Update of mouse numbers from the Central Mallee of Victoria
March 2001 - CSIRO Rodent Research Group

Regular mouse trapping is conducted in the Central Mallee wheatlands of Victoria as part of a Grains Research and Development Corporation funded project. This is an update to the report sent out in February 2001.

Abundance of mice

The abundance of mice is still relatively high for this time of year (Figure 1). There was a slight decrease in abundance in mid March on our long-term sampling site (continuous red line). The farmer on this property has been implementing "best practice" for managing mice. Over the past month he has slashed growth along his fencelines, continued to graze all of this stubbles and used rodenticides around his farm buildings. Because of these actions we also present data obtained from four other farms in the Central Mallee (within 15 km of our long-term study site) as part of a study on the breeding dynamics of mice. We thank Jens Jacob and Hannu Ylonen for access to these data.

Although Figure 1 looks complicated, we thought it best to provide all the available data because the situation is not clear-cut. As is reinforced by the breeding data (see below).

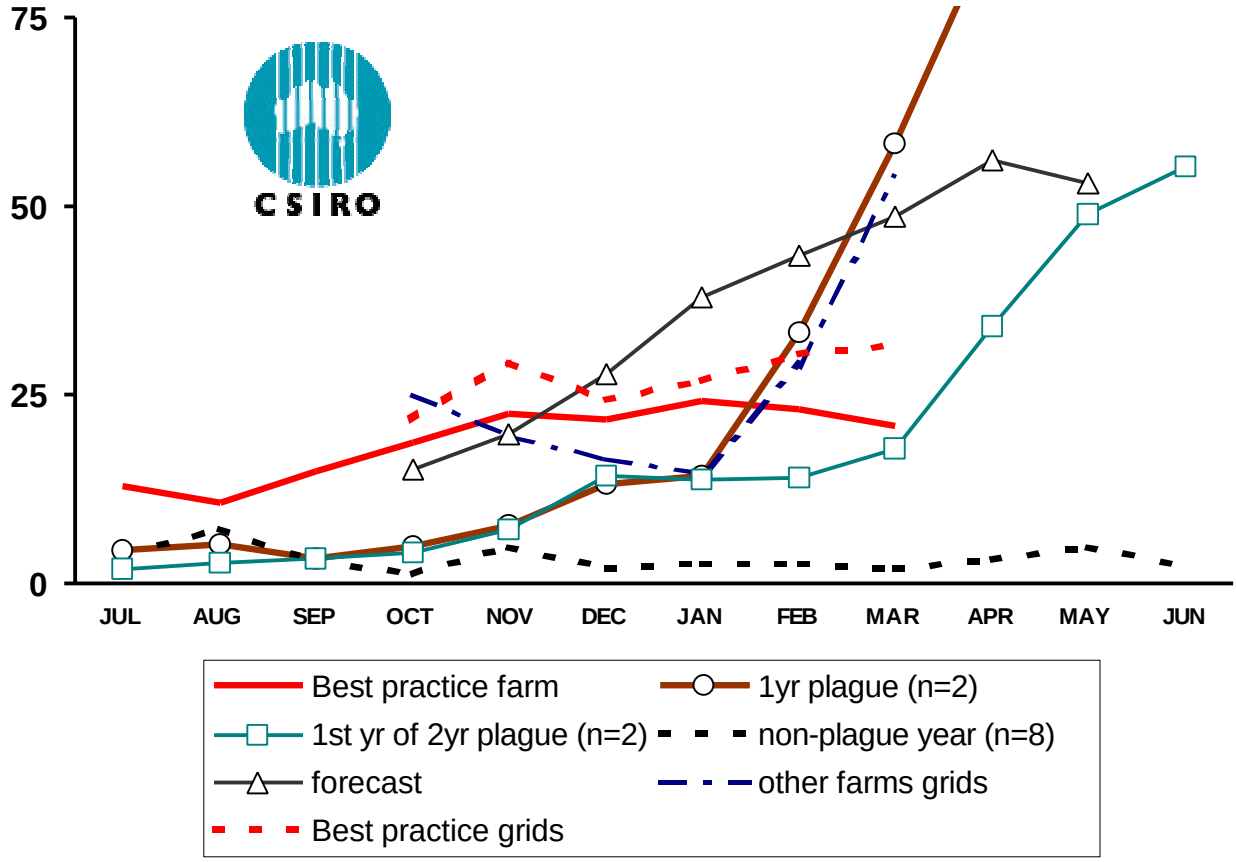

Figure 1. Historical, current and predicted trends in the abundance of house mice in the cereal production areas of the Victorian mallee. The index of abundance is adjusted trap success per 100 trap nights and recent data are shown for July 2000 onwards. The historical data come from four plagues that have occurred in this area since 1983. On two occasions (1984 and 1997) the eruptions were restricted to one year and on two other occasions (1987-1988 and 1993-1994) the eruption was more

pronounced in the second year (the first year of a two-year outbreak is shown here). For 2000-2001, observations from trapping grids on four farms ("other farm grids"), which include fence lines and crop/stubble, indicate that populations of mice are building up towards an outbreak. Also shown are recent trapping data for our long-term sampling site where "best practice" recommendations are followed to minimise damage from mice. The forecast from a model developed by CSIRO for this region is shown for comparison.

Breeding

Adult female mice on some farms ceased breeding in February. However on other farms up to 30% of females were pregnant. For example, for the 4 farms we had 2% (1 of 62 adult females), 5% (6 of 32), 5% (4 of 78) and 31% (9 of 29) pregnant females from kill samples. The average number of embryos was 4.6 (litter size is normally low in autumn).

General Comments

The above data for the central Mallee in Victoria suggests that problems could be localised but a major plague is not expected. Basically, individual farmer needs to stay on alert for signs of high mouse activity.

The population numbers are high for March but the breeding has begun to cease in some localities. It has been very dry in the region with only two significant rainfall events in the past 4 months.

The situation in the Northern Mallee of Victoria, Southern Mallee of Victoria, Southern Mallee of South Australia and the Northern Mallee of South Australia is not of concern at the moment. The good crops in some of these regions has led to plenty of food for mice so it will be interesting to see how these populations respond over the next couple of months.

Recommendations for management

A research project funded by the Bureau of Rural Sciences and GRDC in the Central Mallee and Wimmera regions of Victoria (1995-1998) provided some recommendations for best farm management practices for mouse control. This was a collaborative project between the CSIRO Rodent Research Group and the Victorian Department of Natural Resources and Environment.

Given that mouse numbers are relatively high for this time of year, we would encourage farmers to put sheep on to graze their crop stubbles as much as possible. This will reduce the availability of high quality grain that was left on the ground after harvest and also prevent volunteer crops maturing. However, farmers need to make sure that there is sufficient cover to prevent erosion.

Farmers may also wish to consider protecting their crops at sowing to reduce the chance of damage. This can be achieved by cross harrowing, rolling or prickle chaining after sowing to ensure the seeds are well covered. Furthermore, the seeds should be sown as deep as agronomically possible and to an even depth. These actions are only necessary when moderate to high mouse numbers are likely at sowing (that is, this year).