

Pesticides & You

Focus on Organic Food Quality by Food Nutritionist Shane Heaton

By SHANE HEATON

If Hippocrates was serious when he said "Let food be thy medicine", the medical oath to 'first do no harm' is under serious threat. Pesticide residues in foods are regulated and tested, of course, but is it enough? Organic advocates are always going on about the dangers of pesticide residues, saying they cause cancer and other diseases. But is there any evidence to support these claims, or are they just trying to scare people into buying their products?

It's well established that the more fruit and vegetables we eat, the lower our risk of heart disease and some cancers. This is often put forward as evidence that residues on food do us no harm. It came as a surprise to many then that recently released Hawaiian research, following 8000 people for 34 years, found that the higher the consumption of fruit and juice, the greater the risk of Parkinson's disease. The researchers speculated that the increased risk may be due to pesticides rather than the fruit itself.

But could it really be pesticides? Pesticides are 'rigorously' tested for safety before gaining approval for use, regulators assert. However this safety testing is done on individual pesticides acting alone, and as we usually eat more than one food at a time we're exposed to many different pesticides simultaneously - known as the 'cocktail effect'. While the US National Academy of Science concluded in its report on diet and cancer that "there is no epidemiological evidence to suggest that pesticides individually make a greater contribution to the risk of human cancer", they also conceded that "the possibility that they may act synergistically and thereby create a greater carcinogenic risk cannot be excluded."

Those with high exposures to pesticides, for example farm workers, have been found to have higher incidences of cancer (including stomach, prostate, brain and skin) and an in-

"Until we have a more complete understanding of pesticide toxicity, the benefit of the doubt should be awarded to protecting the environment, the worker and the consumer - this precautionary approach is necessary because the data on risk to human health from exposure to pesticides are incomplete."

British Medical Association

crease in genetic damage was observed in Danish greenhouse workers handling plants that had been treated with any of 50 different compounds. The US Environmental Protection Agency (EPA) ranks pesticide residues among the top three environmental cancer risks.

But what about dietary exposure to pesticide residues? Linking low-level exposure over decades to something we can't see with ill health decades down the track is difficult to say the least. Many suspect the strongest

evidence for harm is in hormone disruption. Pesticides mimic the hormone oestrogen, potentially disrupting the fine hormonal balance in our bodies, and may be why incidences of hormone-related cancers such as breast, prostate, ovarian and testicular cancers are all on the increase. A recent study by Belgian toxicologist Dr Charles Charlier in the Journal of Occupational and Environmental Medicine found that women diagnosed with breast cancer were six to nine times more likely to have the pesticides DDT or hexachlorobenzene in their bloodstreams compared to women who did not have breast cancer.

Children are more susceptible to toxins than adults, with their immature detoxification and immune systems, still developing organs and brains, and a larger intake of food per kilo of body weight than adults. Researchers at the University of Washington showed, in a ▶



Susan Carr is just one of a growing number of consumers choosing organic options to ensure they are not consuming pesticides - because they simply don't know enough about them



About the author

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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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study of 39 two to five-year olds, that children eating a predominantly organic diet had one-sixth the level of a particular pesticide metabolite in their urine compared to those children eating predominantly non-organic food. They concluded that consuming organic food "lowered exposure from above to below Environmental Protection Agency guidance levels of safety, thus reducing the risk of harm from uncertain to negligible."

"People are applying the precautionary principle to their own lives by purchasing food that has not been produced by industrial methods. From the simple stance of hazard avoidance, organically produced food is the best option that we have."

Dr Vyvyan Howard (Toxico-Pathologist), University of Liverpool.

So we know that pesticides find their way into our bodies, and that they're lower in organic produce. These two points are not generally contested. What IS contested, is whether these residues have any health implications. A recent study in the US showed how rural midwestern men with high amounts of the pesticide diazinon and herbicides alachlor and atrazine in their urine are far more likely than men with lower levels to have abnormal (diluted, deformed and sluggish) sperm.

A landmark paper showing the subtle yet highly disturbing effects of pesticides on children was published in 1998 by Elizabeth Guillette and colleagues, in which she used anthropological and standard pediatric assessments of children to assess the impact of pesticide residues from food and the environment on their health.

She compared children in two nearby isolated villages in Mexico, one in which pesticides were routinely used in their farming, and one in which they were not. Everything else was the same between these two villages - genes, diet, lifestyle, climate, culture, etc. To assess the childrens' cognitive development she measured eye-hand coordination, short-term memory, and the ability to draw a person. These are standard anthropological assessment tools.

What she found was an impaired cognitive development in the children in the village that routinely used pesticides, as demonstrated by these efforts by four and five-year olds to draw a person. The drawings on the left are by four

and five year olds from the village in the foothills, where pesticides aren't used, while those on the right are by children of the same age from the village in the valley, where children are exposed to pesticide residues in their diet, homes and the environment.

But if pesticides persist in the environment, polluting the air, water and soil, can we really avoid them? The answer, in my opinion, is that you just do the best you can. Official

data in Australia and elsewhere confirms that

organic produce consistently contains less than a third of the residues of conventional produce.

While the debate goes on about the safety or toxicity of pesticide residues in food, one thing is clear: While uncertainty persists, consumers who wish to minimise their dietary pesticide exposure can do so with confidence by buying organically grown foods. I've said it before and I'll say it again: Organic food represents an important safe haven in an increasingly polluted world. *It's not a luxury. It is how food is supposed to be.* ■

The first two articles in this series

All reference documents and articles are listed on the website www.bfa.com.au

