FACTSHEET

Spur Throated Locust

Simon Oliver, Agricultural Protection Officer, Orange

Introduction

Spur Throated Locust (STL) *Austracris guttulosa* is a pest of pastures, crops and certain tree species. It is a tropical species of northern Australia, but extends its habitat into areas experiencing wet summer seasons. Its presence is often noticed in northern NSW, but rarely reaches damaging numbers.

They are generally found in Queensland, Northern Territory, northern Western Australia and sometimes northern NSW.

It is a declared pest insect in NSW under the *Rural Lands Protection Act 1998*.

Identification

The STL is readily distinguished from other pest species of locusts and grasshoppers by is large size and the presence of a spur, or throat-peg (2 – 3 mm long) between the front legs.

Figure 1 Adult locust. Photo: Australian Plague Locust Commission.

Lifecycle

There is only one generation per year. Female adult STL lay eggs in batches, called **pods**, in the soil. STL can lay up to 130 eggs in a pod and can lay several times. Unlike the Australian Plague Locust, eggs are not laid in eggbeds, but are scattered. Eggs take 20 to 30 days to hatch. Eggs are laid between mid-October and December.

Nymphs

An immature locust is called a **nymph** or hopper.

After hatching STL go through six nymphal growth stages called **instars**, moulting at each stage. The developing wings become more noticeable at each stage until the locust becomes a fledgling adult and then a mature adult capable of sustained flight. Nymphs take 10 weeks to reach adult stage.

Their colour is variable. Early instars tend to be green or grey, with variations including yellow and straw. In later instars the grey of the adults becomes the norm. Older nymphs have a distinct pale or dark stripe down the middle of their back.

From the third instar onwards nymphs are quite large and can do damage. Nymphs usually occur from January to April.

Nymphs are vulnerable to mortality if regular rainfall does not occur during this period. **Nymphs do not form high density bands that can be located through aerial surveillance.**

Figure 2 Nymphs at various stages of instar (3rd to 6th) with fledging adult on left. Photo: Simon Oliver, I&I NSW.

Figure 3 Final moulting from nymph to adult. Photo: Clare Mulcahy, Australian Plague Locust Commission.

Figure 4 Nymphs (yellowish colour) roosting. Photo: Michael Josh, Agronomist, Walgett.

Figure 5 Mid instar nymph. Photo: Simon Oliver, I&I NSW.

Figure 6 Mid instar nymph. Photo: Simon Oliver, I&I NSW.

Figure 7 Late instar nymph. Photo: Simon Oliver, I&I NSW.

Adults

The adults are pale brown or grey in colour with white stripes and dark markings on the thorax. The hindwings are colourless or have a bluish tinge. The shanks of the hind legs are straw or mauve coloured and bear two rows of dark-tipped white spines. Adult males measure 55–65 mm long and females are 70–80 mm long.

Fledging usually occurs during March-April but can occur as early as January. At the end of the wet season the newly fledged, pre-reproductive adults enter an overwintering diapause state and move to their winter habitat, often forming dense swarms.

During winter these adults spend most of their time roosting in trees, particularly in tree-lines along water systems or woodland adjacent to crops/grassland, although they may move down to feed on the vegetation below the trees during the warmer part of the day.

When numbers are high they can defoliate trees and even cause branches to break under the weight of many thousands of individuals per tree.

The overwintering diapause state is maintained until increasing photoperiod and temperatures during late spring trigger the resumption of reproductive development and accelerated fat accumulation.

It takes at least 15 days for male and 20 days for female adults to reach sexual maturity after diapause is broken (dependent on temperature and food availability) and egg laying can then commence from late October (typically 7 – 9 months after fledging) if there are heavy rains in northern NSW or early rains in tropical Queensland.

Figure 8 Male and female mating. Photo: Karen Roberts, I&I NSW.

Occurrence

Historically numbers rarely reach a threshold in NSW where they cause any significant agricultural damage or are worthy of a control response. The last major outbreak occurred in NSW in 1974-75. In Queensland, there has been additional large outbreaks between1994-99.

Behaviour

Nymphs are very elusive; with any movement they burrow into pasture or hide on the underside of leaves. They will move into a crop/pasture from adjoining pasture or native habitat.

Adults can stay locally or migrate by day or night up to 1,000 kilometres. They can form high density swarms that are highly visible. Long distance migration usually takes place at night.

Figure 9 High density adult swarm in a corn crop. Photo: source unknown.

Management

Damage

Nymphs and adults are voracious eaters. Generally, nymphal densities of 20 per square metre or greater will pose an economic threat to crops. As adults, 1-3 per square metre have caused economic damage to sorghum and sunflowers.

Nymphs and adults feed on fresh green vegetation such as summer crops including sorghum, sunflower, soybean and cotton, and in autumn will feed on early winter crops such as wheat and canola. Extensive damage to wheat has occurred when attacked by fledging adults.

Figure 10 Nymph foliage damage in cotton. Photo: Simon Oliver, I&I NSW.

Figure 11 Adult locust in canola. Photo: Karen Roberts, I&I NSW.

Reporting

As a declared pest, any activity should be reported to your local Livestock Health and Pest Authority (LHPA).

Nymphs do not band and can be difficult to locate. Swarms are difficult to locate in forested areas but more easily found in open pasture or cropping situations.

Control

Nymph control is generally not economically viable except in high-value crops. The nymphs do not band and are generally quite scattered.

A number of pesticides are registered for the control STL. All control should be done as per the label instructions.

Nymphs generally move into crop from adjoining pasture or native habitat. Effective nymph control will only be achieved if the crop and adjoining pasture or native habitat is treated. If the adjoining pasture or native habitat is not controlled, reinvasion can occur within days.

Medium (11-50 per square metre) to high (> 50 per square metre) density adult swarms pose a significant economic threat. Effective control of swarms is mostly done by aerial spraying.

Further information

NSW Industry and Investment at:
http://www.dpi.nsw.gov.au/agriculture/pests-weeds/insects/locusts

Australian Plague Locust Commission at:
http://www.daff.gov.au/animal-plant-health/locusts/about/spur-throated

ISSN 1832-6668

The author acknowledges the contributions of the Australian Plague Locust Commission in this document.

Pub 11/13