ORGANIC FOOD BITES BACK

The worm has turned: organic food is back in our shopping baskets. But is it any healthier than conventionally farmed produce? And why on earth does it cost so much? Luke Bell thinks we're worth it.

Centuries ago, before the developments of modern science and technology, our ancestors diet was 100% organic. Over the last century, however, our organic diet has gradually disappeared as farming has pursued short-term, high-yield methods. When you bite into an apple today, there is a good chance that it has been sprayed around 16 times with a cocktail of chemicals. The health consequences of ingesting these chemicals are still largely unknown, and many cannot be simply rinsed off with water.

There is a movement – an organic movement – fighting to put organic back into our diet. It seems somewhat ludicrous that we need a movement to encourage people to eat fresh local produce that has not been subjected to vast amounts of chemicals and pesticides. Surely, everyone would choose fresh, local produce straight from the ground over chemical-smothered, processed food? It seems not.

Why did organic farming die out?

Technological advances in biochemistry and engineering during the first half of the 20th century led to significant changes in the agricultural industry. The invention of the gasoline-powered internal combustion engine led to the mechanization of farming and the era of the tractor. World War II saw the use and mass production of ammonium nitrate for use in ammunition. It was an abundantly cheap source of nitrogen leading to the spread of nitrogen fertilizer in farming.

Pesticides used in the war to control disease-carrying insects among the troops were also applied to the agricultural industry at the end of the war, launching an era of widespread pesticide use. While these advances in biochemistry and engineering changed methods of farming, the rise in consumerism that continues today, was responsible for the continued research and mass funding into agricultural chemicals. The increasing demand for short-term, high-yield farming methods was a major contributor to the death of organic produce.

History of the organic movement

The death of organic farming in the developed world was becoming increasingly imminent during the first half of the 20th century. It was during this period that the organic movement began to form. As industrialized farming began to take over and the use of pesticides and chemical fertilizers became widespread, a few central figures began to speak out about changing agricultural trends. British botanist, Sir Albert Howard, is generally considered to be the founder of modern organic agriculture. He spent 26 years in India, directing a number of agricultural research centres before settling permanently back in England in 1931. It was at this point that Howard's contributions to organic agriculture began to take shape. In 1943 he published *An Agricultural Testament*, which is a renowned and influential book that included a concept that was to become one of the central foundations of organic farming – the importance of using available waste materials to build and maintain soil fertility. According to his "law of return", all organic waste materials, including sewage sludge, should be recycled back into farmland.

In his later years, Howard's ideas on soil fertility and disease gained him a reputation as an extremist. In 1946 he published *The War in Soil*, a radical book at the time that opened with the following critique of agricultural methods: "The war in the soil is the result of a conflict between the birthright of humanity – fresh food from fertile soil – and the profits of a section of Big Business in the shape of the manufacturers of artificial fertilizers and their satellite companies who produce poison sprays to protect crops."

Some seven years earlier, Lady Eve Balfour had launched the first scientific comparison of organic and conventional farming, known as the Haughley Experiment. She published *The Living Soil*, based on the initial findings, in 1943. It received wide recognition and led to the formation of a major international group of organic advocates who continue to spearhead the organic movement today: the Soil Association.

The Soil Association

I spoke with Clio Turton at the Soil Association, who described the growth and development of the group. "The Soil Association was

founded in 1946 and for the first 30 years was based on a farm in Suffolk, conducting research and building a membership base." Clio explained: "We've had a long list of achievements and success stories since then."

In the 1950s, the Soil Association's first annual conference made connections between soil fertility, the presence of trace elements and minerals, and human health. 50 years on, Ministry of Agriculture studies show a decline in minerals in UK fruit and vegetables of up to 76% since 1940.

In the 1960s, Soil Association standards were drawn up giving guidance on animal welfare, soil stewardship and food quality in farming. Today, the Soil Association standards for farmers and manufacturers require a thorough inspection and annual audit by European Union law.

In 1983, the Soil Association predicted serious consequences of using animal protein in feed for cattle and sheep. "The use of animal protein is an unnatural feeding cycle and could have serious harmful effects," it claimed. The Soil Association banned all use of animal protein in livestock feed on organic farms. Three years later, the first case of BSE was confirmed. The government inquiry into BSE, published in 2000, stated: "BSE developed into an epidemic as a consequence of an intensive farming practice – the recycling of animal protein in ruminant feed." There have been no recorded cases of BSE confirmed in any organic cattle reared on organic farms.

These are just some of the many achievements and contributions the Soil Association has made to farming practices over the years. Today, the organization is fully committed to encouraging the use of organic farming practices throughout the industry.

