



# Ozone

**Brad Collis** recounts one man's crusade against the desperate addicts of methyl bromide.

Dr Jonathan Banks, as chair of the UN's Methyl Bromide Technical Options Committee, was instrumental in achieving global agreement on the phasing out of methyl bromide, despite the dirty tactics of manufacturers and users.

Many times during the past year, CSIRO chemist Dr Jonathan Banks yearned for the peaceful vista of his high-country orchard near Canberra. The orchard offered a welcome sanctuary from the battle between the US chemicals and farm lobby and the environmental lobby trying to rid the world of the last major ozone-depleting chemical, methyl bromide. But instead he stood resolute amid the crossfire, against an onslaught that at its height included attacks on his professional integrity.

The reason for the ferocity of what was dubbed 'the last great ozone battle' was that unlike the already banned chlorofluorocarbons (CFCs), methyl bromide has no simple commercial substitute. Its manufacturers and users weren't going to surrender without a fight, despite the US Clean Air Act having listed methyl bromide as among those substances that 'cause such grave damage to the Earth's protective ozone layer that their costs to society (in terms of human health and environmental degradation) far outweigh any potential benefit or short-term profit'.

And so, the hirsute CSIRO scientist with family ties to 18th century botanist Sir Joseph Banks, became somewhat of a *cause celebre*, particularly among the environmental movement in the US.

Methyl bromide is a fumigant used for sterilising soil against insect and fungal pests in the horticulture and floriculture industries. It is 'quick and deadly', but rated as 50 times more damaging to ozone than chlorine from CFCs.

It was added to the Montreal Protocol in 1995 as an ozone-depleting substance that should be phased out, but under

accused of overstating the ability of methyl bromide users to find alternative forms of pest control. He was also accused of ignoring the concerns of other scientists who claimed methyl bromide was essential for effective food production.

The chemical's future came down to two weeks of heated debate in Montreal last September, where Banks argued there were no excuses for keeping methyl bromide in use, while others pushed a 'millions will die of starvation' scenario if the chemical was banned.

The pro-methyl bromide lobby also claimed the scientific community had failed to establish the role of methyl bromide in ozone depletion, and that methyl bromide was a critical part of integrated pest management programs and its loss could reduce food supplies. It also attacked Banks' assertions on alternatives.

Banks – a man not easily stirred to anger – seethed. He was upset at the dismissive attitude towards the comprehensive research showing the chemical's impact on the ozone layer. He also pointed out that the main users of methyl bromide were producers of luxury food products such as strawberry and tomato growers – hardly the producers of staple foods for the world's hungry.

The methyl bromide debate was highly polarised. At one point Banks' detractors accused him in a letter to *New Scientist* of making an 'overt effort' to mislead parties to the Montreal Protocol about the availability of substitutes. Two weeks later, he was awarded the Stratosphere Ozone Protection Award by the US Environment Protection Authority in recognition of 'the difficulty of the process (of removing

tiring of the issue, knowing a much bigger battle was looming – the political response to climate change.'

And he understood his opponents' stance. 'Companies supported the phase-out of CFCs because they had a ready substitute: HCFCs (hydrofluorocarbons),' Banks says. 'Their profits weren't at risk. But there is no single product replacement for methyl bromide.'

'The alternatives are varied, according to each situation. One alternative, for example, is steam fumigation. Other alternatives include changes in cultivation practices, biological control agents, plant breeding and the use of controlled atmospheres using nitrogen and carbon dioxide, nearly always in combination, not single treatments or 'magic bullets'.'

The alternatives are more complex, requiring integrated pest management strategies, which in turn require better farm management.

Nonetheless, Banks and the proponents of methyl bromide controls did triumph. The September talks ended with 160 nations, including Australia, agreeing to fully phase-out methyl bromide and even speed up its removal from 2010 to 2005. For the first time since methyl bromide's future came under discussion in the early 1990s, the phase-out was extended to cover developing nations, which will have until 2015 to cease its use.

Many already have, including developing countries such as Colombia, a large flower exporter, and Indonesia. The Netherlands banned methyl bromide in 1992 because of its toxicity and fears it was leaching into groundwater. The European Union also had already decided to phase out methyl bromide by 2005.

In Australia, the Federal Government responded to the Montreal decision by announcing a National Methyl Bromide Response Strategy to help horticultural industries meet the phase-out timetable.

Banks, who says he filled his passport during the methyl bromide campaign, is now taking a break; making use of long-service leave to put the politics behind and to tend his beloved orchard.

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# warrior

pressure from chemicals and agricultural groups, the decision was set down for review in September 1997.

Most countries, including Australia, had by last year begun phasing out the chemical, but manufacturers and users, alarmed by the prospect of losing methyl bromide, launched a fierce campaign to retain it.

Banks, who was chair of the United Nations Environmental Program's methyl bromide technical options committee, was

methyl bromide from use) and of the need to continue to pursue the cause'.

This he did, but was stung by the hostility of the opposition. 'It was my first time in a political war and I was astonished at the way misinformation was so carefully orchestrated,' Banks says.

'It became a dirty fight by desperate people. There were very stringent controls on the table at Montreal, and for both sides it was the last chance – the last great ozone battle – because governments were