

Mouse Surveillance

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KEY MESSAGES:

- High numbers of mice cause crop damage, loss of livestock feed & fodder, contamination of stored grain, and can spread disease.
- The breeding season is usually October to May, but the start and duration is determined by the availability and quality of food.
- Monitoring reveals changes in populations and can help indicate when control is needed, and the most important times to undertake monitoring are prior to sowing (March–April) and in early spring (September–October).
- SCF will be monitoring 10 paddocks throughout 2023 for mouse activity using chew cards and undertaking active burrow counts.

Background

The overall project, led by Farmanco Management Consultants, will complement the additional \$7.5 million GRDC has invested into mouse outbreak research (RD&E) with CSIRO, centred around better understanding mice in cropping systems. It includes activities such as studying the impact of residual food in stubbles, increasing surveillance, and improving strategic management options on managing mice numbers on farm.

As part of the larger project, Stirlings to Coast Farmers (SCF) has been asked to assist with the surveillance activities for the Albany Port Zone (APZ). The surveillance conducted will provide local growers and advisors with information about the presence of mice throughout the 2023 season. SCF will also assist in extending information on effective management tactics.

Methodology/Treatments

The SCF team will assist with mouse monitoring through the use of chew cards and active burrow counts for 10 sites (i.e. 10 paddocks). These sites are geographically spread across the membership zone, with at least 10-15km between each. The sites will be monitored four times throughout the season - pre-sowing, post sowing/early crop emergence, mid-season, and late-season.

At each site the following were installed and monitored:

- 2 x 100m transects
- 10x chew cards soaked in linseed/canola oil evenly spread on one of the 100m transects
- Cornflour to mark burrows in each transect, to see whether they have been active overnight.

Results and Discussion

Pre-seeding bait cards & active burrows

Pre seeding mouse surveillance was completed at all 10 sites on 13 April & 14 April 2023. Overall, seventy-eight burrows were recorded, with 12 being active. Only 5 chew cards out of the 100 placed showed feeding activity of between 1-15% card damage. The lack of card damage may have been due to significant available feed in most of the paddocks, with all participating growers informed of the results.

The next round of monitoring is due to be completed at the end of May/June, post-seeding.

Conclusion

This project will continue throughout 2023. Some key mice strategies to consider before and after sowing include:

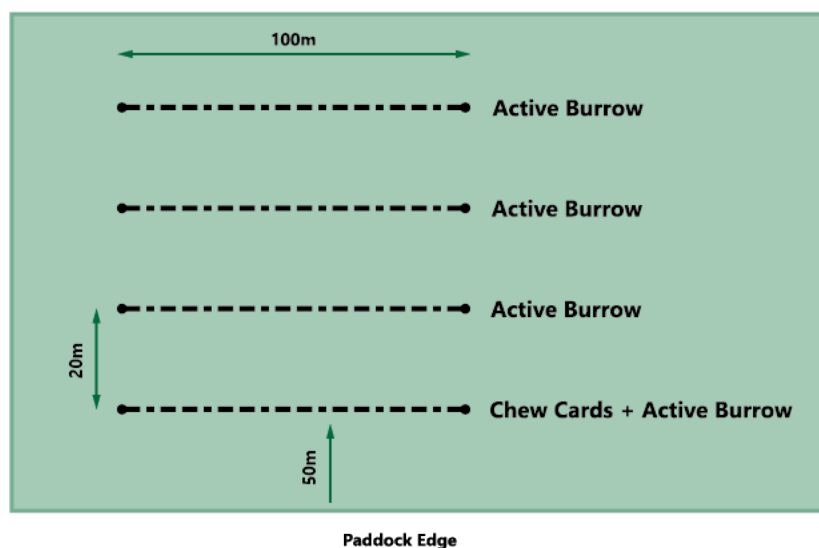
- Controlling weeds and volunteer crops along fence lines, crop margins and channel banks before seed set to minimise sources of food and shelter.
- Monitoring mice through the stubble to enable timely control efforts at sowing.
- When mouse populations are high at sowing, baiting at sowing. Best practice - bait as the crop is sown to give mice the best chance of discovering the bait.
- Coordinate management strategies with neighbours to minimise the risk of mouse re-invasion.

Acknowledgments

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Monitoring Method for Mouse Surveillance



Step 1	At the selected site walk approximately 50 m from the edge of the paddock (see figure 1) and mark the beginning of the first transect (chew cards + active burrows) by placing a marker e.g. flag tape (do this for all transects). Set the transects in the direction of the furrows to make it easy to locate chew cards the following day.
Step 2	Along the first transect set 10 pre-soaked chew cards in a line spaced at 10 m intervals (approximately 10 steps). Peg each card to the ground using a roofing nail or similar. Chew cards are only placed on the first transect. While setting the chew cards mark any burrows observed within 0.5m each side of the centre transect line by covering it with cornflour
Step 3	Mark the end of the first transect and walk a further 20 m into the paddock to the start of the second transect. Along the active burrow transects mark any burrows within 0.5m each side of the centre transect line. Don't be tempted to add any burrows outside of the 1 m width as this can increase the active burrow count by 100 burrows per hectare.
Step 4	Repeat this for the third and fourth active burrow transects spacing them 20 m apart
Step 5	Record the number of burrows marked in each quarter of the transect (25 m) on the data sheet provided.
Step 6	On the next morning locate the beginning of the chew card transect and pick up each card and each peg (take your small bucket with you). Record the amount of card chewed on the data sheet (it doesn't have to be exact) e.g. 1%, 2% 5% 10% 25%, 50%, 75% 100% (see figure 2).
Step 7	Any disturbance to the cornflour e.g. trails or dirt mounds (see figure 6) indicates an active burrow. Count the number of marked burrows that displayed signs of activity from each transect and record this next to the number of marked burrows on the data sheet