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“Organic strawberries... sweeter in more ways than one”

Organic strawberry growers have always known they were on to a good thing, and now they have the science to back them up. In a recently published study from the US, which compared organically grown with conventionally grown strawberries, organic came up trumps in taste, nutrition, colour and longevity for shelf life.

Not only did the organic fruit come out on top, it was found the soil organic strawberries were grown in also benefited. The soil showed greater diversity and had *more total carbon and nitrogen, greater microbial biomass and activity, and higher concentrations of micronutrients*, (Reganold, 2010).

Twenty-six farms were chosen for the study with half being organically managed and half managed using conventional farming systems. The farms were all located in Watsonville, California, the principle strawberry area in the US. The organic fields had been certified (USDA) for more than five years which meant the impact of organic farming methods could be determined within the soil.

The fruit was tested for a range of things including the nutritional value, chemical analysis, anti-oxidant levels, weight, firmness and shelf life.

Analysis showed that organic strawberries had significantly higher total antioxidant activity which scientists believe can cut the incidents of cancer and heart disease, as well as other debilitating diseases. The strawberries were also anonymously tested for colour, taste and general appearance, and in these tests organic strawberries came out on top.

Soil quality was compared and the results again supported the belief that organic management of produce is a better choice for consumers and the environment. Organic soils were found to have more than 20% higher levels of carbon. This is consistent with findings of other studies including a 30 year study by the Rodale Institute which has shown that organic farming is potentially the single best means of mitigating climate change.

Interestingly organic soils had more than 30% higher levels of nitrogen without the use of synthetic nitrogen fertilisers which are used in conventional farming and are a serious concern for the environment. Levels of iron, boron, sodium and zinc were all also higher in the organic soils. The genetic diversity in organically managed soil was found to be significantly higher. *Greater functional gene diversity in organically managed soils suggests that organic systems may also support more stable or resilient ecosystem functioning*, (Reganold, 2010).

The study concluded, amongst other things, that organically grown strawberries are of greater nutritional value, are higher in anti-oxidants and longer lasting on the shelf. The soils managed organically have higher microbial biomass, greater genetic diversity and higher levels of carbon and nitrogen.

Dr Andrew Monk, Convenor of the BFA Standards Advisory Group, commented that another main factor for choosing organically grown strawberries was that strawberries have been identified as one of the fruits which harbour pesticides and fungicides, so fruit grown on conventional farms can contain chemical residue that does not rinse off when the fruit is washed.

‘The health and vitality of the fruit is a very important aspect of quality and also often nutritional status, with organic often being a denser, less watery fruit, due to the growing techniques. [They are] not being forced to grow faster via highly soluble nitrate based and other synthetic and soluble fertilizers,’ Dr Monk said.

BFA spokesperson and Director of BioLogic AgFood Dr Maarten Stapper said that one of the most important aspects of this study was that it was conducted on real farms rather than on a research station.

‘This means the study has a quality and depth to the results from commercial production systems which can’t be produced in a simulated environment. The study shows organic farming stimulates diversity and abundance of soil biology while conventional farming with fertilizers and chemicals diminishes soil biology. This study affirms that soil biology determines produce quality.’

‘While consumers may not be able to always physically see or taste the difference between organic and conventional fruit, the value is in the increased nutritional density of the organic fruit along with the obvious benefits to the environment,’ he said.

- Reganold et al (2010), *Fruit and Soil Quality of Organic and Conventional Strawberry Agroecosystems* www.plosone.org/article/info:doi/10.1371/journal.pone.0012346 (accessed 08.09.2010)

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