Black Beetle

Introduction

Black beetle (*Heteronychus arator*) is a pest that attacks pasture species such as ryegrass and paspalum, and will also attack maize, sweet corn, potatoes, kumara and strawberries. Black beetle was first found in New Zealand around Auckland in the 1930's and originates from South Africa. Black beetle tend to be prominent 2 to 3 years out of every 10, generally following abnormally warm seasons. Black beetle is normally found throughout the top half of the North Island.

Description

Adults are glossy black beetles, 12-15 mm in length. Larvae are soft and creamy in appearance with a C-shaped body and a hard head capsule. Larvae can be up to 25mm in length when fully grown. Eggs are white, oval and about 2 mm in length. All are pictured above.

Life cycle

Eggs are laid from October to January and the larvae (grubs) must complete their development through three stages over summer. They pupate during February-March, emerging as adults in March when they set about dispersing either by over ground movement or flights. Cool seasons can set population development back a month. Black beetle require temperatures greater than 10^{o}C for activity.

Damage

Pasture damage from black beetle larvae is most likely to occur from January to March when the third stage grub is present. The grub stages feed primarily on the roots of grasses, often close to the surface. Both adults and larvae feed on the roots of grasses, maize and other crops. Damage to pastures can appear similar to that of grass grub. However, black beetle damage occurs over summer, and not autumn/winter as for grass grub. The amount of damage tends to vary one year to the next, dependant on populations, and is generally linked to climatic conditions.

Management

Ten adult beetles per square metre is considered to be the threshold for taking action against black beetle in pasture, although currently there are very few control options available aside from sowing resistant grasses. Ergovaline, one of the three known significant compounds produced by standard type endophyte (*Neotyphodium lolii*), protects plants from feeding by Black beetles. As they are prevented from feeding, the beetles are unable to build up the fat deposits necessary to survive the winter.

The tolerance of ryegrass containing endophytes that do not produce ergovaline or which produce low levels of ergovaline is generally lower than ryegrass producing higher levels of ergovaline.

The use of forage crops which disrupt the black beetle lifecycle, as part of a pasture renewal programme is a useful option for controlling populations in pastures.

Seed treatments such as Gaucho and can provide protection from attack by adult beetles, assisting seedling establishment.

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