

## Lepidoptera Pests that Attack Turf in Australia

### Lawn Armyworm

Lawn Armyworms (*Spodoptera maurita*) are a major pest during summer and autumn, causing severe damage to most turfgrass surfaces where they attack leaves, stems and seedheads. Infestations in turf gradually extend outwards from gardens or higher cut turf areas as these plants are used as egg laying sites. Severe damage is predominantly caused by the later instar stages and as populations increase, the larger armyworms tend to move in groups into unaffected turfgrass areas, hence the name 'armyworm'. Armyworms characteristically have stripes or triangular patterns along their smooth body, differing from that of the sod webworms.

Armyworms are the larvae of moths of the family Noctuidae. The female moth may lay more than 1000 eggs, sporadically in clusters within 4 to 10 days, depending on temperature. The newly hatched armyworms stay together feeding on the same plant until it is devoured. The larvae are usually most active in the evening or at night, except in overcast weather conditions. During the day they hide under the safety of the lower grass leaves.

An armyworm will undergo 6 to 9 instar stages before it is fully developed. This will take 21- 35 days and at a mature instar stage the insect will reach 3-4 cm in length. When fully fed the armyworm will work its way into the soil profile where it pupates. 10-14 days later the moths emerge. There may be 2 or 3 generations of armyworm during the summer and autumn period.



### Sod Webworm

Sod Webworm are a variety of species of nocturnal, grass infesting moths and their larvae, the most common being (*Herpetogamma licarsisalis*). The larvae produce a silky web like material, that they line their tunnels with. The moth of the Sod webworm are greyish white in colour, possess a wingspan of 2.5cm and have delicate fringes along the outer borders of their wings. The Sod Webworm moth has a snout like projection at the front of their heads and when at rest they fold their wings around their abdomens.

The female sod webworms moths produce non adhesive eggs (approximately 1-6 per adult), which they drop onto turf while flying at night. Upon falling into the thatch, the eggs hatch within 10 days, depending on temperature. Peak egg hatch occurs in early summer and continues throughout the summer months. A complete lifecycle (to go from egg hatch to adult moth) takes up to 4 months.

The eggs tend to be oval or elliptical in shape with longitudinal ridges on the surface that run from pole to pole. Each egg is approximately 0.3 – 0.7mm in length.

Larvae burrow into the thatch upon hatching and conceal themselves with debris. The larvae remain concealed during the day and come out at night to feed. They damage turf by chewing at the crown of the turfgrass plant or by cutting blades and taking them into their tunnels for food.

By late spring or early summer the young adult moths emerge and fly above the turf. These moths are especially active at dusk and are attracted to lights. The Sod Webworm have 2-3 generations per year. Sod webworm overwinter in the soil as larvae.

Since sod webworms are nocturnal feeders, contact insecticide application should be done as late in the day as possible to ensure maximum control.



## Black Cutworm

Black cutworm (*Agrotis spp.*) are the larval stage of nocturnal moths. Most larvae are grey, brown or black and may be distinguished from one another by their coloured bands. The larvae are 40-50mm in length.

The pupae are reddish-brown and reach a length of approximately 16 mm. Adult cutworm moths have hairy bodies and are larger than sod webworm moths, with a wingspan of 35-55mm in length. Different species may be identified by the marking on their forewings.




Adult moths lay their eggs in clusters in turfgrass at night, laying between 300 – 2000 eggs per female adult. Some species produce enough generations that adult moths are present throughout the year. Cutworm larvae usually feed during the night and take shelter during the day. These insects typically cut off young plants at the crown level and pull them into a burrow before feeding. Cutworm activity is usually observed in autumn and early winter. They generally attack cool season grasses such as Bentgrass, Wintergrass and Fescues.

Cutworms have two generations per year and overwinter as pupae. A full lifecycle usually takes between 4-6 weeks to complete.



## Control Options

### Key Control Options for Lepidoptera Pests in Turf

Pack	Insecticide	Active Ingredient & Mode of Action Group	Description	Rate
	DuPont Acelepryn	200g/L Chlorantraniliprole 28	Provides excellent control of all Lepidoptera pests. Excellent residual activity ( up to 6 months) on Lepidoptera pests. Excellent safety profile for users and the environment.	750mL/Ha
	Compel	100g/L Bifenthrin 3A	Containing the well known active ingredient Bifenthrin, Compel is registered for the control of Armyworm & Webworm. A low odour and cost effective formulation.	1.2L/Ha
	Tempo	25g/L Betacyfluthrin 3A	Contact insecticide registered for the control of cutworm, Armyworm and Webworm. Low scheduling and active ingredient output are keys points of differentiation.	2L/Ha

