

NATURAL-BORN WEEDKILLERS

Bioproducts are being blocked even as chemicals face resistance

CHRIS RAY

Australia's farmers spend more than \$1.5 billion a year on chemical herbicides to kill weeds. Herbicides rarely destroy seeds and their repeated use has given Australia the world's worst herbicide resistance problem, with many products now ineffective, according to the CSIRO.

Despite this, the Australian Pesticides and Veterinary Medicines Authority has blocked and delayed the sale of non-toxic biological controls for some of Australia's worst weeds.

The APVMA's product registration system is tailored to chemicals and its staff lack experience in assessing biological alternatives, critics say.

In 2012, University of Queensland scientists unveiled Australia's first homegrown commercial bioherbicide to kill the introduced parkinsonia prickly bush, which has spread across northern Australia. Branded as Di-Bak, the bioherbicide contains native fungi that selectively destroy parkinsonia's seeds.

BioHerbicides Australia, a company part-owned by UQ, applied for APVMA registration of Di-Bak in 2012, after eight years of trials at 150-plus locations. The product has reached final approval stage only now, despite legislated timeframes that require the APVMA to finalise the most complex applications within 18 to 25 months.

"We assumed the process would be relatively straightforward, given that our product is basically composed of native fungi," BHA's managing director Peter Riikonen says.

However, the APVMA's mindset and systems are very much chemical-oriented and they had never dealt with a biological weedkiller before ours. I have sat across the table from the APVMA many times. They have very little functional knowledge of soil biology and the behaviour of native fungi, and have been reluctant to make a decision to approve this innovative product.

Riikonen says BHA spent more than \$500,000 on the application and the delay had cost it more than \$1 million a year in lost sales.

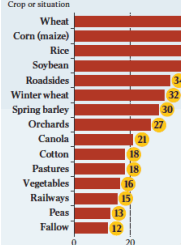
"Every time we responded to a request for additional information and data, they referred our response to appointed experts, which often resulted in requests for additional studies or evidence in a circular process which gained little forward traction," he says.

"There is a great unmet demand for non-chemical solutions from farmers, Landcare groups, councils and national parks. Our bioherbicide is environmentally safe and a lot cheaper in the long run because you don't have to apply repeat treatments, as you do with chemicals. It is ridiculous that a biological agent should have to be registered as a chemical product through the APVMA."

A spokesperson for the APVMA — which was moved from Canberra to Armidale in the NSW northern tablelands at the behest of local member Barnaby Joyce — says the BHA application is "a complex and requires multiple efficacy and environmental assessments".

Resistance to chemical herbicides is on the rise. There are 255 species of herbicide-resistant weeds globally, according to the collaborative International Survey of Herbicide Resistant Weeds. Its website says weeds have become resistant to 25 of the 26 known herbicide sites of action and to 163 herbicides. Herbicide

BITTER HARVEST



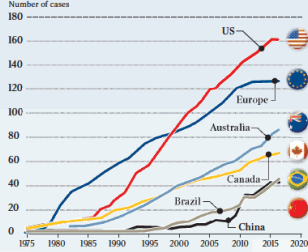
FUNDING THE HERBICIDE REGULATOR

APVMA 2016-17

Income source	Income (\$'000s)	%
Receipts from industry	5368	15.40
Levies	17022	48.83
Annual fees	6736	19.32
Other receipts from industry	955	2.74
Parliamentary appropriation	4744	13.61
Other revenue	38	0.10
Total income	34,863	

Source: Woodhouse.org

GLOBAL GROWTH



Giant Parramatta grass infected with Nigrospora fungus



NSW farmers Cathy Eggert and Jeremy Bradley with dogs Parra Trooper

'Ticking time bomb' for agriculture as chemicals go under microscope

A Senate investigation of the agency that regulates agricultural chemicals in Australia will also put the world's biggest selling weed killer, glyphosate, under scrutiny.

Federal Labor said this week it would make a Senate inquiry into the independence and effectiveness of the Australian Pesticides and Veterinary Medicines Authority.

Opposition agriculture spokesman Joel Fitzgibbon said an ABC Four Corners program and other reports questioning the authority's regulation of glyphosate use highlighted the need for a strong and independent regulator.

"Our inquiry will consider

the effectiveness and responsiveness of the APVMA's processes for reviewing agricultural chemicals, including glyphosate," Fitzgibbon said.

Labor's move follows a call by Council Australia for an independent health study of glyphosate, which the APVMA maintains is safe if used according to label directions.

Glyphosate-based herbicides including the best-known brand, Roundup, have underpinned big increases in crop yields, including Australia's grain harvests, since the 1980s. Glyphosate is common in backyard sheds and on supermarket shelves across the country.

However, safety concerns have grown since the World Health Organisation's International Agency for Research on Cancer found it to be "probably carcinogenic to humans" in 2015. Other studies have found no link between glyphosate and cancer.

The EU narrowly voted to grant Roundup a further five-year lease last year — well short of the 15 years sought by the manufacturer Monsanto.

More than 1.3 million people signed a petition to ban the product in the lead-up to the vote.

Recent court rulings in the US and Brazil have gone against the Bayer company, which owns Monsanto. They include a

California court judgment awarding \$US289 million (\$405m) to school groundsman Dewane Johnson, who blamed Roundup for his terminal non-Hodgkin's lymphoma.

Australia's major farm lobbies and federal Agriculture and Water Resources Minister David Littleproud have backed the APVMA's continuing endorsement of glyphosate.

"I am confident the APVMA is competent and independent," Littleproud said this week.

The authority gets most of its funding from product registration fees and has been criticised for its indulgent policing of chemical companies.

