



The cover says that CSIRO's diet is "scientifically proven", but this is being disputed by some scientists.

dreams returned with a stream of follow-up press stories and interviews that put their scientists on the defensive.

The principal author of the diet, Dr Manny Noakes of CSIRO Health Sciences and Nutrition, countered that the diet was based on extensive research conducted by CSIRO and others. Noakes claimed in an interview with *Australasian Science* (October 2005, p.37) that the one published study that Stanton and Scrinis referred to was only part of the research used, and was initially publicly funded. "We did a lot of research before we spoke with industry, and we approached them rather than them approaching us," Noakes said. The work was "done at arms length" from the commercial sponsors, and ethics committees had checked it.

In defending the scientific soundness of their diet, CSIRO scientists have depended heavily on a paper published in the June 2005 edition of the *American Journal of Clinical Nutrition* (AJCN) in which 100 obese women (less 24 who dropped out over the 12 weeks) ate either a high-protein diet or a high-carbohydrate diet. While both groups lost an average of 4 kg over 12 weeks, women with high triglyceride levels lost 8 kg on the high-protein diet compared with 6 kg for the high-carb diet. Fat loss was 6 kg (protein) compared with 3 kg (carbohydrate).

Nature Gags on CSIRO Diet

Controversy over whether *The CSIRO Total Wellbeing Diet* is "scientifically proven" has gone international, but the national research agency is answering the criticisms selectively. Peter Pockley reports.

After 5 years of mostly bad press since CSIRO's Chief Executive, Dr Geoff Garrett, began a massive restructuring of the national research agency, there was relief in Head Office from the burgeoning sales and positive PR arising from *The CSIRO Total Wellbeing Diet*.

However, a crack emerged when Dr Rosemary Stanton, a respected dietician and Honorary Fellow of the University of UNSW, and Dr Gyorgy Scrinis of RMIT University's Global Institute, alleged several failings of CSIRO research comparing high-protein and high-carbohydrate diets. "The results of this narrowly framed and rather loaded research study was that both trial groups actually lost a statistically comparable amount of weight over 12

weeks," they wrote in *Australasian Science* (October 2005, pp.37-38). "Any diet that recommends a kilojoule-restricted food intake is going to 'work', at least for a while.

"The CSIRO's research was partly funded by Meat and Livestock Australia and Dairy Australia, so it is no surprise that beef, lamb and dairy products figure so highly in the recommended meals and weekly meal plans. The CSIRO's endorsement of a high-meat diet is an indication of the extent to which its scientists have taken on the role of consultants to industry."

The cracks widened to a fissure just before Christmas when *Nature*, the pre-eminent global journal of original science, published a critical news report and stinging editorial. CSIRO's bad

A recipe for trouble

A prestigious research agency should have thought twice before attaching its name to a diet book.

Giving up a diet is a popular new-year's resolution. This year, a diet book penned by researchers in Australia is set to come up in many Christmas stockings. But its message may well damage the reputation of Australia's premier research institution (see page 166).

The diet book in question is by no means ground-breaking. Its high-protein message is not that different from others that have drifted into fashion in the past few years. But the name lends the badge of Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO).

In some parts of the world, it might seem odd that a book of this nature is published. But CSIRO — which runs Australia's main network of government laboratories — has an unusually good public reputation. It is widely regarded as an eminent national institution. Its history, including its pivotal role in the development of agriculture and mining in Australia, has left a strong impression that it knows how to put science to good use.

But the commercial success of the book, which hooked literary Peter and The Dr. Mike Gair off the national bestseller perch, is intriguing to scientists and the public alike.

The benefits of a high-protein diet remain a hot topic of debate among nutritionists. But even some of those who oppose such a diet wonder whether it should rely as heavily on meat as this one

does, given the health risks associated with high meat consumption. But what really makes the book critics is the way it is being marketed. There's something decidedly unsavoury about using the phrase 'scientifically proven' to sell anything to a trusting public, particularly with large sums of books being sold. The diet is also being promoted as being beneficial for everyone, whereas the published research indicates that it is superior to other diets only for a subpopulation of overweight women with symptoms of metabolic dysfunction.

Furthermore, the research behind the book was largely funded by the meat and dairy industries, whose products feature prominently in the diet. Dietitians say that this aspect should have been more explicitly recognised, instead of being listed in the book's acknowledgments. The authors insist that the sponsors had no influence on the book's content, but the impression remains of a conflict of interest.

