

# Pro's and con's of organic farming

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Pick up any magazine at your local news stand, and you'll find some mention of "today's changing culture." Many Americans are said to be resisting the establishment.

Indeed, many people are turning back in time to rediscover a simpler, less stressful, and more basic lifestyle.

Many Americans, young and old, are seeking a closer harmony with a "natural," chemical-free environment. One channel that many use to demonstrate their new rebellion is through an invigorating interest in organic foods.

Their purpose seems to be to return to the lifestyle Mother Nature intended for us to follow.

The new interest in organic gardening is a reaction to the exposes of the deleterious effects of pesticides on animal life and the ecosystem. The possible damage to babies from high amounts of nitrate in food is another real, and emotional, issue that is linked to agricultural practices.

All chemical food additives are shunned because certain ones have been found to be hazardous to human health and have been banned by the government.

But what is this "organic food cult?" Just because a food is labeled "natural," should we buy it for our families because we believe it is more nutritious?

How does it differ from the food we traditionally see on our dinner table?

What is "organic" food?

Technically speaking, all food is organic since it is derived from living organisms.

"Organic" is a branch of chemistry dealing with carbon-based molecules that are synthesized by living things. All foods in nature contain carbon — thus, all are organic. Nutrients such as carbohydrate, protein, fat, and vitamins are all composed of carbon-containing molecules.

More descriptive terms referring to the foods that organic enthusiasts consume are "organically-grown," or "organically-processed." They refer to products obtained

without chemical fertilizer; without fumigants, fungicides, or herbicides,

without pesticides applied for insect control;

without preservatives, coloring agents, or any synthetic food additive;

fertilized only with organic matter (non-manufactured) and natural rock minerals.

Cattle, sheep, pigs, and poultry must be grazed on organically-grown pasture or fed organically-grown feed. Animals grown for meat must not be treated with antibiotics, hormones, or vaccines.

Acceptable organic fertilizers include dried cow manure, compost, limestone, sulfur, ground granite rock, and rock phosphate.

Any or all may be used, since no legal definition of "an organic fertilizer" exists; and only recently has a government agency begun to discuss the term's usage on food labels.

Consumer attitudes

A 1978 survey showed that 61 percent of the public believed that natural foods were better for you — this number was up by 19 percent from 1974. Twenty-eight percent said these foods were "different," but did not claim that "natural" meant more nutritious.

The belief in the benefits of a natural diet has spread nationwide. When asked what foods were natural, only products like fresh orange juice, fresh green beans, and mushrooms were strongly agreed on as being natural foods.

Although no change of state would have occurred, frozen orange juice and frozen beans were definitely off the "natural" list. Two-thirds of those interviewed felt that pasteurization, homogenization, and vitamin additives made milk, a product traditionally believed to be "the natural food," ineligible.

The organic food movement has become "big business" and is being viewed with a wary eye. Some experts say it is leading people to distrust the nation's food supply. Others say the movement is useful and has helped to increase public awareness of chemicals that have become regular ingredients of processed foods. The public has begun to read food labels.

A farm magazine has published articles analyzing the potential for organic farming. They concluded that organic farming is possible on a small scale as long as

prices remain high.

But there is no guarantee that the prices of organic foods will remain high. Furthermore, chances are great that the public may lose interest because of high prices and often fraud and misrepresentation.

Processed foods are provided for the consumer on the basis of convenience, quality, and sensory appeal. Most processed foods are priced higher than food in the raw state, but many are willing to pay that price in order to have their foods premixed, precut, preseasoned, and precooked.

However, not all processed foods are more expensive. Some are actually more economical to buy already fully prepared than to make them "from scratch."

To lower the high cost of the national food supply, the volume of production must be increased through economies of scale on the farm and large-scale processing plants. Waste is reduced by processing, which increases shelf life. Canned and frozen fruits, processed vegetables out-of-season, and baking mixes are usually less expensive than their fresh or unprocessed counterparts, even if these are available.

The organic food business is a small scale operation due to the constraints imposed by all "all-natural" concept.

Thus costs and prices seem likely to remain quite high. People who wonder about the possibility of adapting organic gardening in their own home garden should remember that it has some advantages and many limitations, depending on one's interpretation.

