

The Organic Center



Organic Research
in the U.S.

BioFach
Numberg, Germany
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CEO
The Organic Center



Our Vision



Conversion of agriculture
to organic methods,
improved health for the
earth and its inhabitants,
and greater awareness of
and demand for organic
products.



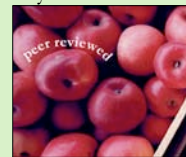
Our Mission

To generate credible, peer-reviewed
scientific information and
communicate the verifiable
benefits of organic farming
and products to society.



Long-Term Goals

1. Expand the scope of research on the
benefits of consuming organic food, as well
as on organic production and processing
methods and systems.



Long-Term Goals

2. Accelerate the conversion
of agriculture to organic
methods by building demand
for organic products.



Long-Term Goals

3. Promote research and innovation that will
create new and/or expand existing
dimensions of the organic benefit, and
develop strategic alliances with other research
institutions.



Long Term Goals

4. Serve as a clearinghouse for organic science information, tracking research, both past and current, analyze the results and make it available to promote environmental, public health and organic causes.



Our Strengths

- Creation of consumer-friendly summaries of hard-core science and research on the organic benefit.
- Ability to tap expertise and forge teams composed of leading scientists in industry, academia, and private research institutes.



Our Strengths

- Helping public health and medical professionals understand how organic food can help prevent disease and promote well-being.



A Web Based Scientific Resource



Three Key Focus Areas

- Antioxidants
- Pesticides
- Nutrient Density/Composition



Antioxidants

Key Observation:

- A higher portion of the antioxidants in organic food tend to be in the aglycone form, which is more active, and more bioavailable for humans.
- We're trying to try to determine why.



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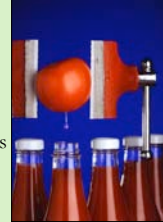
Elevating Antioxidant Levels in Food Through Organic Farming and Processing

January 2005



Our Antioxidant Findings

- Antioxidant levels were on average about 1/3 higher in organic food compared to conventional.
- Some organic food processing techniques can help preserve antioxidants in raw commodities, compared to conventional processing methods.



Ishida and Chapman, January 2005

Western Regional Research Center, U.S. Department of Agriculture, Agricultural Research Service

A Comparison of Carotenoid Content and Total Antioxidant Activity in Catsup from Several Commercial Sources in the U.S.

Conclusion:

Organic brands of catsup contained 57 percent higher levels of the health-promoting antioxidant lycopene compared to six national brands.



Hanson, Yang, Wu, Chen, Ledesma, Tsou, Lee

AVRDC – The World Vegetable Center, Taiwan
Dept. of Food Science, Rutgers University, New Jersey

Variation for Antioxidant Activity and Antioxidants in Tomato

J. American Soc. Hort. Sci. 129(5):704-711. 2004

Conclusion:

Higher lycopene has been found in smaller tomatoes.



Pesticides

Key Observation:

Consuming organic food can virtually eliminate exposures to dangerous insecticides known to disrupt neurological development.



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Minimizing Pesticide Dietary Exposure Through Consumption of Organic Food

October 2004



Pesticide Exposure Findings

Fruits and vegetables grown conventionally are:

- 3 to 4 times more likely to contain residues than organic foods,
- 8 to 10 times more likely to contain multiple residues,
- contain residues that are 3 to 10 times higher, than organic food.



Greene, Lu, Benbrook, Landrigan

Symposium at the American Association for the Advancement of Science (AAAS), 2006

Contributions of Organic Farming in Reducing Pesticide Risks and Enhancing Food Quality

Conclusion:

The discovery of new, reduced risk pesticides has clearly helped farmers in their transition away from high-risk pesticides.



Merrigan, Blumberg, Davis, Andrews, Davies
USDA Human Nutrition Research Center on Aging, Tufts University
University of Texas-Austin
Washington State University
Washington State University

AAAS Symposium - Understanding and Nourishing the Roots of Food Quality

Conclusion:

Organic farming practices have the potential to increase the concentrations of vitamins, minerals, and antioxidants in food.



Lu, Toepel, Irish, Fenske, Barr, Bravo

Rollins School of Public Health, Emory University
University of Washington
National Centers for Disease Control and Prevention

Organic Diets Significantly Lower Children's Dietary Exposure to Organophosphorus Pesticides EHP, Oct. 2005

Conclusion:

On a daily basis, the majority of the exposures to two OP insecticides among children are coming through the diet, rather than uses in the home, schools, and residential environments.



Nutrient Density/Composition

Key Observation:

The magnitude of nutrient concentration increases on well run organic farms is the same order of magnitude as the nutrient decline seen on conventional farms.



Lilienthal, Grieshop, Merchen, Mahan, Fahey

Department of Animal Sciences, University of Illinois, Urbana,
Department of Animal Sciences, The Ohio State University

Chemical Composition and Protein Quality Comparisons of Soybeans and Soybean Meals from Five Leading Soybean Producing Countries

J.Agric.Food Chem.2004,52,6193-61996193

Conclusion:

Predominately GMO soybeans from Argentina contained up to 50% less protein than conventional soybeans grown in India & China.



Drewnowski

Am J Clin Nutr 2005;82:721–32

Concept of a nutritious food: toward a nutrient density score

Conclusion:

The 2005 *Dietary Guidelines for Americans* recommend that consumers replace some foods in their diets with more nutrient-dense options. Such dietary guidance is not based on any consistent standards or criteria but rather by the absence of problematic ingredients such as fat, sugar, and sodium.



Food Quality Index

Three Components:

1. Nutrient Density Index
2. Disease Prevention & Health Index
3. Taste & Sensory Appeal Index



Nutrient Density Index

Based on the portion of essential daily nutrients contained in 1,000 calories of a given food. Index components will be weighted to reflect the relative importance of increasing dietary consumption of a given nutrient.



Disease Prevention and Health Promotion Index

Combines the concentration and potency of beneficial, biologically active constituents in food (e.g., antioxidants, CLAs, and omega-3s), as well as factors rendering food less healthful (e.g., pesticide and mycotoxin contamination, bacteria, drug residues, antibiotic resistance).



Taste and Sensory Appeal Index

Captures levels of consumer satisfaction following consumption of food. This index will be based on intrinsic quality parameters such as taste, smell, and texture.



Current Directly Funded Studies

A Comparison of Lycopene and Other Phytochemicals in Tomatoes Grown Under Conventional vs. Organic Management Systems – World Vegetable Center, Taiwan, Republic of China



How can organic farmers increase the concentrations of lycopene in tomatoes?



Current Directly Funded Studies

New Approaches to Measure the Impact of Farming Systems and Technology on Food Quality – Friedman School of Nutrition Science and Policy, Tufts University, Boston, MA

Focus on analytical methods to determine how agricultural methods affect antioxidant levels in key fruits and vegetables.



Current Directly Funded Studies

A Comparison of Strawberry Fruit Quality from Organic and Conventional Farms – Washington State University, Pullman, WA



An in-depth field study focusing on the impacts of organic farming systems on antioxidant levels, nutritional quality and sensory parameters.

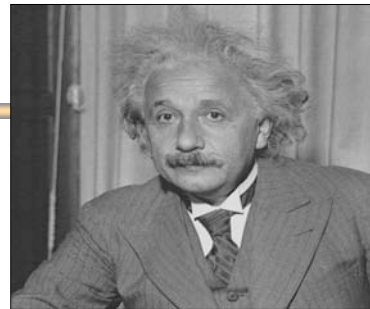


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Creating Healthy Demand for a Healthy Planet™



“If we new what we were doing it wouldn’t be called research would it?”
Albert Einstein

