

Nutrition and Health Info Sheet

Organic Foods

For Health Professionals

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What are organic foods?

The term “organic” is used to label foods and products that grown and produced using specific methods and practices. Practices and materials used in the production of organic products aim to improve the ecological balance of natural systems, minimize pollution, and optimize the productivity and relationship between soil life, plants, animals, and people.¹ The focus of preserving and developing soil to counteract changes due to the industrialization of agriculture was at the core of the beginning of the organic movement in Europe in the 1920s.²



While certifications and regulations for the use of the term “organic” can vary worldwide, the United States Department of Agriculture oversees the monitoring, approval and definition of the term “organic” in the United States.³

Demand for organic food products has grown tremendously over the last decade with \$43 billion spent in 2016 alone, accounting for 5.3% of total food sales in the United States.⁴

How are methods and practices for producing organic foods different from conventional foods?

Produce: Organic farming excludes the use of synthetic pesticides and sewage sludge. It also requires the producer to use methods that maintain or improve biological, physical, or chemical condition of the soil. Some naturally-occurring substances can be used as pesticides, such as extracts from microorganisms or plants. Examples of organic farming practices include regularly rotating crops, increasing diversity of crops and livestock, soil enhancement, and non-synthetic pesticide pest control. The seeds planted for organic produce must be from

organically grown products, and may not be genetically engineered unless there is no organic equivalent to the seed.² These practices have been shown to have environmental benefits because of the reduction of chemical inputs and improved soil quality.^{5,6}

Meat and dairy: To be considered organic, the animals (both used for meat and those producing the milk) must be fed 100% organic feed. This can include feed grains and the foraging of open pastures. Organic farming practices also forbid: any drugs, including hormones, which promote growth; plastic pellets for roughage; urea or manure being added to feed; the use of mammal or poultry-derived by-products in the feed, including animal fats; and excessive or unnecessary use of dietary supplements. Animals must also be kept in healthy, low stress environments that allow for exercise and freedom of movement.⁷

There are very specific rules for the labeling of organic foods. These rules are set by the United States Department of Agriculture. In order to receive an organic food label, the food must meet production requirements and be overseen by a USDA National Organic Program-authorized certifying agent.



These production requirements include three limitations:

- (1) cannot use excluded methods (e.g. genetic engineering),
- (2) must use only allowable substances on the National List of Allowed and Prohibited Substances,
- (3) must be overseen by a USDA National Organic Program-authorized certifying agent that also follows all USDA organic regulations.⁸

Table 1 explains the differences between different organic labels approved by the USDA.



Table 1: Explaining the Approved Organic Seals⁸

Words allowed on packaging	“100% Organic”	“Organic”	“Made with Organic Ingredients”
Approved USDA seal			*Cannot show USDA Organic seal, but can list up to three organic ingredients or ingredient categories.
Specific regulations	<ul style="list-style-type: none"> · All ingredients must be certified organic. · Any processing aids must be organic. 	<ul style="list-style-type: none"> · All agricultural ingredients must be certified organic. · Up to five percent of the product may be non-organic ingredients allowed (excluding salt and water). 	<ul style="list-style-type: none"> · At least 70 percent of the product must be certified organic ingredients (excluding salt and water). · Non-agricultural products must be specifically allowed; additional agricultural ingredients must be produced without excluded methods determined by USDA.

Are there nutritional differences between conventional and organic foods?

Results from a recent survey showed that health motivation is the largest factor for choosing organic foods.² However, there is limited scientific evidence suggesting that organic foods are any healthier than conventionally grown foods.⁹

A selection of studies have suggested that organically grown produce provides more vitamin C, total antioxidants, mineral content, and omega-3 fatty acids.^{2,10}

Organic milk and meat has been shown to have different composition of fatty acids when compared to conventional counterparts.² Differences in fatty acid content include increases in alpha linoleic acid, omega-3 fatty acids, linoleic acid, eicosapentaenoic acid and docosahexaenoic acid.¹¹ One study reported higher levels of fat-soluble vitamins in organic milk when compared to conventional milk; another reported that organic milk has been found to have slightly lower concentrations of iodine and selenium.^{12,13}



While there is some evidence that there are some compositional differences between organic and conventionally grown foods, there is not sufficient evidence that these changes have any significant implication on human health, especially in a well-nourished population.^{2,14}

Is there a risk in consuming conventionally grown foods?

The belief that consuming conventionally grown foods carries risk started around the 1960s. For two decades prior, the now-banned pesticide DDT had been prevalent to increase crop yields and thought to be safe to vertebrates. However, as time continued, evidence of adverse effects to human health and the environment were discovered and the use of pesticides overall became a public concern. A study examining 2240 food items concluded that detected levels of pesticides in the diet were far below a level that would be of health concern.¹⁵ Overall, there is lacking evidence to suggest that there is risk to consume conventionally grown foods to humans.¹⁴

Are there health implications to consuming organic foods?

Some researchers have expressed concern that organically-produced milk is significantly lower in iodine than its conventional counterpart. This concern, however, has not been supported by scientific evidence as the difference does not have considerable health implications.¹⁶ There are also a number of studies reporting a higher level of bacterial contamination on organic produce due to the omission of synthetic pesticides.¹⁷

How can I properly clean fruits and vegetables?

To remove potentially pathogenic bacteria or any remaining pesticide residues from your produce, rinse all produce under running water. If the produce has a hard outer rind (like watermelon, squash, potatoes or melons), scrub the outside thoroughly with a brush.¹⁸ Experts recommend separating the outer layers of leafy vegetables before rinsing until you can't see any visible dirt.¹⁹

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