Nutrients in soils

Climate and location where grown, harvest time, storage, handling, variety, and genetic variable are all strong determinants of the food value of plants.

As plants grow, they draw upon the natural resources of the soil and take in nutrients, changing them to a form they can use for growth.

If a soil is deficient in one or more nutrients, the plant cannot grow well, but its content, such as protein, fat, carbohydrate, and vitamins, could be identical to that of a flourishing plant grown in rich soil. A deficient soil will result in lower yield, but the plant will not necessarily be less nutritious.

Scientific evidence shows no difference in nutrient composition between organically-grown produce and that grown under conventional methods using inorganic chemicals.

It is universally accepted that organic materials serving as fertilizers, such as manure, compost, and humus maintain organic matter content in soil. They improve the physical characteristics of soils, such as "tilth" or "looseness" of the soil, and help aerate the ground for good root respiration. They also increase the soil's capacity to hold water and nutrients.

As plants grow and are harvested, they remove a portion of the soil's nutrients. Plants obtain nutrients from the atmosphere, water, and soil. Soils deficient in nutrients do not provide or release them at an adequate rate to allow for efficient plant growth.

So most soils require some type of supplementation: for maximum yield and/or quality what has been removed from the soil by plants must be replenished.

At least 16 chemical elements are essential to plant growth. These are: carbon - sulfur - hydrogen - iron - oxygen - manganese - nitrogen - copper - phosphorus - boron - potassium - zinc - calcium - molybdenum - magnesium - and - chlorine.

Most non-manufactured fertilizers do not provide sufficient amounts of this growth-stimulating nutrient.

Another point of concern with the strict use of only organic fertilizers is that nitrogen becomes available for plants at different rates depending on its source and various other conditions

such as weather and temperature.

Urea, a pure organic nitrogen fertilizer, ammonium nitrate which has one half of the nitrogen in organic form, and ammonium sulfate which has all nitrogen in organic form, are much more rapidly available to plants than non-manufactured nitrogen-containing fertilizer.

For instance, in the same period of time, chemical fertilizers release 98 per cent of the nitrogen, while cow manure fertilizers release only 50 per cent.

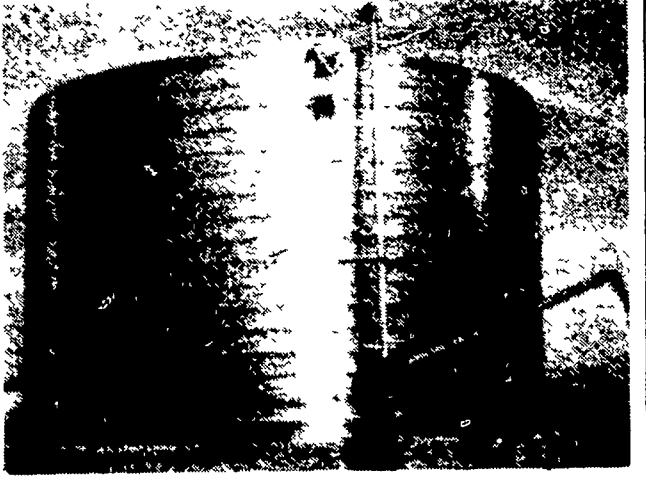
Nutrients must be in a soluble state in order to be used by plants. The nutrients of most commercial fertilizers are already in the form most available for uptake by the plant. Non-manufactured organic fertilizers must be converted by soil microorganisms into inorganic compounds.

However, some of the nutrients such as nitrogen and heavy metals, can be taken up in organic form. Once these are made available to and absorbed by the plant, their source — whether from animal waste or manufactured fertilizer — cannot be identified.

Is it more nutritious?

The claim of organic enthusiasts that "natural" fertilizers — manure and com-

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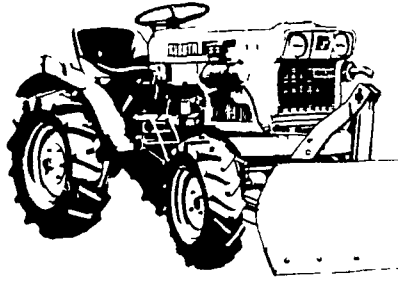
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