Maximising control of scarab grubs

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The larvae of numerous species of soil scarabs are the most widespread and destructive of all root-feeding insects. There are at least 12 scarab pest species of grasslands and turfgrass in Australia, but probably five which are more common than some of the others. The following information on the lifecycle of these species is from "Pest Management of Turfgrass for Sport and Recreation"[1].

African Black Beetle

Adults mate in August and September. Egg laying occurs from early spring to early summer, with a peak period in October. Eggs hatch after two to five weeks. Females lay 6–12 eggs. The larval period ranges from two to four months. First and second instars occur in November and December and develop quickly into third instar larvae. Third instar larvae are responsible for the majority of turfgrass root damage between December and January.

Argentinian Scarab

Females lay approximately 25 eggs during mid-summer (December–January). These eggs hatch after approximately 21 days, during late summer. The larval period extends from January to November. Second instars peak around March. Large third instar larvae may occur from April to October.

Black Headed Pasture Cockchafer

Females lay approximately 10–50 eggs. Eggs hatch in two to four weeks. Larvae develop over about four to eight months. Large larvae generally occur between April and late October, feed on surface growth and take three to five months to develop.

Red Headed Pasture Cockchafer

The red-headed pasture cockchafer has a two-year lifecycle, resulting in overlapping generations of the soil-inhabiting larvae. Adult beetles fly at dusk from late winter to early spring (August to mid-October). After mating, females lay their eggs singly or a few at a time. Eggs hatch in late spring, after six to eight weeks. The larval period extends from mid-summer (December) to the following early summer (November), with the third instar lasting up to 10 months. Early instar larvae reach third instar relatively quickly, often by early autumn. Third instar larvae begin to pupate between January and early March; pupae develop over four to eight weeks. Adults emerge but stay in the soil for about six months. Although the lifecycle takes two years, larvae occur every year.

Pruinose Scarab

Adults mate and lay 20–40 eggs. Eggs are typically laid during summer (December to mid-January) and hatch in late summer (February). Large larvae start to occur in

[1] Beehag, Gary W. & Kaapro, Jyri. & Manners, Andrew. 2016, *Pest management of turfgrass for sport and recreation / Gary Beehag, Jyri Kaapro and Andrew Manners* CSIRO Publishing Clayton, South VIC

March and April. The larval period extends from late summer through to late spring (April to September), for up to nine months. The third instar larvae are most active and damaging between March and April. Third instars continue to be active during warmer winter conditions until they complete their development.

Effective scarab management programmes are based on the preventative application of chloronicotinyl or diamide insecticides made at the time of egg laying or presence of young larvae. That's why it's important to understand the lifecycle of the species affecting your turf.

Now is the time to plan your preventative scarab grub programmes to maximize control. Here's how:

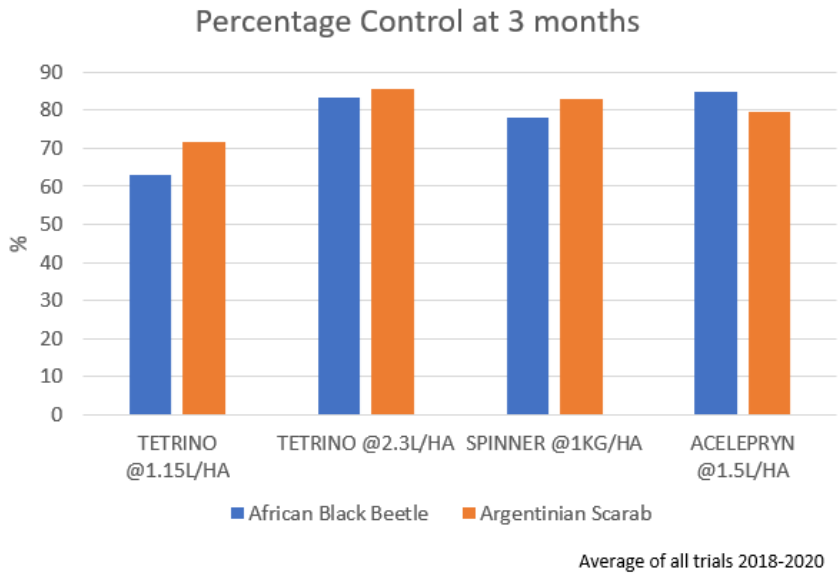
- **A brand new solution for grub control from Bayer** – a new active ingredient, tetraniliprole in the product Tetrino® Turf Insecticide from Bayer, has shown effective control of scarab grubs in research trials conducted over the past several years. Tetrino has also shown excellent control of other important pests like Argentine Stem weevil, caterpillars pests like sod webworm, cutworms and armyworms.

- **Timing is everything** – understand the lifecycle of the scarab species in your location and the activity of the insecticide to get season long control. These products have a long soil residual under "typical" conditions, but weather extremes can shorten this period.

- **Apply the right rate** – the higher rates on a label will give you season long residual control.

- **Water it in** - irrigation or rainfall should occur after application to move any active ingredient targeting grubs through the thatch into the soil profile (where the grubs are feeding). Water rates on labels range from 3 to 12mm depending on the insecticide.

- **Minimize thatch** – high thatch layers can severely limit insecticide movement to the area of grub feeding.



In trials Tetrino has demonstrated season long scarab control equivalent to industry standards

Fox damage on a fairway infested with Argentinian Scarab Larvae

Argentinian Scarab Larvae

For further information on Tetrino please visit www.bayeramplifyturf.com.au