To be fair, the book was not the idea of the researchers or even CSIRO's management. It came from a well-known animal production who spotted an opportunity with CSIRO, which has its own publishing arm, only keeps a small percentage of the profits in the form of royalties on the book's research division.

Defenders of the book will argue that its success illustrates how to translate research into an accessible and popular format for public consumption. But that argument does not justify CSIRO giving permission for its name to be used in a way that could ultimately blur its hard-earned reputation. ■

"There's something decidedly unsavoury about using the phrase 'scientifically proven' to sell anything to the public, yet this is writ large on the book's front cover"

The *Nature* editorial.

However, the CSIRO scientists and publicists never mentioned that the AJCN also carried a sobering editorial by Prof James Hill of the University of Colorado's Center for Human Nutrition. Hill exposed a wide scientific debate over high-protein diets that CSIRO has tried not to admit, asking: "Can high-protein diets be maintained permanently?... The study by Noakes *et al.* is a good start in addressing this question, but we must invest in long-term research studies to obtain a definitive answer."

In a Letter to the Editor of the AJCN in November 2005, Clifton and Noakes were circumspect towards their scientific peers, admitting that "the high-fat, high-protein diet was an experimental diet to answer this question and not necessarily one we would recommend for long-term use". There has been no hint of this qualification in their conclusive claims to the public.

"A Recipe for Trouble"

Nature's editorial on 22 December thundered: "A prestigious research agency should have thought twice before attaching its name to a diet book. There's something decidedly unsavoury about using the phrase 'scientifically proven' to sell anything to the public, yet this is writ large on the book's front cover.

"The diet book in question is by no means ground-breaking. Its high-protein message is not that different from others that have drifted into fashion in the past few years.

"But even some of those who approve of such a diet question whether it should rely as heavily on meat as this one does, given the health risks associated with high meat consumption."

In an accompanying news report, Dr Patrick Holford, founder of the UK Institute for Optimum Nutrition, said that maintaining a high-protein diet could elevate the risks of breast and prostate cancer, stress the kidneys and adversely affect bone mass. "I think it is dangerous long-term," he told *Nature*.

In the same report Dr Jim Mann of the University of Otago

in New Zealand said: "The hype goes beyond what the research proves".

In his role as spokesman for Nutrition Australia, Dr Tim Crowe of Deakin University told ABC News Online (29 December) that CSIRO's research has failed to adequately compare diets high in meat-based protein with diets high in plant-based protein.

Yet the CSIRO persisted with its claims. A media release issued on 9 January began: "CSIRO stands by *The CSIRO Total Wellbeing Diet* which is based on a number of scientific trials, and is scientifically proven". Dr Alastair Robertson, Group Executive of Agribusiness and Health, said that critics of the diet were "grandstanding".

But CSIRO soon showed that it was feeling the heat of multi-faceted criticisms and starting to modify its absolutism when co-researcher and co-author of the book, Dr Peter Clifton, acknowledged in a letter to *Nature* on 19 January: "There may be disagreement about whether the words 'scientifically proven' should be used to sell books". CSIRO had not declared this to Australians, including purchasers of the book.

Having contributed herself to the formulation of government dietary guidelines, Stanton asked Health Minister, Tony Abbott, to "take seriously the potential problems inherent in a government-related agency pushing a high meat diet as the solution to obesity". In a fax to *Australasian Science*, Abbott endorsed the government's guidelines, which recommend consumption of 65–100 grams of lean red meat three to four times per week. CSIRO's diet sets down at least 800 grams and at least 400 grams of fish per week.

On 16 January Stanton published a major review of the international scientific literature on diet and obesity in the *Medical Journal of Australia*. She began: "Publicity which is given prematurely to results of small or preliminary studies may present a distorted picture, often implying a simple quick-fix solution for complex problems". While CSIRO claims to have been prominent in the field, none of its papers were among the 34 studies cited by Stanton.

The manner and content of the centrally controlled public presentation of CSIRO's case are opening windows on the inner workings of an organisation on edge. CSIRO has put its erstwhile reputation at risk by eroding its standards of research through claims that the diet is "scientifically proven".

CSIRO now needs to explain its standards of scientific proof, especially as this application of science relates to everyone and is not high technology that the public can barely comprehend.

To be widely applicable in Australia and beyond, studies will need to cover the long-term effects of the diet and test substantially greater samples. Failing that, CSIRO should eat humble pie and openly modify its claims until there is wide consensus on its current diet or its inevitable variations.