

Major herbicide research effort enters new phase

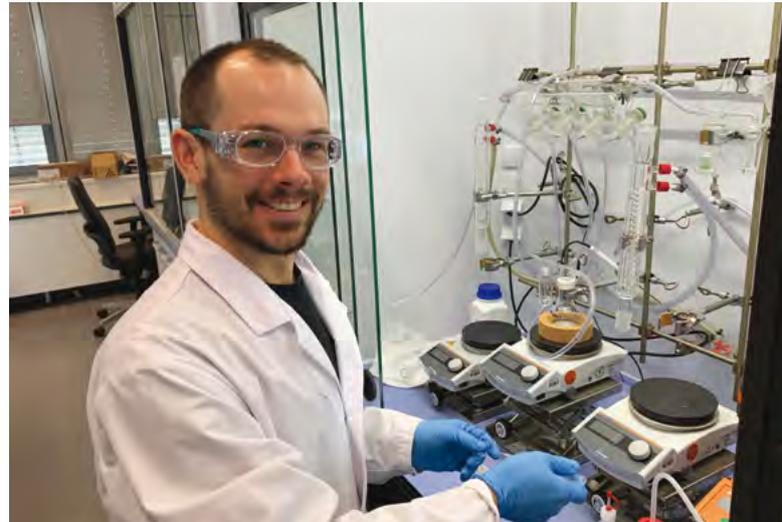
A MAJOR international collaboration aimed at developing innovative weed management solutions for Australian grain growers will enter a new phase of discovery.

The Grains Research and Development Corporation (GRDC) and the Crop Science division of Bayer have announced that the Herbicide Innovation Partnership (HIP) would be extended for another four years to 2025.

The partnership was formed in 2015 and since then the private-public collaboration has delivered promising results in the identification of a number of chemistry candidates for new sustainable modes of action. HIP's major objective is to provide Australian growers with new technologies to manage herbicide resistance and support the sustainability of modern crop production systems for decades to come.

Weeds cost Australian grain growers almost \$3.3 billion per annum, and Australia has the second highest number of herbicide resistance weeds in the world, sitting just behind the United States. Weeds are the single most important reason for crop losses globally, causing high management costs and threatening food security.

GRDC Acting General Manager Crop Protection, Biosecurity and Regulation, Ken Young, says the focus of research under HIP is to discover selective herbicides that target weeds of Australian importance in broadacre crops.



Dr Reece Crocker, postdoctoral researcher from Perth, WA, working in Frankfurt, Germany through the GRDC-Bayer Herbicide Innovation Partnership. (PHOTO: Bayer)

"HIP was initiated in 2015 in response to Australian grower needs and increasing prevalence of herbicide resistance reducing the efficacy of current products, and the ongoing threat of



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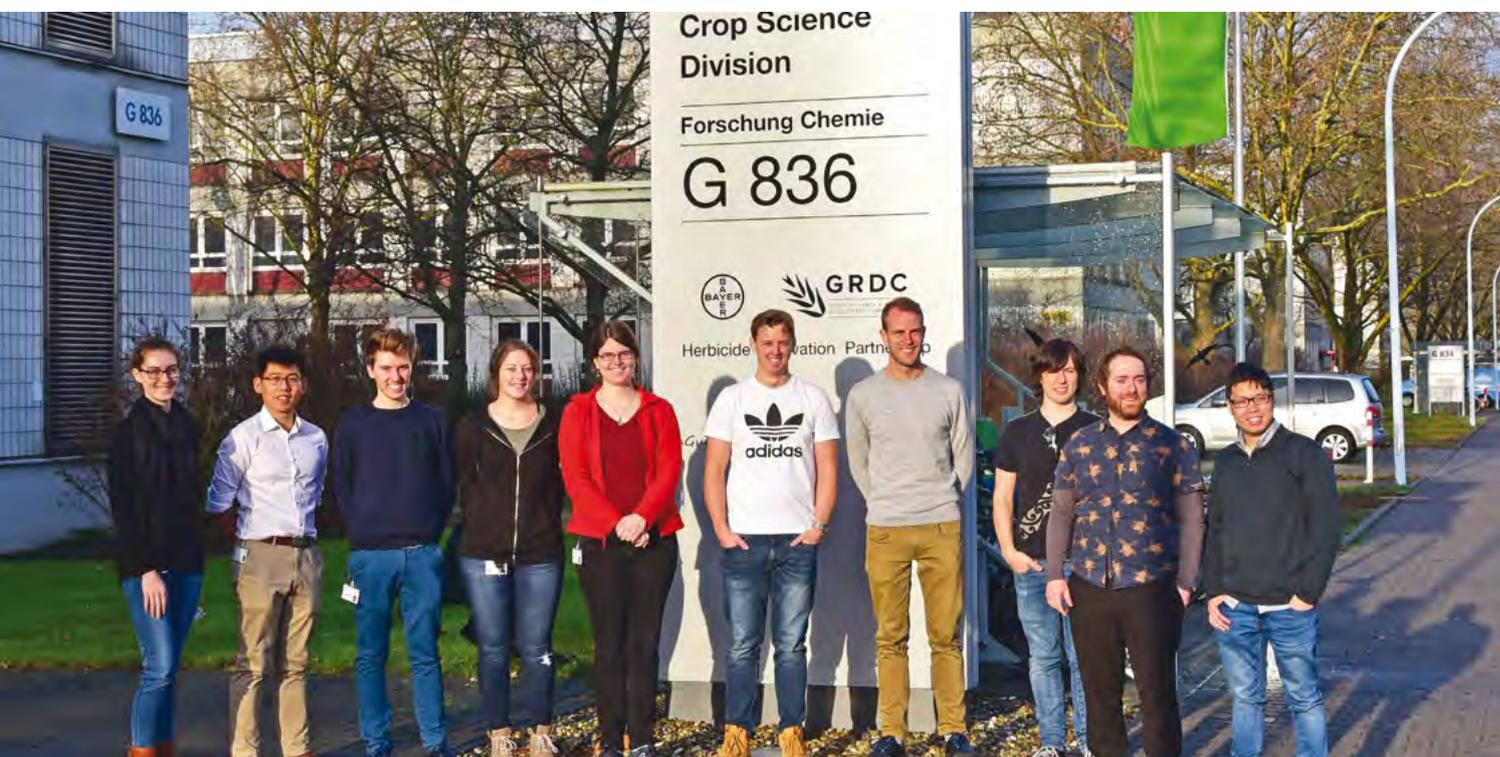