The organic movement today

During the last 20 years or so, organic produce has started to grab the limelight (organic limes of course!). Supermarkets began to stock organic food during the 1980s, bringing a new credibility to the movement and spreading the organic word. It wasn't until the government introduced the 1995 Organic Aid Scheme, however, that things really began to gather momentum. Clio explained the scheme's impact for the Soil Association: "We have really grown as an organization in the last 15 years. The 1995 Organic Aid Scheme finally provided government funding to help farmers convert to organic methods, and since then the Soil Association has grown year on year."

The media focus on climate change in the last 10 years, the rise in obesity, animal welfare and food industry scandals have all helped breed support for the organic movement. More and more consumers are now making the choice to eat and buy organic. However, as consumer demand has risen, organic produce has become big business, and questions are starting to be asked. In the last year or so, the organic movement has come under fire from various sectors. As always when large amounts of money are being made, some have begun to question the real motives behind promoting organic produce. Consumers have voiced concerns over the high prices placed on organic food, arguing that it makes an organic diet simply unaffordable for many families. Yet, the two biggest criticisms of the organic movement have come in the last year.

Criticisms

The first major criticism of the organic movement to arise was the claim that organic produce is no healthier than conventionally produced food. The Food Standards Agency (FSA) published a report on organic food in July, which claimed that there are no significant benefits to be gained from eating organic food. Dr Dangour, the principal author of the paper, said: "A small number of differences in nutrient content were found to exist between organically and conventionally produced crops and livestock, but these are unlikely to be of any public health relevance. Our review indicates that there is currently no evidence to support the selection of organically over conventionally produced foods on the basis of nutritional superiority."

The report was big news and has caused a real scandal in the organic movement. Yet, it appears there were a number of flaws in the research. The evidence used was extremely limited as the Soil Association's response indicates. The review only looked at

research papers with abstracts written in English, it excluded the results of more than half the papers it found, and it ignored more up-to-date research from the European Union, which was completed in April.

This research showed a very different set of conclusions, finding that levels of antioxidants, vitamins and glycosinolates were all higher in organic produce. Plus, healthy fatty acids like omega-3 were between 10% and 60% higher in organic dairy products and levels of vitamin C were as much as 90% higher in organic leafy vegetables. The FSA report also neglected to look into the effects of pesticides on human health. The British Medical Association states that some pesticides can be stored in our body's fatty tissues for years, raising concern about them being carcinogenic (cancer causing), mutagenic (causing birth defects) and neurotoxic (damaging to our nervous system).

There are a number of other problems with the FSA report that are highlighted in the Soil Association's response, which you can read in its entirety at www.soilassociation.org.

Can organic feed the world?

The second major criticism of the organic movement in recent times is the claim that organic agriculture cannot sustain the growing world population. Dennis Avery of Hudson Institute, Washington, claimed: "The world has only a small fraction of the organic manure needed to support food for today and into the future." Vaclav Smil of the University of Manitoba claims that an all-organic US would require the manure from an additional billion cows. That would force the clearing of between 4 and 6 billion acres of US forest to make room for their pasture.

While these criticisms are certainly something that will need considering, they are by no means fatal to the organic cause. Converting the global farming industry to organic methods is a major challenge and there are many problems that will need to be overcome if we are to achieve it. Thankfully, we human beings have the ability to think laterally and creatively, and work our way around problems rather than turning away at the first hurdle.

The Soil Association argues that organic farming can definitely feed the world but admits that it will require radical changes to our diet and farming systems. But, if we are to meet government targets for an 80% reduction in CO_2 emissions by 2050 then radical changes are certainly needed!

Permaculture consultant, Sarah Pugh, specializes in establishing methods that co-operate with nature. "A return to more mixed farming; ley systems, green manures and smaller intensive systems would have a positive impact on the situation," she explained. "Also, there's a huge potential for composting organic material for local use – currently an untapped resource as far as I know. Plus, there are cultural changes that could have a major impact. A reduction in the high levels of meat consumption in the country's diet would drastically cut our need for fodder crops. Also, we in the West waste at least 40% of the food we buy!" All this indicates that we have plenty of room for manoeuvre.

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There is also a further, more holistic argument for organic agriculture. Buying organic food promotes a healthy environment. Organic farms have on average 30% more species and 50% more wildlife like birds, butterflies and bees. *Compassion in World Farming* says that organic farming has the potential for the highest animal welfare standards.

Finally, there is one ultimate and unavoidable situation that all industrial agriculture will face in the very near future: rising oil prices. As cheap oil runs out, industrial farming will cease to be cost-effective and then farmers will have no choice but to turn to organic methods. So, why wait?