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The Organic Sprout

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Organic Fruits & Vegetables: Micro-Nutrient Superfoods?

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Many people grow or purchase organic foods to support more ecologically sustainable farming and gardening practices and to reduce their exposure to pesticides. ***Now there is convincing evidence that organic fruits and vegetables contain greater amounts of micronutrients that can have a direct impact on our health.*** These nutrients include not only the familiar vitamins and minerals, but also numerous plant secondary metabolites or phytochemicals, most of which appear to be biologically active in our bodies. Plants synthesize phytochemicals as a means to attract pollinators, repel pests and protect themselves from sunlight and other types of environmental stress. It is these phytochemicals that give fruits, herbs and vegetables their particular taste, flavor, color and, in some cases, medicinal properties. Plants make thousands of different phytochemicals and it is likely many more will be discovered as research continues. Intensive conventional agricultural practices may disrupt the production of phytochemicals in plants (1).

It is well established that a diet rich in a variety of fruits and vegetables offers protection from many common diseases, including cancer, heart disease, stroke, and diabetes (2,3). Since plant foods are our primary dietary sources of micronutrients (vitamins, minerals, and phytochemicals), current thinking has it that it is these phyto-nutrients that give plant foods their health benefits. Thus the micronutrient density of fruits and vegetables is important for disease prevention and this topic is currently receiving a lot of attention from researchers. Organic agriculture's "feed the soil" philosophy may be important in helping us to eat a more healthful diet. Recent data appears to validate the basic premise that organic agricultural management creates a healthy soil ecosystem that then supports the growth of healthy, nutrient dense and palatable crops. In contrast, the nutrient density of conventional crops has been decreasing over the last several decades (4).

Phytonutrients appear to play a key role in disease prevention.

Several studies have reported higher nutrient densities for organically grown produce in comparison to conventional. A ten-year long University of California study found significantly higher levels of two flavonoid phytochemicals (quercetin and kaempherol), vitamin C and sugars in organically grown tomatoes compared to those grown under conventional methods (5). Flavonoids have anti-oxidant and anti-inflammatory properties and there is evidence that they protect against diseases in which inflammation is known to play a role – cardiovascular disease, cancer, asthma and diabetes. A 2010 study compared the nutrient content of organic and conventional strawberries. The organic berries had higher antioxidant activity (many phytonutrients have anti-oxidant properties) and higher concentrations of vitamin C and flavonoid compounds. In taste tests the organic berries were preferred due to both taste (sweeter) and appearance (6). Similar results have been reported for blueberries, citrus, apples, plums, peaches, pears, potatoes and corn – all the organically grown crops had higher content of various phytonutrients and anti-oxidants (7). Anti-oxidants are important in that they protect our cells and genetic material from damage by ubiquitous free radical compounds. *(Continued on Pg 2)*

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Micro-Nutrient Superfoods?

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So why do organic fruits and vegetables contain more micronutrients? Slower plant growth under organic management (probably due to slow release forms of soil nitrogen) results in smaller plant size with more concentration of nutrients. In comparison conventional crops grow rapidly and synthesize more primary plant metabolites. Plants are known to synthesize more phytonutrients when they grow slowly and have more exposure to pests and environmental stress. Higher levels of soil micronutrients may also allow greater synthesis and accumulation of plant micronutrients. Reganold et al. (6) reported higher soil quality under organic management; this was based on measurements of higher microbial biomass and activity, greater enzymatic activity, higher amounts of soil micronutrients and higher total soil nitrogen and carbon.

References

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