politecnica delle Marche*. Retrieved from [http://mpa.ub.uni-muenchen.de/32712/1/MPRA\\_paper\\_32712.pdf](http://mpa.ub.uni-muenchen.de/32712/1/MPRA_paper_32712.pdf)