Monitoring mice in Australia – March 2018

Summary

- **High populations of mice in Victoria and South Australia** (Figure 1) – Mice are likely to cause damage at sowing.
- **Moderate populations of mice in Ravensthorpe and Esperance (WA), Eyre Peninsula and Yorke Peninsula (SA), Southern, Central and Northern NSW and Darling Downs (Qld)** (Figure 1) - Mice damage could occur. Mouse abundance/activity is patchy.
- Growers should actively monitor mouse activity (mouse chew cards or active burrow counts). Take a walk through paddocks.
- <u>If mouse population high:</u>
  → Reduce grain residues in stubbles by grazing, prickle chain, small disk chain, speed tilling if applicable to your cropping system. Baiting will be more effective when little alternative food source is available.
  → Consider application of zinc phosphide bait now and/or at sowing (within 24 hours of sowing/seeding).
  → Manage over as large area as possible to reduce the chance of re-invasion.
- Communicate with your local bait supplier to understand supply time-frames.
- 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*.

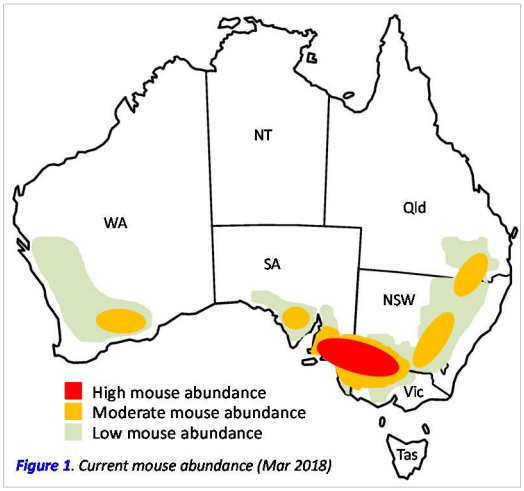

Figure 1. *Current mouse abundance (Mar 2018)*

Management Recommendations

1. Reduce alternative food sources. Prior to sowing, the key is to reduce available food resources for mice; to increase the effectiveness of zinc phosphide baits. Reduce food supply through livestock grazing, prickle chain, small disk chain, speed tilling etc if applicable to your cropping system. A light tillage will help bury food sources making it harder for mice to find food.

2. Apply zinc phosphide baits (at label rate of 1 kg/ha). Bait 4-6 weeks prior to sowing and again at sowing if warranted (if high numbers). If mice get a sub-lethal dose, they will develop a behavioural aversion to the bait and not eat it again, thus 4-6 weeks between bait applications. Baiting at 1 kg/ha provides around 20,000 lethal baits/ha, more than enough to treat high populations of mice (normally up to 800 or 1,000 mice/ha).

3. Reduce cover. Reducing cover (standing stubble) increases predation risk, which means mice will be less likely to forage far from burrows, or they will move to field with more cover.

4. Manage over a large area. Work with neighbours and manage mice over large areas (1,000 ha) to reduce the chance of reinvasion by mice.

Current situation

Mouse abundance is high across parts of Victoria and South Australia, and moderate across southern WA (Ravensthorpe and Esperance areas), Eyre & Yorke Peninsulas and North Adelaide Plains (SA), Southern, Central and Northern NSW and the Darling Downs in Queensland (Figure 1). Mice have continued to breed through summer and will reach a peak in abundance in early autumn (coinciding with sowing). Growers should remain vigilant and act accordingly if damage is likely. Because of patchy activity between paddocks, growers are advised to monitor across multiple paddocks to gauge mouse numbers and inform their management decisions. Please continue to report activity on *MouseAlert* (www.mousealert.org.au).

- <u>South Australia</u>**: Mouse abundance is high in Mallee and North Adelaide Plains and moderate in Eyre and Yorke Peninsulas** (Figure 2). Trap success at Mallala (north of Adelaide) was 30% in March (Moderate/High). Mouse activity is patchy across different sites, but relatively high and damage is likely at sowing.
- <u>Victoria</u>**: 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 150% in March (density estimates of 300 mice/ha) which is very high for this time of year.

