

Research prompts increase to recommended mouse bait rates

A NEW research investment by the GRDC, led by Australia's national science agency, CSIRO, has enabled evidence-based increases to zinc phosphide (ZnP) mouse baits that will help grain growers battling above-average mouse numbers in eastern Australia.

ZnP-coated wheat bait is the only registered in-crop rodenticide for the management of mice damage in broad-scale agriculture in Australia. The new Australian Pesticides and Veterinary Authority (APVMA) emergency use permit increases the concentration of zinc phosphide active per wheat grain from 25 to 50 mg per kg.

The bait will still be applied on-farm at one kilogram per hectare but will have twice as much ZnP on each grain, increasing the likelihood of a mouse consuming a lethal dose in a single feed.

This GRDC/CSIRO research is the first laboratory-based wild house mouse bait efficacy study done in Australia since the chemical was registered for agricultural use around 20 years ago.

Industry body Grain Producers Australia (GPA) applied for the APVMA emergency use permit based on the research outcomes.

New bait lethal to all mice

CSIRO researcher, Steve Henry, who led the study said the lab findings showed the bait prepared at this new mixing rate was lethal in all mice while the previous bait mixing rates was only lethal in 50 per cent of mice.

"It is critical that every grain of bait represents a lethal dose," Steve said.

"Our lab research has shown that mice rapidly develop aversion to the bait, meaning that if they do not consume a lethal dose from one grain of bait, they will not consume any more toxic grain."

GRDC Pests Manager, Leigh Nelson, said the increase in bait mixing concentration was expected to be well received by industry, especially as many growers in eastern Australia were currently battling high mouse numbers ahead of winter crop planting.

Leigh said current farming practices that conserved water



GRDC researcher, Leigh Nelson, says the increase in bait mixing concentration will be well received.

and were environmentally sustainable, such as minimum or zero tillage, had resulted in a significant increase in both available shelter and alternative food sources for mice.

"Mouse management requires an integrated approach and a key part of this is the reduction of alternative food sources, such as grain being left in the paddock post-harvest. This residual grain greatly reduces the probability of a mouse encountering and consuming a treated grain," she said.

"So even with the increased bait mixing concentration, growers will still need to ensure they implement best practice tactics on farm for effective mouse control."

The successful permit application comes in the wake of two emergency permit approvals from the APVMA in recent weeks approving additional uses of ZnP for mouse control. One of these permits (PER90846) will allow growers to apply 25 g ZnP per kg of grain bait products at 1 kg per hectare to bare ground prior to planting. Growers have previously required some ground cover to apply bait. The other permit (PER90793) will allow growers to apply 25 g ZnP per kg of grain bait products at rates of 3 to 5 kg per hectare to protect crops sown into stubbles or thick ground cover.

Leigh said GRDC and CSIRO would continue to undertake research to inform and improve grain growers' management decisions and options for mouse control.

The efficacy research produced consistent, scientifically rigorous results and followed the Organisation for Economic Co-operation and Development (OECD) guidelines and was approved by a CSIRO Animal Ethics Committee.

Latest information on Mouse Management is available at <https://grdc.com.au/resources-and-publications/resources/mouse-control>.

For more information on the APVMA zinc phosphide/mice permit (PER90799) go to Agricultural And Veterinary Permits Search – portal.apvma.gov.au



Successful mouse management requires integrated strategies.