Department of Primary Industries and Regional Development
GOVERNMENT OF WESTERN AUSTRALIA
Protect Grow Innovate

PestFacts WA

Issue: 3
Date: May 2024

Contents

Using pitfall traps to detect pests

Growers are urged to observe their emerging crops and pastures for pest activity, particularly insecticide resistant redlegged earth mite (RLEM) populations and pests which may have survived typically used rates of insecticide, such as weevils, beetles, earwigs and balaustium and bryobia mites.

Some pests are frustratingly difficult to find because they are tiny, camouflaged and often active at night. This is especially true with weevils such as desiantha weevil, vegetable weevil and the new Dongara weevil species.

Pests can go unnoticed before they build up to damaging populations. While many can be found by inspecting the base of plants, in the soil and under stubble, some are more elusive. Those that attack plant roots or only emerge at night, such as vegetable weevils, are particularly challenging to detect.

A manual pitfall trap placed in the ground is one method to assess pests that may be difficult to find in low numbers, or during the day. A simple cup with a small amount of water can be placed into the soil within the paddock, left overnight and checked the next day. For more information on how to monitor early season pests, including how to set up a pitfall trap, see DPIRD's How to monitor for early season pests YouTube video.

Remote imaging pitfall trap surveillance

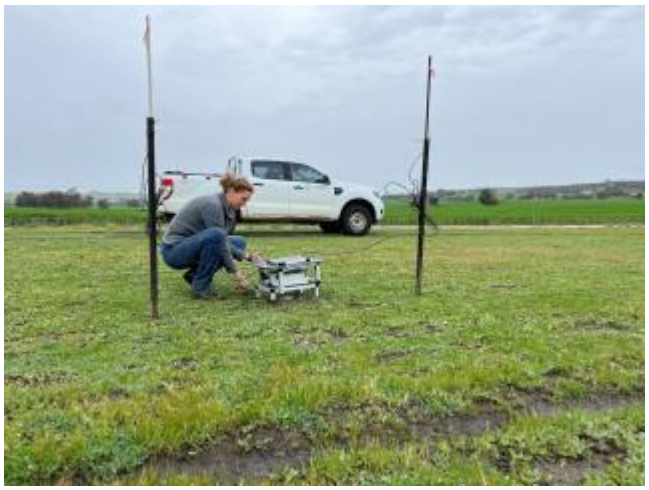

Image 1: Technical Officer Danae Warden (DPIRD) installing a remotely monitored pitfall trap in pasture at Brookton in May 2024. Photo courtesy of: Christiaan Valentine (DPIRD).

As part of a GRDC co-investment called the National Grains Diagnostics and Surveillance Initiative (NGDSI), DPIRD has developed, in collaboration with Quisitive, a remotely imaging pitfall trap. These can trap ground dwelling pests such as weevils at any time, image them at high resolution, which can then be viewed and identified remotely from a computer anywhere.

So far in 2024, DPIRD researchers have installed remotely monitored pitfall traps to provide near real time identification of pest threats in 17 paddocks located in the northern, central and southern grain regions.

Vegetable weevils captured in a remotely monitored pitfall trap located in Albany. Photo courtesy of: Danae Warden (DPIRD).

Pitfall traps at Brookton are being monitored to observe actual hatch dates of RLEM in comparison to the predicted hatching date. Pitfall traps near Albany are being monitored for Desiantha weevils, and pitfall traps near Nangetty and Mingenew are being monitored for Dongara weevils.

Pitfall trap findings will be regularly shared via the PestFacts WA newsletter.

Further information

You can request or confirm identification of potential broadacre insect pests by emailing the PestFacts WA team at pestfactswa@dpird.wa.gov.au or by contacting one of the following DPIRD Research Scientists Svetlana Micic in Albany on +61 (0)8 9892 859, Andrew Phillips in Geraldton on +61 8 9956 8567 or Dusty Severtson in Northam on +61 8 9690 2160.

Article author: Bec Severtson (DPIRD Northam).

Cockchafer larvae are damaging crops

- Lake Grace
- Kulin

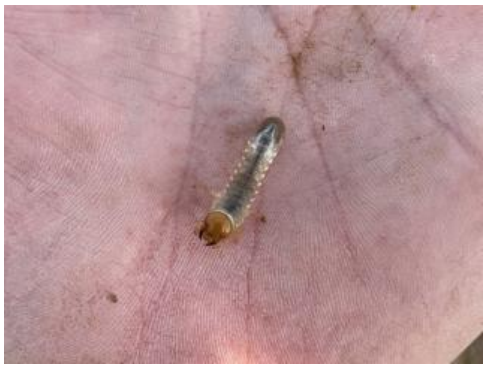

Image 2: A cockchafer larva (species yet to be determined). Photo courtesy of: Ben Whisson (ConsultAg).

