

# MIGRATORY LOCUST



Australian Government

Department of Agriculture, Fisheries and Forestry  
Australian Plague Locust Commission



## IMPORTANCE

The migratory locust (*Locusta migratoria*) is an important pest of pastures and crops. Susceptible crops include sorghum, wheat, barley, oats, maize and sugarcane. This locust is found mainly in central Queensland, but intermittent populations occur in inland, coastal and southern Queensland, and in northern NSW. Outbreaks develop if winter rainfall follows normal spring and summer rains. These conditions allow continuous breeding. A plague may develop if there are two consecutive winters of high rainfall allowing two consecutive years of breeding. The majority of outbreaks originate in the Central Highlands of Queensland, and major upsurges occurred here during the 1970's and 1990's.

## IDENTIFICATION

Adult migratory locusts have large robust bodies 35 – 65 mm long, with dark mouth parts and hair on the underside of the thorax. Body colouration in the migratory locust varies according to population density. The solitary form (most commonly encountered) ranges from brown to green in both nymphs and adults. The gregarious phase is red to orange with contrasting darker to black markings in the nymphal stage and straw coloured in the adult phase. Some gregarious phase adults have a slightly bluish body with a yellow head and legs.





photo: P. Zborowski

*Locusta migratoria* nymphs  
solitary and gregarious phases



photo: P. Spurgin

*Locusta migratoria* adult  
gregarious phase



photo: P. Zborowski

*Locusta migratoria* adult  
solitary phase



## LIFE CYCLE

The migratory locust is unable to survive prolonged dry periods. In a year of "normal" spring and summer rainfall there are 2 – 3 generations, with populations declining in the drier winter months. Rain in late autumn or winter ensures egg survival, leading to adults being present in early spring. Subsequent normal spring and summer rain allows a further 3 – 4 generations and an outbreak may result. If a second wet winter occurs, then locust numbers increase and a plague can result. During periods of regular rain generations of the migratory locust often overlap and consequently all locust stages may be present in an area at the same time.

### EGGS

Female locusts lay eggs in clusters called pods, up to 10 cm deep in the soil. Each pod contains 40 – 50 eggs and mature female locusts can lay several times, approximately 4 – 6 days apart. Eggs are laid in discrete areas known as "egg beds". Favoured sites include: moist soil in areas of cultivation, silt beds resulting from erosion, semi-dry creek beds or even sorghum crops in silted areas. Eggs laid in late spring and summer hatch in 2 weeks, but take longer when temperatures are lower.

### NYMPHS (hoppers)

Nymphs go through five stages, called instars, before the adult stage is reached. Small wing buds form on these immature locusts in the third instar, and grow to about half the length of the abdomen by the last (fifth) instar. During spring and summer nymphs develop into adults in about four weeks, although in cool weather development can take considerably longer. Where nymphs are present in large numbers they become highly gregarious and aggregate into dense, compact bands that can move several hundred metres per day.



## ADULTS

Adult locusts live for approximately 1–2 months. Adult females usually begin laying eggs 2–3 weeks after reaching maturity. Egg development is rapid when soil moisture is high, but is protracted when conditions are dry. Adults developing from bands are highly gregarious and form dense swarms that can move several kilometres in one day. Long distance nocturnal migration is uncommon in this species, but is suspected to sometimes occur during the passage of rain bearing weather systems.

## CONTROL

The APLC is only permitted to control locusts considered to be a threat to agriculture in another state. Consequently, the APLC undertakes aerial spraying of bands and swarms of migratory locusts found in an area bounded by Charleville, Roma, Dalby, Narrabri and Bourke. Migratory locusts outside of this area are a state responsibility. During 1996 – 1999, the Queensland Department of Natural Resources (QDNR), in collaboration with the Australian Plague Locust Commission, undertook successful preventative control programs that limited the size of outbreaks. The chemical most commonly used is technical fenitrothion applied in ultra low volumes (ULV) at 210 – 300ml/ha. The low volume sprayed, short residual life of fenitrothion and selective spraying of only dense targets means that there are minimal environmental risks associated with spraying by the APLC. The Commission is currently involved in a cooperative project testing the fungus *Metarhizium* for use as a biological alternative for locust control.



## THE ROLE OF THE APLC

The APLC was established in 1974 to overcome difficulties previously encountered when controlling insects that migrate long distances and interstate. The Commission is jointly funded by the Commonwealth (50%), N.S.W. (32.5%), Victorian (10%), South Australian (5.0%) and Queensland (2.5%) governments. The APLC's role is to:

- control outbreaks of the Australian plague, spur-throated and migratory locusts that could pose a threat to agriculture interstate;
- collect and collate data on these locusts;
- forecast changes in these populations;
- monitor the environmental effects of control;
- improve survey and control methods.

There are 18 permanent officers responsible for the monitoring, control and research of three locust species within an area of 2 million square kilometres.

The Australian plague locust is a more frequent and widespread pest than either the spur-throated or migratory locust. The Commissions Charter states that if faced with high numbers of migratory and Australian plague locusts, control of the Australian plague locust must take priority.

## REPORTING LOCUSTS

It is important that landholders report the presence of locusts as soon as they are seen. Reports can be made to the APLC (toll free on 1800 635 962), by email – [aplcdaff.gov.au](mailto:aplcdaff.gov.au), via our web site – <http://www.daff.gov.au/aplc>, or to the relevant state Department of Agriculture or Rural Lands Protection Officers in NSW and Qld.

