NUTRITIONAL EFFICIENCY OF ORGANIC CROP PRODUCTION

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Abstract
Many studies exist in the literature that compare nutritionally relevant compounds in foods produced using organic as well as conventional methods (1-7). The present study evaluates the differences between the nutritional efficiency of organic crop production versus conventional production, and the overall effect of organic agriculture on food quality. A positive benefit of organic agriculture can be expected due to the achievement of a good ecological balance between soil, plants and animals, and also by the use of organic pesticides and fertilizers instead of synthetic ones (1) (2).

Organic crops when compared with conventional, are found to present higher levels of vitamin C, less nitrate, less total protein, higher levels of plant secondary metabolites (phytochemicals) and a higher proportion of essential amino acids in the protein (3). In most cases major importance has been given to the mineral composition of crops and organic production has a higher mean mineral content. In fact, figure 1 shows the mean percent additional mineral content in organic crops by mineral for some of these minerals. In addition, there may be less of the toxic heavy metals in organic crops than in conventional ones (4).

The above findings are in agreement also with a literature review conducted by the German government (5). It is also clear that the increasing diversity of crop species produced in an agricultural ecosystem will enhance nutritional adequacy and variety (6) (7).

Therefore, a balanced diet based on the greater variety and quality of organic products, could provide important nutritional benefits. However, further research is needed in order to better evaluate the positive effects of organic agriculture on the nutritional quality of diet, both in developing countries, where more variation in the diet is necessary, and in developed countries, where less additives and pesticide residues are required.

![Figure 1. Mean percent additional mineral content in organic compared to conventional crops (4).](image)

**Keywords:** minerals, nutritional efficiency, organic crops


