

**Special Edition:
Dealing with locusts**

Find out what you can do about the current locust plague.



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Special Edition: Locust Management

The present locust situation across the region is a concern for all farmers. Extensive damage to most types of pastures and early crops has been reported throughout the Mallee.

The extent, density and lateness of the locust plague means that you may have to make some difficult decisions regarding sowing of crops in the next two weeks. To help work through these decisions you should understand some key facts about the locust and locust swarms:

- Locust activity is regulated by temperature; they are most active between temperatures of 20°C-35°C.
- When locusts are at low densities (1 per m²), adults usually only take short flights of 1-5 km. When densities reach 5 per m², they may undertake longer swarm flights which usually only occur in light winds (< 3 m/sec).
- Swarms generally move in the direction of the wind. Swarms will normally be diverted by, and will bank up behind obstacles such as vegetation reserves, forest or parks.
- Swarms can cause serious damage to crops. As already experienced by many Mallee farmers, locusts can consume an entire crop overnight. Often the locust swarm will land during the night and will have eaten out a crop or pasture by daylight the following morning.
- Female locusts lay eggs in the soil in batches, usually at a depth of 2-10 cm. Each pod will contain 30-60 pale yellow banana-shaped eggs 5-6mm long. Each pod is sealed with a froth plug which protects the eggs from extreme temperatures and ensures adequate moisture is available for development.
- An egg bed is a collection of egg pods laid by a number of locusts. Egg beds may vary from a few square metres to several hundred square metres and may be scattered irregularly throughout a region.

- Egg beds typically occur in bare patches of compact soil. Therefore, prime egg bed locations include along roadways, fence-lines and pasture paddocks.
- Eggs laid now are likely to stay dormant over winter and hatch in spring. These hatchings have the potential to be as problematic as the current locust situation.

Should I delay sowing?

In areas where locusts are in high numbers, there is a risk that emerging crops can be damaged by swarms. Locust control decisions need to strike a balance between the risk of damage by locusts and potential yield penalties suffered from delayed seeding. In areas with high locust populations, it is advisable to delay seeding cereals to the first or second week in May. By this time we may have a clearer picture of locust activity, damage and threat.

As a general rule, locust activity will diminish when maximum daily temperatures are around 20°C or lower. If temperatures of 25°C -30 °C persist over the next few weeks then locust swarms will continue to be highly mobile and can cause extensive crop damage, even in regions where locust activity is currently low. Monitoring temperature forecasts daily will help you to keep abreast of the situation.

Every week that sowing is delayed in the Mallee, can have a generally negative impact on yield potential. Early sowing into warmer soil improves crop establishment, particularly in areas of higher disease potential. However, with generally good subsoil moisture present this season, there is a little more flexibility to the preferred sowing times.

Chairman's Message

MSF wrote to each of the State Agricultural Ministers, and Federal Minister Tony Burke on Thursday, urging them to provide urgent funding and a coordinated crisis plan for the immediate future, as well as for next spring when hatchings could again ruin valuable crops. Here is hoping this year's good pre-season rainfall is not wasted.

Jim Maynard

Locusts can also have an impact on weed control. 'Knockdown' herbicides may not be as effective on grassy weeds with locust damage. This will depend on the amount of weed surface left to effectively absorb the chemical and the stress of the plant. Therefore, try to sow paddocks with low grass weed or self sown plant numbers first, or sowing may need to be delayed slightly to ensure that good 'knockdown' weed control is achieved.

Chemical control an option?

Chemical control is most effective when the juvenile locust (hoppers) are present, which is most likely to occur in spring. This is because hopper numbers are extremely dense and the mobility of the insect is limited. Chemical control of highly mobile adult locusts is ineffective. You may kill some of the locusts, but these may be replaced by new locust swarms.

If you do feel a need to spray, you should wait until the locusts are more settled. This is most likely to be on a cool day, or at night or early in the morning. Wind speeds of 6-8km/hr are ideal for keeping locusts on the ground while spraying. All chemicals registered for locust control will have withholding periods so be sure to pay attention to these. Also make sure you avoid any off-target damage to neighbouring sensitive species. A coordinated approach involving neighbours is a good idea.

How do I destroy egg beds?

Many no-till farmers are concerned that the bare inter-row of stubble paddocks will provide ideal conditions for locust egg beds. However, locusts usually prefer to lay eggs in heavier textured firm soil, which is more likely to occur alongside tracks, in uncropped areas, and in paddocks, in, or coming out of a pasture phase.

Cultivation of egg beds may reduce locust hatching potential, however, these egg beds will be patchy and will only occupy a small percentage of the paddock. Cultivating entire paddocks just for locust control may have limited effect, while having the negative impact of increasing erosion potential (particularly on lighter soil types). If egg beds can be clearly identified and targeted, cultivation will be beneficial. However, it will be equally effective to monitor these sites from early spring and target the locust hoppers with chemicals.

What is the outlook for spring?

There is high potential for an equal or worse outbreak of locusts in spring. The large number of eggs laid by female locusts means that numbers have the potential to increase substantially.

Locusts can attack grain crops that are still green by chewing the upper node beneath the head and causing the head to fall (resembling the damage of army worms). Adult locusts can cause significant damage to the heads of wheat crops by chewing off the awns and the bracts surrounding the developing grain. In some cases the head will be nearly or fully severed and the developing grains completely removed.

Farmers should be vigilant and look out for egg beds or potential egg laying sites. Even if you do find egg beds it is likely that they will represent only a very small number in your area. You should report egg beds to your local state department.

- PIRSA Biosecurity through the 24-hour Plant Health hotline on **1300 666 010**
- Victorian Locust hotline on **1300 135 559**
- NSW - Western Livestock Health and Pest Authority Balranald (main office) on **03 5020 1691**

More information about locusts, the current situation and outlook can be found at the following sites:

<www.daff.gov.au/animal-plant-health/locusts>

<www.dpi.nsw.gov.au/agriculture/pests-weeds/insects/general/locusts>

<www.lhpa.org.au/pest-control/locusts>

<www.pir.sa.gov.au/biosecurity/planthealth/emergency_plant_pests/australian_plague_locusts>



Plague locust egg pod dug up and broken open to show eggs



Part of an egg bed in grey soil - note holes where eggs laid



Significant damage to the heads of wheat crops

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