

Systematic review finds no difference in nutritional value of organic vs. conventional foods

Agriculture | Organic | 13 April 2010

Organically produced foodstuffs are not richer in vitamins and minerals than conventionally produced foodstuffs, conclude researchers in a systematic review published in September 2009 in the American Journal of Clinical Nutrition.

With many people believing that organic foods have a higher content of nutrients and thus are healthier than conventionally produced foods, demand for organic produce is on the rise. However, scientists have not been equally convinced that this is the case as the research conducted in the field has not shown consistent results.

In order to assess potential differences in nutrient content between organic and conventional foods, researchers at London School of Hygiene & Tropical Medicine, UK, performed a systematic review of the literature. In such a review, the available scientific literature on the subject of interest is screened and the outcomes of all articles meeting predefined quality criteria analysed in a systematic fashion. Based on the results from such analyses a general evidence-based conclusion can be drawn. In the present review, 162 relevant studies (published 1958-2008) on the content of nutrients and other substances in organic versus conventional foodstuffs were identified, and 55 of these were of satisfactory quality to be included in the review. Studies on both crops and livestock products were considered.

The results of the systematic review only showed a lower nitrogen and higher phosphorus content in organic produce compared to conventionally grown foodstuffs. Contents of the following nutrients or other substances did not differ between the two categories: vitamin C, calcium, potassium, total soluble solids, copper, iron, nitrates, manganese, ash, specific proteins, sodium, plant non-digestible carbohydrates, β -carotene and sulphur.

In an initial phase of the analysis, when all 162 papers were included independently of their quality, organic foods showed higher levels of phytochemicals than did conventionally produced foodstuffs. However, when the quality of the studies was taken into account such association could no longer be detected. The researchers speculate that the differences observed likely resulted from different harvesting times and the use of different fertilisers. They also stated that these differences are unlikely to be of any importance for human health.

In conclusion, organic and conventional foods appeared equal in terms of nutritional value. However, different production methods may give rise to other differences not addressed in this review, e.g. environmental aspects.

For more information:

1. [Dangour AD, Dodhia SK, Hayter A, Allen E, Lock K, Uauy R. \(2009\). Nutritional quality of organic foods: a systematic review. American Journal of Clinical Nutrition 90:680-5.](#)
2. [Podcast interview with A. Dangour, first author of the study - conducted by American Journal of Clinical Nutrition](#)
3. [Dangour et al. Report for the Food Standards Agency. Comparison of composition \(nutrients and other substances\) of organically and conventionally produced foodstuffs: a systematic review of the available literature.](#)