

## Annual Results Report

# 2020

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**Survey to determine if mice harbour in  
harvest weed seed control system**

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Project code: DAW1904-009RTX

Prepared by: Svetlana Micic

[svetlana.micic@agric.wa.gov.au](mailto:svetlana.micic@agric.wa.gov.au)

Department of Primary Industries  
and Regional Development

Roena Hooper

[Research.Office@agric.wa.gov.au](mailto:Research.Office@agric.wa.gov.au)

## KEY MESSAGES

- Mouse numbers were low over the broadacre growing region of WA with only one property surveilled with significant numbers of mouse holes
- Mouse holes were not found to be associated with the presence of chaff
- Further research is required into whether chaff provides a food source for mice or whether there is a harvest weed seed control (HWSC) system that is more likely to act as a refuge for mice

## BACKGROUND

There are several techniques commonly employed in harvest weed seed control (HWSC). The highest adoption of HWSC is in the GRDC western region with an estimated 67% of all farmers undertaking at least one HWSC strategy in 2014.

One of the most common HWSC is narrow windrow burning however there has been a recent shift against this method due to the requirement to concentrate and burn all harvest residue, both chaff and straw, reducing the amount of organic matter returning to the paddock. There are also associated problems with burning in autumn; burning permits, smoke haze complaints and the need for conducive weather conditions to get a good weed seed kill.

Chaff lining has recently become popular in the place of windrow burning. Chaff lining, originally known as windrow rotting involves funnelling only the chaff fraction of crop residue (containing weed seeds) into a confined row directly behind the harvester using a narrow chute and spreading the straw fraction back onto the paddock. The chaff and weed seeds are then left to rot down over time. To promote rotting, the chaff lines need to be placed in the same location year after year by running the harvester on a controlled traffic (CTF) system.

The association of mice with HWSC systems are poorly understood. The aim of this project was to take a preliminary survey to determine if there is an association with chaff in HWSC and mice numbers.

## METHODS

20 paddocks were surveyed for mice. For each paddock a field record was completed. This detailed paddock location including a GPS location of where sampling occurred, crop type, average yield, current years insecticide application, date of harvest and type of HWSC system implemented. During each survey, the date and time of each sampling was recorded.

Mouse monitoring occurred between February and April. Paddocks were not sown to crops.

Assessment for mouse holes were done in four transects each 100m long. Two transects were located 10 cm from chaff and two were located at least 20 m away from chaff. Each transect was at least 50 m away from vegetation.

The start and end of each transect was pegged and one metre on either side of the transect, the number of mouse holes was counted.

Transects located adjacent to chaff, the chaff and stubble were pulled back to check closely for mouse activity.

If a mouse hole was located, corn flour was sprinkled at the entrance of each mouse hole.

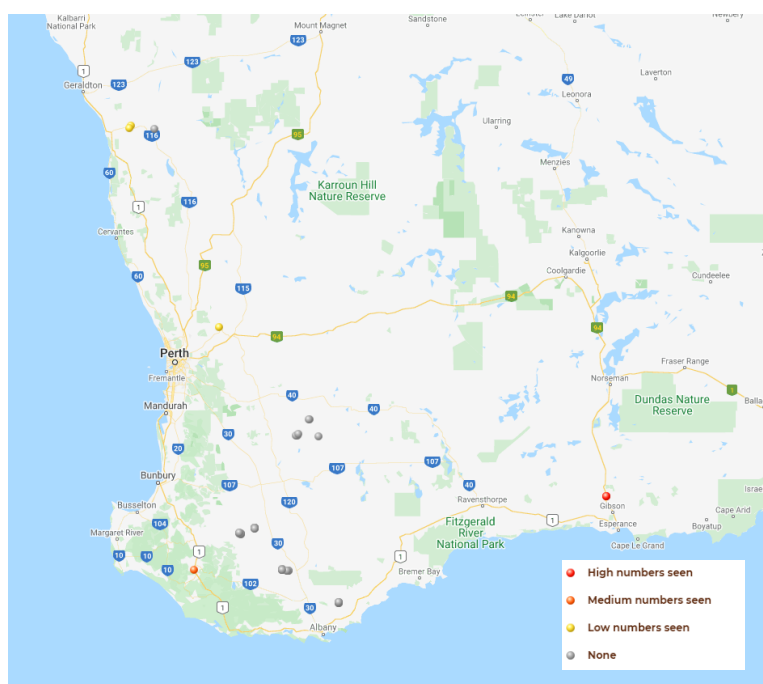
24 hours later mouse holes were assessed for disturbances. Any disturbed mouse holes were recorded and all data entered into Mouse Alert at: <https://www.feralscan.org.au/mousealert/>

## RESULTS

Of the 20 paddocks surveyed for mice, of only 5 had active mouse holes. Four paddocks were located near Minginew and had at most two active holes along 4 transects. These are considered to have low levels of mice. One paddock in Esperance had mouse numbers that were considered high, at this site there were an estimated 488 mouse holes per ha (Figure 1).

There was no correlation between the presence of chaff and the presence of a mouse holes, nor was there a correlation with HWSC system and the presence of mice.

The presence of mice at the Esperance site is likely to be localised as mice were not reported at the other 24 paddocks that were surveyed as part of this project in the Esperance port zone. Nor were any reports of mice made to DPIRD from industry or entered into Feral Scan by industry/public (Figure 3).



**Figure 1: Map of mice in Western Australia from April 2020 entered into feral scan. Sites monitored for mice by this project are in the Esperance, Albany, Kwinana West and Geraldton port zones.**

## CONCLUSIONS

Even though mouse activity was located around sheds, this did not necessarily mean mice were located in the paddock. In the paddocks, which mice were located, the distribution of holes was not in association with chaff.

A larger survey is required to determine if chaff provides a food source for mice and whether there is a HWSC system that provides refuges from predators for mice, for instance, chaff dumps would be expected to provide more of a refuge than chaff lines.



