

FOCUS ON ORGANIC FOOD QUALITY - RESEARCH

Consumers, farmers, manufacturers, marketers and regulators often don't all want the same thing. But when it comes to organic food, they're all in agreement: we need more information confirming the health benefits of organic food. So how is the industry rising to the challenge of providing a compelling body of credible evidence documenting tangible benefits to organic consumers? One of the world's most active members of this research effort, nutritionist Shane Heaton, tells all...

By SHANE HEATON

Organic consumers want confirmation of their belief that organic food is better for you. Regulators want validation of claims made for organics, and legislators want to know how much support should be given to this method of agriculture. Farmers and manufacturers want to know how solid the food quality argument is for their produce, and the industry as a whole needs to validate the consumer belief that supports the growth in organic sales. Everybody wants more. So where are we now, where are we going, and how will we get there?

CURRENT KNOWLEDGE

In 2001 I published a major review of the scientific evidence on organic food for the Soil Association in the UK: Organic Farming, Food Quality and Human Health (1). After carefully sifting through all the available evidence for two years I concluded that "Collectively, the available valid scientific evidence supports the view that organically produced foods are significantly different in terms of food safety, nutrient content and nu-

tritional value." The full 87-page report with over 400 references is now available in Australia from the BFA (via www.bfa.com.au) and I invite anyone interested in this issue to examine the evidence for themselves.

The key differences I identified were that organic foods contained fewer pesticide residues, fewer food additives, no BSE, lower nitrate levels, no GMO's, no greater risk of food poisoning, less water and more nutrients including vitamin C, minerals and phytonutrients, and resulted in better health outcomes in animal feeding trials. Several other reviews in the last six years, in the US, France, New Zealand, Germany, the UK and Denmark, have all have been rather more cautious in their conclusions because they failed to exclude studies using poor methodologies (2-6). And there are lots of poor quality studies, so if you don't exclude them, the picture becomes pretty confused.

Given this situation, there is no consensus on the differences between organic and non-

organic foods, and those hostile to organic food and farming have asserted that this is proof there isn't any difference. There ARE differences, but we need to know more about their nature, magnitude and significance to human health. One thing's for sure: there has been more than enough analysis of the existing research. What we need now is new research.

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THE GOOD, THE BAD AND THE UGLY

I'm happy to say that the organic sector and research community are answering the calls for more research and there are now quite frequent publications of relevant papers comparing organic and non-organic food. But the industry needs to carefully assess each new study, whatever its outcome - either positive or negative - because just like all the research done previously, the quality of new research varies considerably. Unfortunately, peer review is no guarantee of quality or relevance. ▶



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Take for example the Scottish study comparing organic and non-organic tinned soups (7). The organic soups had six times more salicylic acid than the conventional soups, but one six thousandth of that found in one aspirin tablet. Salicylic acid varies considerably between different varieties of the same crop, and analysing tinned soups with differing recipes is just asking for trouble. Or how about the American study claiming 30% higher vitamin C in organic oranges? (8). By weight this was true, but by orange the opposite could have been said, because the non-organic oranges were more than twice the size of the organic ones. The researchers had failed to control some of the most basic influences on vitamin C content, such as variety, ripeness and size. Never the less, this study got a lot of media attention in the US and elsewhere.

It's not all bad. There's good research confirming higher levels of vitamins, minerals and phytonutrients in organic produce (9-11). Detecting health benefits from the consumption of organic food remains problematic though.

French researcher Patrick Borel recently completed a study in which he found higher nutrient contents in organic tomatoes and tomato puree, but no detectible health difference between human volunteers who ate 100g of either organic or non-organic tomato puree per day for three weeks (11). He measured their fasting plasma antioxidant status (16 hours after their last meal), despite researchers elsewhere showing that plasma antioxidant capacity increases for 2-3 hours after an antioxidant-rich meal is eaten, then begins declining after about 6 hours (12). The effect is probably completely gone after 16 hours, and that is when Borel took his blood samples. As you can see, organic food quality research isn't easy!

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RESEARCH EFFORTS: HOME AND AWAY

Here in Australia, the organic industry is working hard to establish an Organic Co-operative Research Council (see Andy Monk's article in AOJ 54). An Australian

Organic CRC would mean that industry investment would be matched by government funding. More than \$100 million would be invested over seven years to research and promote organic food and farming in a structured way, opening opportunities and establishing skills and technologies that would assist in the development of the organic market.

The Australian organic industry is not alone in recognising that funding and structure is urgently needed in the area of food quality research linking organic food and better health. In Europe the International Research Association for Organic Food Quality & Health was launched in February this year as a collaboration between four existing research institutes in Switzerland, the Netherlands, Denmark and Germany. Looking predominantly at the health effects of organic food, the research is being focussed on holistic assessments of food quality (beyond what is currently scientifically accepted) and feeding trials to confirm the health benefits of eating organically.

In June, The International Society of Organic Agriculture Research (ISO FAR) was founded in Germany by 100 researchers from all over the world, including agrono-

mists, social economists, veterinary surgeons and dieticians.

In the United States, the Organic Trade Association (OTA) has established the Centre for Organic Education and Promotion to gather, commission, fund and disseminate research plus communicate tangible benefits to organic consumers and facilitating fact-based marketing claims. The Centre was officially launched in May at the OTA annual conference "All Things Organic" in Austin, Texas. Also in the US, the Organic Crop Improvement Association, one of their leading certifiers, has just created a new Research and Education department focusing on consumer education, research, crop improvement and promotion.

THE BOTTOM LINE

The organic industry faces some considerable research challenges if it is to build consensus though a compelling body of credible evidence. There is thus a need for considerable cooperation and coordination among researchers, the organic industry, marketers and others. All of this costs lots of money and without the necessary funding, it won't happen. The time this needs to start happening, is now. Positive evidence is emerging, and the demand for information from all sectors is growing rapidly. For my part, I believe the investment will be worthwhile.

Marian Nestle, chairwoman of the department of nutrition, food studies and public health at New York University agrees. "I don't think there's any question" she says, "that as more research is done, it's going to become increasingly apparent that organic food is healthier". I couldn't agree more. ■

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About the author

Shane Heaton practices as a nutritionist and consults on organic food quality research around the world.

Shane brings a wealth of experience, having consulted to one of the world's largest organic certifiers and promotional bodies, the Soil Association in the United Kingdom.

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