For instance, the APVMA does not require suppliers of

defective farm and veterinary chemicals to publicise product recalls. And it has allowed companies to decide if and when the authority can publish a recall on its website.

The APVMA this week insisted its reliance on industry funding "bears no influence on our independent regulatory activities".

Sydney Institute for Agriculture director Alex McBratney says it's time for Australia "to look beyond glyphosate".

He predicts safety concerns and political pressure will result in glyphosate-based herbicides eventually being restricted or banned, starting in Europe.

And there is mounting concern that more weeds are adapting and building resistance to the chemical.

"We need to start putting money towards development of a new generation of herbicides and learn to use less herbicides with new technologies," McBratney says.

"This is a ticking time bomb. It is unsafe to rely on one chemical that is fairly crucial for the whole world's food system, especially crops traded internationally such as grains in Australia and soy beans and corn in the Americas.

"But if we banned it tomorrow the world would be in a hell of a state in terms of food production."

resistant weeds have been reported in 92 crops in 70 countries. Meanwhile, the APVMA has ordered cattle farmer Jeremy Bradley to stop advertising and selling a native fungus that kills giant Parramatta grass, an introduced weed that has degraded east coast pasture.

Yet the NSW Department of Primary Industries advocates use of the same fungus Bradley sold from his Hastings Valley property on the state's mid-north coast.

For decades, farmers have struggled to rid their paddocks of

GPG by using herbicides such as glyphosate, the active ingredient in the popular but increasingly contentious weedkiller Roundup.

Several years ago, DPI researchers led by agronomist David Officer discovered that the fungus *Nigrospora oryzae* caused lethal crown rot in GPG. Officer advised farmers to dig up diseased plants and relocate them to spread *nigrospora*, and councils started to transplant infected plants along roadways. Bradley, who has won two Australian government Land-

care awards for his innovative use of fungi to improve soil health, set out to develop a concentrated source of *nigrospora* that could be mixed with water and sprayed on paddocks.

He and his wife, Cathy Eggert, experimented for four years and invested their life savings of \$150,000 before succeeding in breeding the fungus, which they sold in bags under the Parra Trooper label.

Last year the APVMA told Bradley he could not sell Parra Trooper unless it was registered as

a chemical product. The authority said that under the Agricultural and Veterinary Chemicals Code, the definition of a chemical product "includes the effect of modifying the physiology of a pest plant so to inhibit its natural development, for example by initiating/promoting crown rot in giant Parramatta grass".

Bradley says he cannot afford expensive APVMA product tests designed for chemicals rather than biological agents.

"It is absurd that a native organism naturally present in our paddocks is treated the same as a synthetic toxic chemical."

Bradley's federal MP, the Nationals' member for Lynne David Gillespie, says he has used Parra Trooper to kill GPG on his own cattle property and made unsuccessful representations to the APVMA on Bradley's behalf.

"The APVMA said that because he (Bradley) has put a label on it and put claims about the product on the packet, then under the regulations it is treated as a chemical," Gillespie says. "I said to them (APVMA), it's a technical fine point, for goodness sake, get real. I respect your authority but it's an endemic fungus which Bradley is expanding the spread of to control a problem weed."

Out of the shadow

The 2018 Outlook Conference taking place in Melbourne, hosted by The Australian and the Melbourne Institute, is obviously a serious and important affair, featuring speeches by Scott Morrison and Bill Shorten. But it's not without jokes. Introducing himself yesterday, Christopher Eyles-Guy Bowen noted that he was making his fifth appearance at the conference as opposition Treasury spokesman. "And I'm hoping it's my last appearance as shadow treasurer," he said, before hastily assuring the crowd that no, no, it wasn't that he didn't want to be invited back. "I'm hoping to be back next year in a different capacity," he said, cheerily. Treasurer Bowen, joking,

Stability, Italian style

That said, the real highlight of yesterday's conference was an address by Peter Costello, who really let fly at the Coalition. No, he said, it's not the 24-hour media cycle, it's not the hostile Senate, it's not the recalcitrant crossbenchers, it's the sheer inability of anyone to articulate an agenda that is holding the government back. "You have to tell people what you want to do," the former treasurer said, adding that in his day it was crystal clear what the Coalition stood for: taxes that were lower, not higher; government that was small, not big; competition that was good, not bad; and budgets in surplus, not deficit. Costello also had a joke up his sleeve: just recently, he

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used to illustrate a story about brokers being caught out making anti-Semitic remarks about "Diamond" Joe Gattick, not by email but on the phone. Also, he could hardly believe that 20 years on, that picture, seen here, was still in use, as fresh as if it were just taken. Greenblatt should ask

Grammatian gripes

Annabel Crabb is as mild-mannered a person as it's possible to be, except when it comes to grammar. Chief among things that get her goat? According to her tweets yesterday: "inventing words that don't exist" and "making adjectives into nouns. Looking at you, chicken tenders." That last prompted one wag to



respond: "Actually Annabel, 'chicken tenders' is perfectly OK. These were the smaller boats that went out to collect the chickens from the bigger boats." Ha ha! But her tweets also prompted a flood of responses from frustrated grammarians. According to pictures posted yesterday, the University of Western Australia has banners up that read: "Pursue Impossible." Tasmania's tourism slogan is "Feed Your Curious". Murdoch University's new slogan is "Free Your Think." What next, Get Educated?

amused this week to see said picture illustrating a story in The Australian Financial Review about why it's always best to use the phone, not email, when having a juicy conversation, not least because the picture originally was

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Caroline Overington

Strength!

Reporter recycled

Grammatian gripes

A toast to book covers