

## Pest control

# Locust plagues – an organic solution

By HOLLY VYNER

Locust bands and swarms are a constant problem in Australia. They can cause enormous devastation of crops and livelihoods. Adult flying locusts may travel up to 500km in a single night in swarms on typically hot high-altitude winds, migrating from the arid interiors of north-west NSW, south-west Queensland, SA and Western Australia.

High spring and summer rainfall in these higher rainfall areas enables rapid multiplication and the formation of swarms that can invade arable inner country by mid-autumn.

Winter cereal crops and emerging summer field crops are particularly susceptible.

There have been increasing constraints on use of insecticides in areas of endangered or vulnerable species, waterways, school bus routes, farm dams, residential areas and organic production areas. As a result CSIRO has developed "Green Guard" *Metarhizium* fungus, an alternative biological control method that occurs naturally in the Australian environment.

Spores are suspended in mineral or vegetable oil and sprayed onto pastures or crops and are harmless to all organisms other than locusts and grasshoppers.

Dr David Hunter, a consultant on locust and grasshopper control, says "Green Guard has been critical for ensuring effective integrated locust management by the Australian Plague Locust Commission (APLC).

This is especially so in the Riverina that has large areas with endangered species and in western Qld, which can serve as a source area of locusts and an area of extensive organic beef production. Another benefit of Green Guard is there is no withholding period for animals going to market."

Aerial spraying by APLC of 25,000ha in NSW and Qld in the summer of 2000, against substantial locust populations, demonstrated the product as a successful control measure. There are two versions of Green Guard which are suitable for use in organic production systems. Green Guard SC is available for ground control while Green Guard ULV (ultra low volume) is used for aerial spraying.

Green Guard should be applied at the early to mid nymph stage as it normally takes up to 10 to 14 days to be effective and is less effective in controlling adult locusts. Reductions of 90% and more are common and tests have shown that the fungus remains on vegetation for more than 10 days after application. Ultra high temperatures do not appear to lessen the effect of the fungus and it is best used when maximum temperatures are above 20°C.

Landholders are required to report the presence of plague locusts to their local authority as soon as detected, as early prevention is critical. Ground control of locust nymphs by landholders is a critical component of the overall control strategy to reduce populations and minimise the potential damage such populations can cause to crops and pastures. ■

*Sources: Australian Government – Department of Agriculture, Fisheries and Forestry < [www.daff.gov.au](http://www.daff.gov.au) >; NSW Department of Primary Industries < [www.agric.nsw.gov.au](http://www.agric.nsw.gov.au) >; CSIRO: [www.csiro.com.au](http://www.csiro.com.au).*

**Central western NSW near Wellington, summer 2005. The light coloured areas are where locusts have banded and left ground bare.**