Ben Whisson (ConsultAg) recently found cockchafer larvae causing damage to cotyledon canola near Lake Grace and germinating lupins at Kulin. Samples of these larvae will be collected to determine if it's a local native species.

Growers and consultants are encouraged to distinguish between cockchafer species as numerous cockchafers in the WA grainbelt are native species that do not typically damage crops.

African black beetle

Image 3: An African black beetle larva. Photo courtesy of: DPIRD.

The African black beetle (ABB) is a soil dwelling insect. ABB larvae are ‘C’ shaped, creamy-white with dark heads, have three pairs of legs on the thorax and can grow up to 25 mm long. They can be identified from other Australian cockchafer species with the naked eye, as their anal opening and associated spines are horizontal.

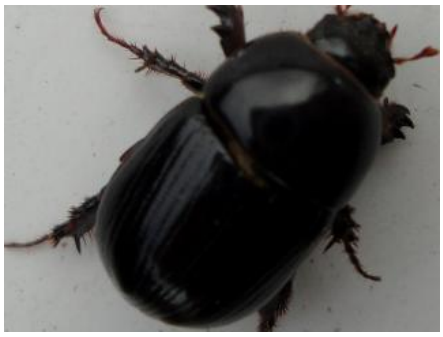

Image 4: An adult African black beetle. Photo courtesy of: DPIRD.

The adult beetles are 12-14 mm long, cylindrical and glossy black in colour.

ABB adults and larvae can also be differentiated from other cockchafer species by their feeding habits, as they only feed on cereal crops. When cereal crops are at the seedling stage ABB adults and larvae can cause significant damage.

ABB adults are strong fliers but tend to colonise the same paddocks. ABB adults are usually more common in higher rainfall areas closer to the coast and where there has been an abundance of summer perennial grasses such as kikuyu and couch. Crops after pasture are more likely to be damaged.

Large populations of ABB adults and larvae can chew cereals and perennial grass pasture plant parts that are below ground, resulting in bare patches. Adults chew plants at or just beneath ground level, leaving frayed parts. Adults either chew right through the stem or ‘ring bark’ bigger plants.

ABB and their larvae are difficult to control. The beetles can come to the surface at night but like their larvae they predominantly feed underground. To be effective insecticide needs to penetrate the soil surface where the larvae and beetles are.

Native cockchafers

Image 5: The vertical anal opening of a Heteronyx obesus larva. Photo courtesy of: DPIRD.

Native cockchafer larvae can be differentiated from other cockchafer species by their vertical anal opening.

Native cockchafers are typically not considered agricultural pests. However, two species, *Heteronyx obesus* and *H. elongatus* can occasionally damage crops. *H. obesus* can severely damage a range of crops and pastures, while H. elongatus feeds on pastures and eucalypt seedlings.

The larvae in the genus *Heteronyx* can only be differentiated by the layout of hairs around the anus.

The adults are nectar feeders and have few distinguishing features. Infestations of 20 grubs per square metre are known to cause crop thinning while more than 50 grubs can destroy crops.

Chemical control of cockchafers is only effective if the chemical can reach the larvae in the soil. As they do not come to the surface, spraying the soil surface is of no benefit. Applying a registered product during seeding provides the best results.

For more information about these native cockchafer species refer to DPIRD's Cockchafer damage to broadacre crops page.

For more information on invertebrates contact Research Scientist Svetlana Micic, Albany on +61 (0)8 9892 8591 or Technical Officer Alan Lord, South Perth on +61 (0)8 9368 3758.

Article authors: Cindy Webster (DPIRD Narrogin) and Svetlana Micic (DPIRD Albany).

Caterpillars continue to feed on crops

Prior to the recent rains, conditions across much of the WA grainbelt have been warm and dry, and caterpillars, such as cabbage centre grub, have been damaging crops that were already moisture stressed.

Cabbage centre grub and weed web moth

- Nabawa
- Maya
- Dongara
- Yuna
- Carnamah
- Goodlands

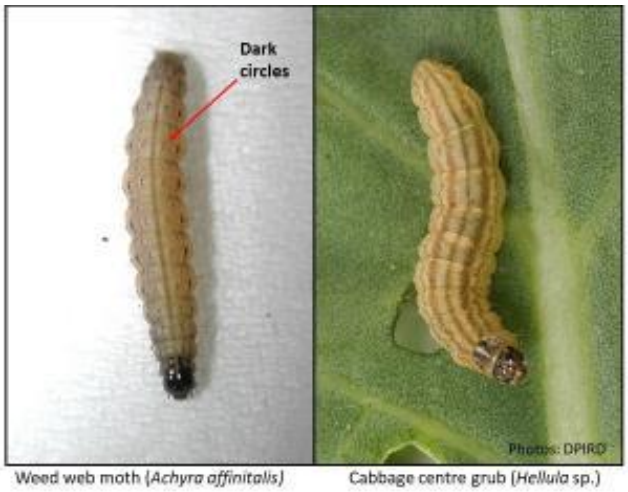

Image 6: A weed web moth caterpillar (left) and a cabbage centre grub caterpillar (right). Photos courtesy of: DPIRD.

