

What You Should Know About Organic Foods

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ACCORDING TO *Webster's Dictionary*, "organic" is defined as relating to or belonging to the class of chemical compounds with a carbon basis.¹ Using organic foods may be a healthier choice because neither hormones nor drugs are used to stimulate growth in animals.² Nonsynthetic pesticides and fertilizers used on organic crops reduce the risk of contamination to soil and water sources.^{3,4} As multiple food-safety issues continue to surround our food supply, the knowledge of organic foods will enhance our profession.

The USDA, which regulates organic foods, does not claim that organically produced food is safer or more nutritious than traditionally produced foods. However, risks have been identified with exposure to some pesticides.⁴ These risks involve certain types of cancer, birth defects, premature births, insulin resistance, and type 2 and gestational diabetes.⁵ The *Journal of Alternative and Complementary Medicine* reviewed multiple studies, and found that organic crops usually contained more vitamin C, iron, magnesium, and phosphorus, and significantly fewer nitrates, than conventional crops.⁵ We are learning that organic crops provide a higher concentration of vitamins and minerals, and may have increased nutrient content. Studies that were completed in Europe showed increased levels of conjugated linoleic acid and omega three polyunsaturated fats in organic cow's milk compared with regular milk.^{3,5}

You may have noticed that there are multiple organic foods on the shelves of your favorite grocery store. As registered dietitians, we often educate our patients to purchase fresh fruits and vegetables. Produce, as well as meats, canned goods, milk, and even chocolate, may now have an organic alternative. Farmers emphasize the use of renewable resources and the conservation of soil and water in the production of organic foods. This will enhance the environment for all future generations.³ The best way to gauge whether a food is organically grown is to look for the USDA organic label, which tells you that the food is 95% organic.⁴

In the United States, the Organic Foods Production Act of 1990 established national standards for organically grown foods. The final ruling went into effect in October 2002. Organic foods cannot be irradiated, genetically engineered, or fertilized with sewage sludge.^{3,4,6} Government-approved certifiers inspect organic farms and food companies for compliance to these standards. The USDA places a label on the food to assist consumers, with the assurance that the product they are purchasing is at least 95% organic.³⁻⁶

The United States organic industry is one of the fastest-growing categories in the food business. Sales of organic foods are increasing, and are projected to double by the year 2009.⁷ The largest segment of organic consumers is part of the "baby-boomer" generation.⁶ China is on the rise to becoming the leader in the organic industry.⁵ The cost of organic food has risen as the demand increases. Organic foods cost, on average, 50% more than their regular alternatives, due to production costs.⁶ Organically raised animals are not given antibiotics, and must have access to the outdoors, fresh water, air, and pasture.² Organic fruits and vegetables carry increased costs due to the nonsynthetic pest controls used.⁶ Products are often more labor-intensive, and the farmers do not receive most of the subsidies that

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larger companies in agricultural businesses can obtain.^{3,6}

Fruits and vegetables account for the largest portion of organic sales, at 42% according to the Organic Trade Association Manufacturer Survey.⁸ As dietitians, we have many gold standards for clinical practice, and in the organic industry, the gold standard is to buy locally grown organic products.⁵ Local farmers often do not charge a premium on their products.

The FDA regulates organic foods. They are subject to recalls when there is a risk of harming the public. For example, organic spinach was recalled in September 2006 due to *E. coli* bacteria, and chocolate bars were recalled in December 2007 for containing undeclared milk and tree nuts, and were associated with allergic reactions in consumers.⁹

The Organic Trade Association is the voice of the organic industry in North America. Its mission is to promote and protect organic trade to benefit the environment, farmers, public, and the economy. It monitors the work of government agencies, takes positions on legislation that affects organic agriculture and products, and represents the industry to regulators, elected officials, and international bodies.⁸ It is also the founder of a large trade show focusing on products and trade issues. It supports scientific research. There is a certified organic food directory listing certified growers, manufacturers, distributors, and certifying agents.⁸

The Hunger and Environmental Dietetic Practice Group (www.HENDpg/org) of the American Dietetic Association has a mission to lead the future in sustainable and accessible food and water systems through dietetic education, research, and action. Their vision states that Hunger and Environmental Nutrition members are the most valued source of nutrition services to promote access to nutritious food and clean water from secure and sustainable environments.³

This group produced a document in June 2006 (revised in April 2007) to assist dietitians with knowledge regarding organic foods, with the following evidenced-based fact.

Benefits of Organic Farming to the Environment

- An organic food-production system creates healthy soils, the foundation for healthy crops.

- Farming practices in an organic system include growing diverse crops and a crop-rotation plan using cover crops, which are plants beneficial in preventing soil erosion, enhancing soil fertility, and disrupting weed, pest, and disease cycles.
- An organic food-production system eliminates synthetic fertilizers, thereby reducing nitrogen and phosphorus contamination of groundwater.
- An organic food-production system conserves fossil-fuel energy.
- An organic food-production system reduces the use of pesticides that persist in the environment.

Benefits of Organic Farming to the Farmer

- There are economic savings though farm inputs: crop rotations, composting, and reducing exposure from pesticides to farm labor and family members.
- Organically produced foods contain fewer pesticide residues.
- Exposure to conventional pesticides can have negative effects on both female and male fertility.
- In developing countries, organic farming improves community and household food security.
- Sustainable prices for organic products help farmers reinvest in their operations, and encourage young people to enter farming.

Benefits of Organic Farming to the Consumer

- Certain plants cultivated in an organic system contain higher levels of antioxidants.
- Children who consume organic diets have reduced exposure to organophosphorus pesticides, as measured by urine concentration in crossover diet studies.
- Research demonstrates improved flavor in organic versus conventionally produced strawberries, and improved taste in organic versus conventionally produced apples.

Some substances that are used in organic crop production may include copper sulfate, vitamins,

Table 1. Pesticide Content

Highest Content	Lowest Content
Peaches	Papayas
Apples	Broccoli
Bell peppers	Cabbage
Celery	Bananas
Nectarines	Kiwi
Strawberries	Peas (frozen)
Cherries	Asparagus
Pears	Pineapple
Spinach	Onions
Lettuce	Avocadoes
Potatoes	Mangoes

potassium chloride, calcium carbonate, sodium bicarbonate, calcium phosphates, and iron.⁴ The exact content of these substances in organic foods is not known, but renal dietitians should investigate these foods as a potential source.

Some practical suggestions to provide to patients to decrease their risk for increased pesticides in vegetables and fruits are to:

- (1) Buy local produce.
- (2) Reduce intake of pesticide residues by washing the product well.
- (3) Scrub the produce.^{5,6}

It is beneficial to remove the outer layers of fruits and vegetables, and to trim fat from meats. The priority in an organic budget should be pro-

duce, because regular produce usually contains the most pesticides. Table 1 provides the pesticide residue contents in some fruits and vegetables. It is organized in terms of highest and lowest content of pesticide residue content.^{5,6}

As always, we need to consider all food sources when interviewing and educating our patients on the importance of label-reading. It is important for us to assist in decreasing the risk of using any food sources that may be contaminated, and to continue educating patients about food safety.

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