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A second cohort of postdoctoral researchers working at Bayer's global centre of excellence for weed control research in Frankfurt, Germany, as part of the Herbicide Innovation Partnership. (PHOTO: Bayer)

product removal due to changing local and global regulatory standards," Ken says.

"The GRDC was also cognisant of the slow pace of innovation in global herbicide discovery, and particularly innovative new resistance-busting modes of action.

"These factors remain a priority for Australian growers and are arguably more pressing now than five years ago when the HIP collaboration was initiated."

The four-year extension of HIP, agreed to in principle several months ago but only just finalised, will entail an additional \$36m GRDC investment.

Ken says the objectives of the HIP collaboration are long term, as it takes a minimum of 10–12 years to bring any compound through the pipeline to commercial development.

"However, progress to date has been significant and the HIP investment has developed a strong early-stage pipeline of herbicide field candidates to deliver new weed control technology to Australian growers, providing both partners with the impetus and confidence to invest for a further four years," he says.

"With GRDC's investment in this partnership, there is a concerted commercial research program focused on sustainable weed management technologies specifically for Australia."

Ken says the HIP initiative complements the GRDC's broad portfolio of investments in integrated weed management, ensuring growers are equipped with the technologies, tools and tactics – including physical, biological and cultural – required to combat weeds and herbicide resistance.

Bayer Australia Managing Director, Joerg Ellmanns, says the partnership with the GRDC puts Australian growers at the next frontier of the development of new molecules while cultivating capability and capacity for the nation's grains industry.

"The Herbicide Innovation Partnership between Bayer and the GRDC places Australian weed species at the centre of discovery for the next generation of sustainable weed control," Joerg says.

"We are delighted to invest in the future of Australian

agriculture together. As the leading global crop science company, we are dedicating infrastructure and people at our centre of excellence for weed control research in Frankfurt, Germany, supporting the development of a herbicide pipeline that aims to provide Australian agriculture with solutions to manage weeds.

"The GRDC investment on behalf of Australian growers has contributed to our scientists synthesising several tens of thousands of new molecules for laboratory and greenhouse testing, and several of these have progressed to the stage of readiness for Australian and international field testing – an important first step in the process of the field evaluation of candidates with potential for commercial development."

HIP phase two will involve a continued focus on the search for new modes of action, along with field testing at various global locations, including Australia, to ensure efficacy under Australian conditions.

A total of 12 Australian weeds are subject to testing by Bayer under glasshouse conditions, while additional species are taken into account within field testing in Australia.

A secondary aim of the partnership is fostering education within Australia in the area of industrial research techniques and herbicide research and development.

Joerg says 34 postdoctoral positions have been employed through the program to date – the majority of which have been filled by young Australian scientists – providing professional training in world-class laboratories in Germany while working on Australian-focused outcomes.

The second phase of HIP will involve at least two cohorts of 11 postdoctoral students. The expectation is most of these will come from Australia.

"The overall joint investment is about future-proofing the industry, tackling the growing challenge of weed resistance and management, and creating lasting positive change for Australia's grains industry," Joerg says.