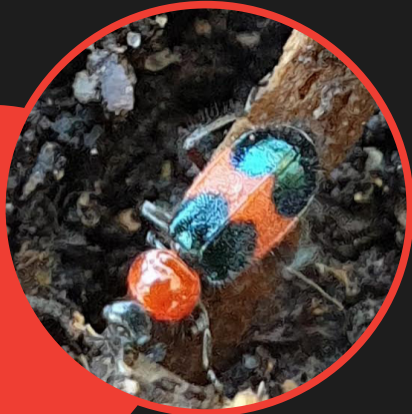


Red and blue beetles are soil-dwelling predatory beetles that live on the soil surface, more common in drier regions



A red and blue beetle

A group of small beetles that look similar to ants are anthicid beetles (Family Anthicidae) which are poorly understood but are likely to include predatory species which could prey on pests such as mites and lucerne flea



An Anthicid beetle



A ladybird beetle
(*Hippodamia variegata*)

BEETLES: PESTS AND BENEFICIALS



IPM Technologies P/L
Paul Horne

A green advertisement for INSECT Decide insecticide. The text 'INSECT Decide' is prominently displayed. Below it are icons of a fly, a ladybug, a caterpillar, and a grasshopper. To the right, three colored boxes list the active ingredients: Benevia® INSECTICIDE (purple), Coragen® INSECTICIDE (dark purple), and Avatar®eVo INSECTICIDE (orange). The FMC logo and 'An Agricultural Sciences Company' are at the bottom.

Introduction

There are both important pest species and beneficial species of beetles. Beetles are insects with the first pair of wings modified into a hard case (called the elytra), and this successful feature has resulted in many species (over 30,000 in Australia). Some of the commonly found groups are described here.



Catadromus, a carabid beetle



Isopteron



Pterohelaeus

Pests

The larval (immature) stages of some species in the Family Tenebrionidae are known as false wireworms. Only a few are important pests (including species of *Isopteron*, *Pterohelaeus* and *Gonocephalum*). These are native to Australia and can damage germinating seedlings but most species are not pests.



Gonocephalum



Adelium



False wireworm

A very large group of beetles is the weevils (Family Curculionidae). Adult weevils are characterised by having elbowed antennae coming off a “nose” and many adult weevils are flightless. Immature stages have no legs and in some species the head-capsule is difficult to see. Immature stages of many species live below the ground but some, such as vegetable weevil, are pests above the ground.



Mandalotus weevils



Elephant weevil



Weevil larvae



Vegetable weevil

Scarab beetles (Family Scarabaeidae) include some important pests (such as cockchafers) but also some very important beneficial species (such as dung beetles).



Blackheaded cockchafer



Yellowheaded cockchafer

The larval stages of a very few species in the Family Elateridae (click beetles) are known as true wireworms and can damage crops at establishment.



True wireworm



Click beetle

Predators

Carabid beetles, also known as ground beetles, are beetles in a large group (Family Carabidae). Most species are predatory or scavengers and they are generally known as good biological control agents in many agricultural systems. They all have a similar body shape with a pair of large jaws projecting forward, and they use these to capture their prey (which may be pest mites, aphids, caterpillars etc). Larval stages usually live below the soil surface and are also predatory.



Catadromus



Different species of carabid beetles

Staphylinid beetles, also called rove beetles, have a very short elytra under which their hind wings are folded. This leaves the abdominal segments exposed and so they look like earwigs without “pincers”. Like carabid beetles they are generally predatory, both as adults and larvae, with different sized species eating different prey.



A carabid larva



A staphylinid beetle