Cabbage centre grub larvae have been recently found in 5 leaf canola at Nabawa and cotyledon 2 to 4 leaf canola at Maya, Dongara and Yuna.

Weed web moth caterpillars were reported on canola at Carnamah and Goodlands.

These caterpillar species can look very similar but weed web moth caterpillars can be distinguished from cabbage centre grub caterpillars by the presence of dark circles along their body. For more information refer to DPIRD's 2020 PestFax Issue 2 article Caterpillars continue to cause concern.

Diamondback moth

- Cadoux
- Gibson
- Boyatup

Image 7: A diamondback moth caterpillar. Photo courtesy of: Millie Brady (Esperance Rural Supplies).

Quenton Knight (Agronomy Focus) has found moderate levels of diamondback moth (DBM) larvae damaging 2-4 leaf canola at Gibson and Boyatup (east of Esperance). Quenton commented that recent high daily temperatures since germination on May 6 have

resulted in ideal conditions for DBM larvae populations to increase and damage young crops. Millie Brady (Esperance Rural Supplies) also found DBM caterpillars in cotyledon to 1 leaf canola near Gibson.

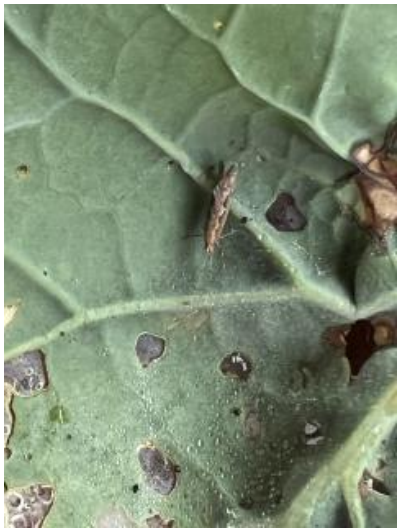

Image 8: An adult diamondback moth feeding on volunteer canola. Photo courtesy of: David Stead (Anasazi Agronomy).

David Stead (Anasazi Agronomy) has reported that DBM are present in canola crops throughout Cadoux. David also found DBM larvae and moths on volunteer canola and radish that survived the knockdown herbicide in Roundup Ready (RR) 4 leaf canola south of Cadoux. Cabbage centre grub caterpillars were also present in that crop.

DBM larvae are rarely an economic problem early in the season and tend to ramp up late winter and into spring. However, warm and dry conditions favour DBM feeding and reproduction and considerable leaf damage may be experienced.

Growers are reminded that DBM have shown high levels of resistance to many insecticide groups including synthetic pyrethroids (e.g. alphacypermethrin, esfenvalerate, gamma cyhalothrin, lambda cyhalothrin), carbamates (e.g. methomyl) and organophosphates (e.g. chlorpyrifos). For a list of registered chemicals for DBM in canola, refer to DPIRD's 2023 winter spring insecticide guide.

Managing caterpillars and considering beneficials

Growers are advised to monitor their paddocks for caterpillar activity and spray only if they are present and feeding on the crop.

If numbers warrant spraying then growers and consultants can refer to DPIRD's 2024 autumn winter insecticide guide.

For a list of insecticides with their toxicity to beneficial insects, refer to Cesar Australia's Beneficials Chemical Toxicity Table.

Growers should consider insecticide options that are soft on predator insects if spraying.

More information

The PestFacts WA Reporter app is temporarily unavailable. You can request or confirm identification of potential broadacre insect pests by emailing the PestFacts WA team at pestfactswa@dpird.wa.gov.au or by contacting one of the following DPIRD Research Scientists Svetlana Micic in Albany on +61 (0)8 9892 859, Andrew Phillips in Geraldton on +61 8 9956 8567 or Dusty Severtson in Northam on +61 8 9690 2160.

Article authors: Dusty Severtson & Bec Severtson (DPIRD Northam).

Mite and lucerne flea update

Redlegged earth mites (RLEM), bryobia mite, balaustium mite, brown wheat mite and lucerne flea are being reported on a variety of crops, in increasing numbers, across the WA grainbelt.

