

## REVIEW

Katherine Wilson  
In Defence of Food  
By Michael Pollan  
Allen Lane, \$32.95

Genetic Roulette  
By Jeffrey M. Smith  
Gene Ethics \$28.95

"Eat food." It's the first commandment in Michael Pollan's manifesto, *In Defence of Food* - but the message isn't simple. Pollan is talking about the stuff that has been savoured for centuries, not the "edible food-like substances" on supermarket shelves. Will products fortified with iron and Omega-3 really make you healthier? Is the factory-farmed produce valued by the kilo (not by flavour or nutrient value) really the biochemical equivalent of organic produce? Do low-fat, low-carb diets really prevent people gaining weight? Are margarines marketed with Heart Foundation ticks really better for your heart than butter?

The tangle of bad science and politics that guide our food choices is cleverly untwisted by Pollan, whose thesis is largely credited to Melbourne science sociologist Gyorgy Scrinis. Scrinis coined the term 'nutritionism' - an ideology which reduces foods to the sum of its nutrient parts. "People don't eat nutrients; they eat food, and foods can behave very differently from the nutrients they contain."

In the '70s, when it was observed that a whole grain diet was linked with good health, fibre was identified as the hero, and value-added to food products. Now we know an interaction of nutrient and fibre properties is responsible for whole grain's health benefits. Similarly, the anti-carcinogenic properties of fresh fruit and vegetables far outweigh those of anti-oxidant vitamin tablets. Eating greens, fish or pastured (not grain-fed) beef might give you far more Omega-3 benefit than any food product to which lashings of Omega-3 is added.

But an ideology of nutritionism has misled the Australian government to pass laws on mandatory fortification of our bread and flour with folic acid, argues Pollan.

He explains what Americans call the 'French paradox'. The reasons the French are famously lean even though their diets are heavy in fats and sugars are cultural. So, too, are the reasons Americans are famously obese. *In Defence of Food* offers an intriguing understanding of why age-old cultural practices based on sheer pleasure of eating can offer greater health benefits than faddish food science.

In Australia, scientists are deeply divided on the safety of genetically modified (GM) foods - yet these foods are no more 'science' than soft drinks are 'science'. They are patented, biotechnology products.

Are these products safe? The Victorian and New South Wales governments says yes, other states say not necessarily, and Jeffrey Smith, who heads the Institute for Responsible Technology and directs its Campaign for Healthier Eating in America, says no. Just as Victoria lifted its ban on GM food crops, a move applauded by chief scientists, Smith released *Genetic Roulette: the documented health risks of genetically engineered foods*.

Smith documents journal studies, government reports, leaked industry research, lawsuits and scientists' testimonials. Safety standards, he contends, rest on outdated assumptions that GM foods are equivalent to conventional foods.

Yet the process of engineering even one gene trait "produces hundreds of thousands of mutations throughout the DNA". These can create novel proteins and toxic by-products in food.

In the UK, rats fed GM potatoes suffered damaged organs and immune responses. In a CSIRO study, peas engineered with a bean gene provoked an "allergy-type inflammation response" in mice.

UK soy allergies skyrocketed after GM soy was introduced there in 1999. Smith documents evidence of a causal link, and reports allergy specialist Dr John Boyles saying soy is now "so dangerous that I tell people never to eat it-unless it says organic." A known 'cross-reactivity' between GM soy proteins and peanut proteins might account for the coinciding steep rise in nut allergies, speculates Smith.

Epidemiologist Dr Judy Carman says GM food hasn't been around long enough to map long-term health effects, and flawed analysis led agencies to prematurely deem it safe. "On the contrary," she tells Smith, "[careful analysis] provides evidence that GM crops may be harmful to health."

Most studies in the book are preliminary; some less convincing than others. Given the choice between GM and non-GM feed, wild and domestic animals avoid GM.

More persuasive are reports of precancerous cell growth in mice; greater risks for children; transgenes transferring to human gut bacteria; and livestock sterility and deaths after feeding on GM cotton, with compensation from GM companies. When, in a reviewed study, GM soy was fed to rats as part of their diet, their pups' growth was stunted and they died at higher rates than the control groups fed conventional soy. Pro-GM scientists are asking the same question as Smith: why haven't these results been repeated?

Replication requires political will, funds, and sound experiment design. In Smith's book, nutritionist and biochemist Dr Rosemary Stanton explains that GM regulators don't require independent testing. "Independent researchers find it almost impossible to get GM seed to carry out safety checks and any farmer who buys seed is forbidden to allow it to be used for research purposes." Smith documents "creative ways" industry-sponsored studies

"avoid finding problems" that rigorous independent tests find.

*Genetic Roulette* is published by Gene Ethics, lobbyist for labelling, bans and rigorous testing. A disclosure: my family supports Gene Ethics, but owns biotechnology shares. Many scientists who support GM for medical research (in which health risks are acknowledged) warn against its use in food.

"The difference," writes Stanton, "is that medical products have a benefit, are tested before release, and their use is restricted and contained. GM foods, on the other hand, get minimal testing... there are definite signs that GM foods are not safe."

Pollan might argue that they're not food at all.