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Therapeutic Value of Organic Foods: A Review

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Abstract

The science of nutrition is currently transiting to organic age. Organic food consumption has become more popular and accepted in present-day scenario. The market for organic foods has boomed rapidly.

The present review is related to health benefits that could be attributed to the consumption of foods produced under organic farming method. Relevant papers were identified from Science Direct, Google Scholar and pubmed by using all combinations of the search terms related to health and organic foods.

Keywords: Organic foods; Conventional; Foods; Health.

Introduction

Organic food is believed to be better for health than conventional food. Research studies show that organic food is more nutritious and safe. Since more and more people started demanding for organically grown foods. Organic farming orchards have increased devoting to the supply of this new ever-growing market. The therapeutic value of organic diet pattern is also more recognized. Organic foods not only replenish the body with essential nutrients but also helps to eliminate toxic substances without introducing any toxins. The necessary issue behind success of organic foods is positive awareness by the users on health and allied problems.[1]

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The word organic farming suggests eco-friendly or natural technique of raising crops. The stone age men used this kind of natural farming without destroying the ecosystem. Organic cultivation means avoiding the use of chemicals, herbicides, fungicides, and pesticides instead the crops are raised on organic fossil manure.[2] Organic farming does not use bio–engineered or genetically modified methods of farming. A variety of crops in the open market such as fruits, vegetables, grains, dairy farm merchandise and meat are organically raised with farm manure. Organically mature foods keep fresh for long as they do not contain artificial flavors, preservatives, additives or colors. Organic foods will facilitate prolong longevity of human life. What is organic farming?[3]

The word "organic" refers to the method followed by farmers to grow and process agricultural products, dairy products and meat. Organic farming practices are designed to meet the following goals:

- Improve soil and water quality
- Decrease pollution
- Substantiate safe, healthy livestock habitats
- Enhance natural livestock behavior
- Propogate a self-sustaining cycle of resources on a farm

Materials or practices not permitted in organic farming include:

- Chemical fertilizers to enrich nutrients content of the soil
- Sewage sludge used as fertilizer
- Chemical pesticides for pest control
- High frequency rays to preserve food or to eliminate disease or pests
- Genetic engineering, methods to prevent

disease or insect resistance or to improve crop yields

- Use of antibiotics and growth factors for livestock

Organic crop farming materials or practices may include:[4]

- Agricultural waste left on fields (green manure), livestock manure or compost to improve soil quality
- Crop rotation to preserve soil quality and prevent cycles of pests or disease
- Use of crops that prevent land erosion when not in use and to plow into soil for improving soil quality
- Mulch to control weeds
- Insect traps or predatory insects to control pests
- Natural pesticides and a few synthetic pesticides approved for organic farming

Organic farming practices for livestock include:[4]

- Ventilated living conditions and access to the outdoors
- Green fodder feeding for at least 30 percent of livestock's nutritional needs during grazing season
- Organic foods for livestock
- Vaccinations

Safety of organic food to end user

Nutrients

Studies have shown little to moderate increase in some nutrients in organic foods. The simplest proof of a big increase is in some kinds of flavonoids, that have inhibitor properties.[5]

Worthington concluded after reviewing several studies and comparing the nutritional value of organically grown and conventionally grown fruits, vegetables, and grains, that there were significantly increased level of nutrients in crops raised by organic manure. There was an increase of 27% more vitamin C, 21.1% more iron, 29.3% more magnesium, and 13.6% more phosphorus. A 2008 report jointly produced by the organic center and professors from the University of Florida, department of Horticulture and Washington State University provides evidence that organic foods contain, on average, 25% higher concentration of 11 nutrients than their conventional counterparts.[6]

Omega-3 fatty acids. The feeding necessities for organic farm animal, like the use of grass and alfalfa for bovine, lead to usually higher levels of polyunsaturated fatty acid, a form of fat that's a lot of heart healthy than various other fats. These higher polyunsaturated fatty acids are found in organic meats, dairy farm and eggs.

According to a 2014 study published in the British Journal of Nutrition[7] the higher antioxidant levels in organic products might actually enhance its organoleptic qualities, its aroma, taste, and even the sensation in the mouth.

Research on organic milk has reported higher levels of antioxidants and beneficial fatty acids such as conjugated linoleic acid (CLA) and omega-3 fatty acids. A 2016 study in the British Journal of Nutrition also found that organic milk has less saturated fat than non-organic. Also, organically produced meat is leaner with healthier fat. A 2016 systematic review and meta-analysis found that organic meat had comparable or slightly lower levels of saturated fat and monounsaturated fat as conventional meat, but higher levels of both overall and *n*-3 polyunsaturated fatty acids.[8]

A study in Food Science and Nutrition Journal[9] found a higher amount beneficial omega-3 fatty acids in milk from grass-fed cows. The study drew on nearly 1,200 samples of milk and meat from grass-fed cattle collected over 3 years.

Organically raised meat and milk has higher levels of omega-3 fatty acids. These healthy fats are linked to heart health. It is also obtained from fat-rich fish, like salmon and mackerel. Research has shown that people who consume fish regularly are less likely to develop heart disease.

Toxic metals. Metallic element may be a poisonous chemical naturally found in soils and absorbed by plants. Studies have shown considerably lower metallic element levels in organic grains, however not fruits and vegetables, in comparison with conventionally full-grown crops. The lower metallic element levels in organic grains are also associated with the ban on artificial fertilizers in organic farming.

A 2014 meta-analysis of 343 studies on phytochemical composition found that organically grown crops had lower cadmium and pesticide residues, and 17% higher concentrations of polyphenols than conventionally grown crops.[10] Organic fruits and vegetables were found to contain moderately high phenolic compounds

Pesticide residues. Comparing conventionally grown foods organically raised foods has lower

detectable levels of chemical residue. Organic turn out could have residue due to pesticides approved for organic farming or due to environmental pesticides from standard farms. The distinction in health outcomes is unclear due to safety laws for maximum levels of residue allowed on standard turn out. The amount of nitrogen content in green leafy vegetables and tubers has been found to be lower in organically grown as compared to conventional foods.[11] When evaluating environmental toxins such as heavy metals, the USDA has noted that organically raised chicken may have lower arsenic levels. A 2014 review found lower concentrations of cadmium, particularly in organically grown grains.

Organophosphates are a class of pesticides that includes the common and toxic malathion and chlorpyrifos. A study published in 2015 Journal of Environmental Health Perspectives compared the concentrations of organophosphorus pesticides and their metabolites in children eating conventional vs. organic diets. The results found that diet is the primary route of exposure for certain types of pesticides, such as organophosphates. Switching to an organic diet decreases exposure substantially.

Bacteria: Meats created conventionally could have a better incidence of microorganism immune to antibiotic treatment. The risk of microorganism contamination of organic foods is that the same as standard foods.[12]

Organic food: Potential advantages to end user

1. They retains at least 50% of nutrients like vitamins and minerals than artificially grown food.
2. Not hazardous for health as they contain no chemicals. Hence lesser chances of getting allergies.
3. They taste more natural and delicious as no sweeteners, coloring, flavors and preservatives are added.
4. Organic food protects from cancer and other diseases.
5. Organic agriculture helps to keep our oceans, lakes, rivers and water supplies clean. In general the environment clean.

Conclusion

Consumers are not consistent in their interpretation of what is organic. While they understand the broad issues about organic foods, some do not understand the complexities and niceties of organic farming practices and organic food quality attributes. In an agricultural country like India with more than 70 per cent of land under agricultural side fresh organic farming with natural manure from farm animals can reduce tropical diseases like cancer and help in longevity of human lives.

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