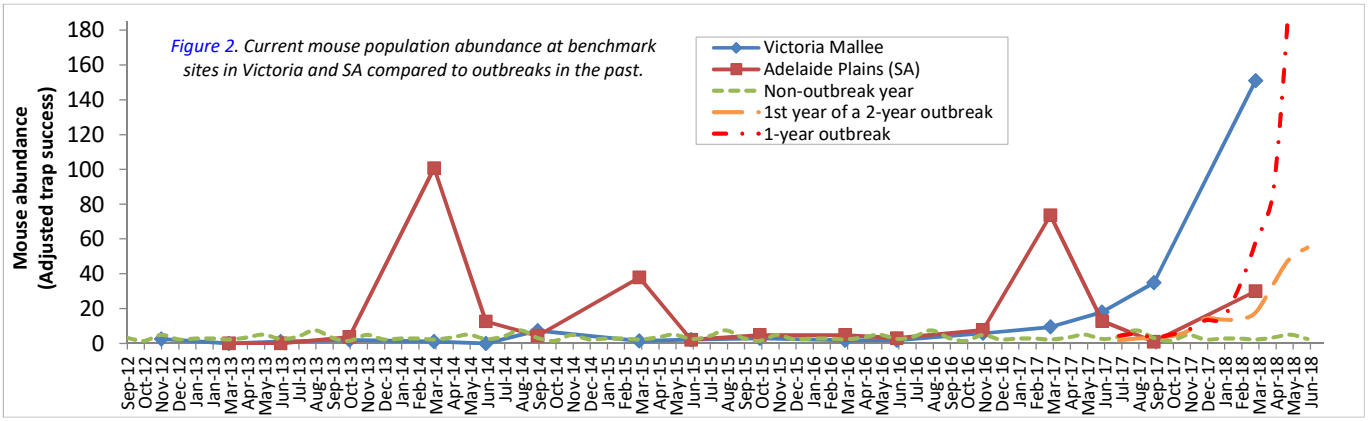

Figure 2. Current mouse population abundance at benchmark sites in Victoria and SA compared to outbreaks in the past.

- **Queensland: Mouse activity is moderate in some areas and low in others (patchy):** There are reports of damage to mungbeans; some baiting underway in other locations. The next round of monitoring is due in June.
- **Northern, Central & Southern NSW: Mouse numbers are moderate in Southern, Central & Northern locations but patchy.** Evidence of mice in ploughed paddocks, but is patchy between paddocks.
- **Western Australia: Mouse activity is moderate in Ravensthorpe and Esperance areas.** Increase in mouse activity observed and baiting underway in some locations.

The 'Mouse Forecast'

Northwest Victoria: The models are forecasting a moderate likelihood of an outbreak for autumn 2018. We are on track for economic damage at sowing in April/May 2018.
Central Darling Downs (QLD): The models were predicting an increase to moderate levels. The next monitoring is scheduled for June, when the models will be run again.

Future activities

The next scheduled monitoring is set for June 2018 across all sites. Please continue to report mouse abundance on your farm (presence and 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. 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
www.mousealert.org.au

Background

This is an update on surveillance of mice across the grain-belt of Australia for March 2018. Mouse populations were monitored in typical grains farming systems in WA, SA, Vic, and NSW during early autumn 2018 (March). 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.

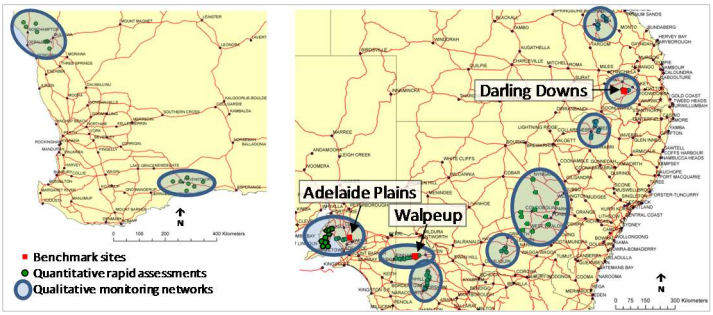

Figure 3*. Approximate locations of mouse monitoring occurring in WA, SA, Vic, NSW and Qld.*

This is part of a study funded by the GRDC to monitor mouse populations and forecast the likelihood of mouse outbreaks. This project has been re-funded by GRDC until December 2021.

Further information

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