

Chafer Grub Biology and Effective Control

- What are Chafer Grubs?

Chafer grubs are the larvae of chafer beetles, they live in the soil and feed on turf roots.



- Is any turf at risk from chafer grubs?

Yes, chafer grubs eat the roots of grasses and weeds in turf. They prefer light sandy or chalky soils however, they will infest any soil type given the opportunity. Fine sports turf is most at risk including golf greens and tees, lawns, bowling greens, sports fields and gallops.



- What species cause the most damage?

The species most often found damaging sports turf are the Garden Chafer (*Phyllopertha horticola*) and the Cockchafer (*Melolontha melolontha*)

- Chafer biology and identification

Garden Chafer

The Garden Chafer is the most important chafer pest of lawns and sports turf, occurring in large numbers and causing considerable damage due to the grubs feeding on the grass roots. The adults have a metallic green head and metallic bronze body are about 10mm in size and are mainly seen in May and June. In areas with heavy infestations large numbers of adults are often seen during

daylight hours crawling across the grass laying eggs. Very small grubs hatch from June or July onwards and immediately start feeding until they are fully grown by the autumn. When fully grown the grubs are around 15mm in size. Most damage, first showing as brown patches of turf, will become evident from late summer onwards when the larvae are nearly fully grown. The main damage will be due to secondary feeding from badgers, foxes and crows as they scratch the surface to reveal the grubs. The grubs usually stop feeding in the autumn and go deeper in the soil profile to avoid frost, but if the winter is mild they could continue feeding and causing damage. The grubs pupate in spring and emerge as beetles in May and June. This pest completes its lifecycle in one year.



Cockchafer

The Cockchafer or Maybug is much bigger with the adult beetle being 20-30mm long, chestnut brown in colour and with characteristically feathered antennae. The adult beetles are mainly seen at night during May and June and sound like a bumble bee when flying. The females burrow into the soil and lay their eggs from May onwards with the small larvae hatching roughly four weeks later. When fully grown the larvae are much larger than the Garden Chafer larvae, reaching about 30-35mm. The larvae usually occur in smaller numbers but feed for up to 3 years before they pupate and emerge as adults the following spring. The damage the larvae cause to turf is the same as the Garden Chafer but usually less widespread. This pest completes its lifecycle in three years.



- Controlling Chafer Grubs using Merit Turf®

Merit Turf® is a granular formulation which should be evenly spread over the desired area at a rate of 30kg/ha. The treated area should be irrigated afterwards to push the active substance through the thatch and into the root zone where it will begin to work. If irrigation is not readily available application should be timed when rain is due (but not during rain).

Merit Turf® will work all year round from one application. It can be applied at any time of year however for maximum control the product is best applied during spring/early summer when the adult beetles are active and the young grubs are feeding.

Merit Turf® has a direct affect on newly hatched and young larvae causing them to stop feeding immediately and die. The grubs will either be affected by eating the turf roots (where the product has been transported systemically) or by absorption through their outer body. The older and larger chafer larvae will also be affected from feeding on treated turf however they will take longer to control and will gradually disappear over a number of weeks depending on their size. Merit Turf® will also reduce the damage caused by older stages of the Cockchafer, which are in their second or third years of development. With this species, there is a need to treat for 3 consecutive years, to prevent damage through their whole lifecycle.

With both the Garden Chafer and the Cockchafer, in areas with light soil conditions that have been shown to be at risk from chafer infestation in the past, it is advisable to treat annually during spring/early summer to prevent re-infestation and protect the turf from damage.

- **What other control methods are available?**

Physical control - rolling and scarification

Regular scarification to break the thatch and bring the grubs to the surface is often used as part of an integrated approach to chafer control. This will disrupt the grubs feeding and make them more readily available to birds. Regular heavy rolling especially in early spring will help kill pupae and emerging adults.

Biological control (nematode)

Nematodes will not totally eradicate the problem however, if applied during optimum conditions they should reduce the population to a manageable level and are often used as part of an integrated pest management system. Nematodes should be drenched onto the turf during summer and early autumn, the turf should be kept moist for two weeks after application for maximum effects.

Maintain turf quality

The only other factor to consider is turf quality. A number of publications have suggested that Chafer larvae are more frequent on poorly maintained turf and newly cultivated land. Some people have found that Chafer infestations can be reduced through cultivation, feeding, watering and good weed control. However, this method alone will not eradicate the problem.

