







Issue 14 Landcare Research

Manaaki Whenua

Monitoring mice in Australia – October 2017

Summary

- High populations of mice in Mallee and Wimmera, Victoria (Figure • 1) - Numbers are high for this time of year. Mice are causing some damage to growing crops but baiting appears to be effective.
- Moderate populations of mice in Yorke and Eyre Peninsulas, South . Australian Mallee and Southern NSW (Figure 1) - Mice are causing some damage to growing crops. Baiting appears to be effective.
- Mouse abundance remains low in all other regions (Figure 1). •
- Growers should actively monitor mouse activity and look for signs of mouse damage (chewed tillers; nodes and pods in canola and pulses). \rightarrow If mouse population high: Consider application of bait now (beware of 2 week withholding period).

 \rightarrow If mouse population low-moderate: Continue to be vigilant (watching brief).

- Communicate with your local bait supplier to understand supply time-frames and help decide if you need to prepurchase bait. Crops can't be treated with bait within 14 days of harvesting beginning (withholding period).
- Please continue to use MouseAlert. Please report and map mouse activity using MouseAlert (www.mousealert.org.au) so other growers can see what mouse activity is being observed in their neighbourhood. Follow on twitter using @MouseAlert.

Current situation

Mouse abundance is high across parts of Victoria and moderate in Eyre and Yorke Peninsulas, South Australian mallee, and southern NSW. Mouse abundance remains relatively low across all other monitoring sites (Figure 1). Mice have caused some damage to growing plants, but zinc phosphide has been generally effective in reducing damage. Breeding started in early spring and mouse numbers will increase through summer into autumn. Growers should check for mouse activity in their own paddocks using mouse chew cards (active burrow counts not effective at this time of year because of dense crop cover). Mouse damage to growing plants (ie damage to tillers and/or heads) will be evident. Any damage at this stage will reduce yield. Please continue to report activity on MouseAlert.

South Australia: Mouse abundance is moderate in Eyre and Yorke Peninsulas and South Australian Mallee (Figure 2). Mouse numbers have declined in North Adelaide Plains to low numbers. Damage reported to canola pods and maturing wheat. Trap success at Mallala (north of Adelaide) was 1% in September (low). Because of this unexplained variability, growers are advised to monitor across multiple paddocks to gauge mouse numbers and inform their management decisions.



Victoria: Mouse abundance is moderate to high in all locations. Mouse numbers are high across Mallee and Wimmera regions (Figure 2) and moderate in other areas, but patchy. Trap success was 35% in September (density estimates of 60-80 mice/ha) which is relatively high for this time of year. Growers should remain vigilant and act accordingly if damage is likely. Because of this unexplained variability between paddocks, growers are advised to monitor across multiple paddocks to gauge mouse numbers and inform their management decisions.



- <u>Queensland</u>: Mouse activity remains low: Live trapping, chew cards and active burrows were all nil in monitoring conducted in September (Goondiwindi and Darling Downs regions). Isolated damage to chickpeas near Dalby but successfully baited. Mice are not likely to be a problem, but if growers observe any activity, they should report it on *MouseAlert*.
- <u>Northern, Central & Southern NSW</u>: Mouse numbers are moderate in Southern NSW and low in Central & Northern locations. There is activity on maturing wheat around Coleambally and some baiting near Wagga Wagga. Because of this unexplained variability, growers are advised to monitor across multiple paddocks to gauge mouse numbers and inform their management decisions. Mouse activity was low in Central West (a few cards chewed) and very low around Moree. Data for Central NSW were collected as part of the CWFS "Rain Grain and Stubble" GRDC project.
- <u>Western Australia</u>: Mouse activity is low in all locations. Ravensthorpe and Geraldton: Nil or low activity reported (a few cards with chews and evidence of a few holes). No baiting.

The 'Mouse Forecast'

Northwest Victoria: There is a moderate likelihood of an outbreak in autumn 2018. Model predictions are variable because of uncertainty about Oct-Dec rainfall.

- If Oct-Dec rainfall is low, then mouse abundance will be 80 mice/ha (outbreak probability of 0.12).
- If Oct-Dec rainfall is average, then mouse abundance will be 100 mice/ha (outbreak probability of 0.23).
- If Oct-Dec rainfall is high, then mouse abundance will be 140 mice/ha (outbreak probability of 0.39).

The model will be re-run in December 2017 to estimate the likelihood of an outbreak in autumn 2018.

Central Darling Downs (QLD): The density index for the mouse population is currently very low (<1%), but are likely to increase to moderate levels. The probabilities for May 2018 are High (0.09), **Moderate (0.60),** Low (0.28) and Very Low (0.02). The Darling Downs model has achieved a 78% success rate from these long-term predictions over the period of 1989 to 2003.

Future activities

The next scheduled monitoring is set for autumn 2018. Please continue to report mouse farm (presence and abundance on your absence!) using *MouseAlert* (www.mousealert.org.au) on your smart phone, tablet or computer and to check what other mouse activity is being reported locally and regionally. There are now 550 records. We welcome any information at any time. You can also follow progress on Twitter (@MouseAlert). You can now download the App for MouseAlert from iTunes app store or Google play (click on hyperlink to download). MouseAlert Smartphone app



Background

This is an update on surveillance of mice across the grain-belt of Australia for September/October 2017. Mouse populations were monitored in typical grains farming systems in WA, SA, Vic, NSW and Qld during early spring 2017 (September/October). The monitoring provides data on the size (abundance) of mouse populations, their breeding status and overall activity. This information is used in models that have been developed progressively over the last 20-30 years to predict mouse outbreaks. Monitoring was conducted on (Figure 3):

- **Benchmark sites**: live trapping data collected for use in models in Adelaide Plains (SA), Walpeup (Vic) & Darling Downs (Qld).
- Quantitative rapid-assessment sites: mouse chew cards & active mouse burrows assessments on 110 transects across 11 sites.
- Qualitative monitoring networks: from farmers and agronomists in 11 local areas.

This is part of a study funded by the GRDC to monitor mouse populations and forecast the likelihood of mouse outbreaks. The project is a collaboration between Landcare

Research (New Zealand), CSIRO and the Centre for Invasive Species Solutions. The project is due to finish in December 2017.

Further information

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www.mousealert.org.au

Figure 3. Approximate locations of mouse monitoring occurring in WA, SA, Vic, NSW and Qld.

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