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### Organic tomatoes have more antioxidants

05 July 2007  
NewScientist.com news service  
Duncan Graham-Rowe

Is organic food healthier for you, after all? A 10-year study comparing organic tomatoes with those grown conventionally suggests that it may be. It's the kind of evidence that pro-organic groups have been desperate to dig up, as most studies have suggested otherwise.

According to the new findings, levels of the flavonoids quercetin and kaempferol were found to be on average 79 and 97 per cent higher, respectively, in organic tomatoes. Flavonoids such as these are known antioxidants and have been linked to reduced rates of cardiovascular disease, some forms of cancer and dementia, says Alyson Mitchell, a food chemist who led the research at the University of California, Davis.

Differences in soil quality, irrigation practices and the handling of harvested produce have made direct comparisons difficult in the past, says Mitchell. So in this study, due to be published in the *Journal of Agricultural and Food Chemistry*, the researchers used data from a long-term project in which standardised farming techniques are used to reveal trends in crop productivity.

Mitchell's team say the finding can be explained by the availability of nitrogen. Flavonoids are produced as a defence mechanism that can be triggered by nutrient deficiency. The inorganic nitrogen in conventional fertiliser is easily available to plants and so, the team suggests, the lower levels of flavonoids are probably caused by overfertilisation.

Previous research has found no differences between organic and conventional crops such as wheat or carrots. Meanwhile a study proclaiming that organic milk had higher levels of omega-3 fatty acids failed to convince the UK's Food Standards Agency (FSA), which pointed out that these short-chained fatty acids do not have the health-promoting benefits offered by long-chained omega-3 oils.

This latest study does not prove that a healthy diet must be organic. The evidence of health benefits for flavonoids is conflicting, says Peter Bramley at Royal Holloway, University of London. And even if such benefits exist, higher flavonoid levels do not necessarily make organic food healthier, says John Krebs, former chair of the FSA and now at the University of Oxford. "This depends on the relevance of the differences to the human body," he says. "Tomato ketchup has higher levels of lycopene than either organic or conventional tomatoes. So if you wanted lots of lycopene you should eat ketchup."

From issue 2611 of New Scientist magazine, 05 July 2007, page 16

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## Organic Tomatoes

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By Dan Pratt

Fri Aug 24 11:40:36 BST 2007

This is exciting news, despite the disclaimers in the last paragraph. While this study may not prove that an organic diet is "healthier" for the individual consumer, there is clear evidence showing that organic agriculture is healthier for the environment. The documented improvements in soil, water and air quality, as well as the greatly increased levels of biodiversity associated with organic agriculture are the real, measurable benefits, not just for the individual consumer, but for the entire planet.

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