Redlegged earth mites

- Brookton
- Esperance
- Narrikup
- Katanning
- Bridgetown

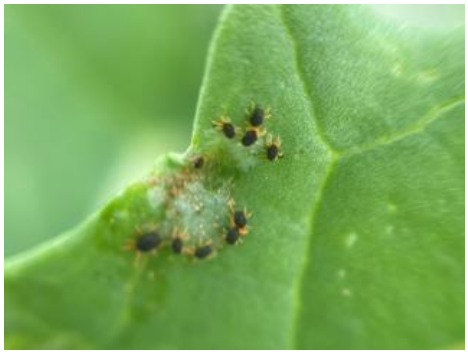

Image 9: Redlegged earth mites on canola. Photo courtesy of: Amber Balfour-Cunningham (DPIRD).

RLEM hatching has been widespread in central and southern areas with the cooler and wetter weather. They have been reported on canola and clover at Brookton and Bridgetown, on oats at Esperance, on clover at Narrikup and on canola, barley and wheat at Katanning.

Many of these reported hatchings have matched the dates predicted by Cesar Australia's online RLEM egg hatch calculator. Growers are urged to monitor for RLEM activity in their paddocks and be wary of insecticide resistant populations. Many crops would have received a bare earth insecticide spray many weeks ago, and germinating seedlings will be unprotected from mites and lucerne flea which hatch from oversummering eggs.

Knowing the hatch date of RLEM can be used to target monitoring efforts and insecticide sprays.

Bryobia and balaustium mites

- Northampton
- York
- Goomalling
- Calingiri
- Wyening
- Gnowangerup
- Cascade

Image 10: Adult bryobia mite. Photo courtesy of: Andrew Weeks (Cesar Australia).

Bryobia mites have been found on canola at York, Goomalling, Calingiri, Wyening, Gnowangerup and Cascade.

Image 11: A balaustium mite. Photo courtesy of: DPIRD.

Balaustium mites have been found on canola at Northampton.

Brown wheat mite

- Gnowangerup
- Lake Varley
- Ravensthorpe
- Esperance

Image 12: Brown wheat mite on a volunteer wheat leaf. Photo courtesy of: Jack Batchelor (Nutrien).

The less common brown wheat mite has been reported on volunteer wheat at Gnowangerup, barley at Lake Varley and Ravensthorpe and oats at Esperance.

This mite is a sap-sucking pest of cereals that is most active in dry warm weather. For more information see DPIRD's Diagnosing brown wheat mite page.

Lucerne flea

- Northampton
- Cunderdin
- Moora

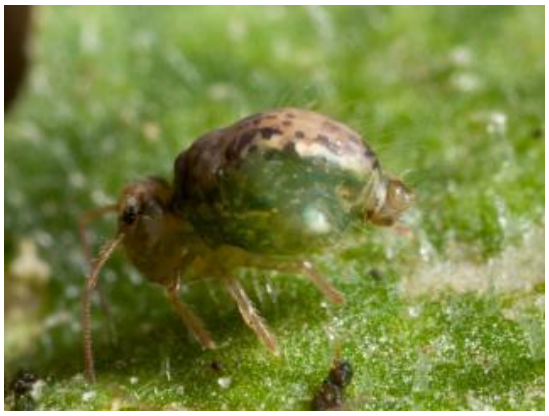

Image 13: Adult lucerne flea. Photo courtesy of: Andrew Weeks (Cesar Australia).

Lucerne flea have been reported on barley and lupin seedlings at Northampton, and on canola seedlings at Cunderdin and Moora.

It is important to remember that lucerne flea have different environmental requirements for oversummering eggs to hatch, and so they often hatch at different times than RLEM. For more information on diagnosing and managing lucerne flea, refer to DPIRD's Diagnosing lucerne flea page.

Management of mites and lucerne flea

Before spraying for mites, consider if the crop is outgrowing the feeding damage. In many years, and under good growing conditions, mites emerge from eggs during or after crop germination and the plants outgrow mite feeding damage. High numbers of mites in crops often occur after a pasture rotation, whereas continuously cropped paddocks often have low to negligible numbers of mites due to well timed insecticide sprays in previous crops.

Further information

Correct identification of mites is also critical for effective control, as different species can vary in their susceptibility to certain insecticide groups, either naturally or through insecticide resistance. You can request or confirm identification of mites by emailing the PestFacts WA team at pestfactswa@dpird.wa.gov.au.

For more mite information contact Research Scientist Svetlana Micic, Albany on +61 (0)8 9892 8591.

Article author: Bec Severtson (DPIRD Northam).