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

PestFacts WA

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Native budworm caterpillars are attacking wheat crops

- Geraldton
- Ajana
- Yuna

Native budworm caterpillar eating the boot of a wheat plant. Photo courtesy of DPIRD.

Agronomists and growers have reported significant feeding damage to wheat crops near Geraldton, Ajana and Yuna by native budworm larvae. The caterpillars were found feeding on the wheat glumes at grain fill stage, prompting enquires into economic thresholds for wheat. One agronomist noted that native budworm were not feeding on nearby canola and

lupin crops, and that the damage to wheat appeared more severe near bushland, indicating a possible link between wild radish and pest pressure.

Research conducted by the Department of Primary Industries and Regional Development (DPIRD), with investment from the Grains Research and Development Corporation (GRDC), suggests that earlier and heavier native budworm moth migration events are not only putting greater pressure on known host crops but also forcing native budworm to colonise and damage non-traditional host crops such as wheat. This has been particularly evident when wild radish was present.

Native budworm moths prefer to lay eggs on wild radish and volunteer lupins in wheat crops, making weed control a critical part of preventing moths from laying eggs in crops and larvae from transferring onto and feeding on wheat plants in spring. Although in years when native budworm migratory flights are particularly high in number and occur earlier than usual, wheat crops may be at risk of increased egg laying regardless of volunteer lupin and wild radish control. Hence, sweep netting cereal crops for native budworm may be warranted. However, budworm growth and reproduction on wheat is significantly slower than pulses and canola, and consequently the numbers required for action are high. For native budworm larvae in wheat, the threshold is likely to be higher than 50 larvae per 10 sweeps or 5 larvae per square metre. For more information on this research refer to the 2023 GRDC Groundcover article Is native budworm targeting wheat crops?

Correctly identifying caterpillar species in cereal crops

There are several species of pest caterpillars that can cause varying amounts of damage to the upper leaves and heads of cereal crops, so it is important to correctly identify what is in your crop before making management decisions.

Native budworm, *Helicoverpa punctigera*

Lesser budworm, *Helicoverpa punctifera*

The native budworm caterpillar (left) has black hairs, while the lesser budworm caterpillar (right) has white hairs. Photos courtesy of DPIRD.

Native budworm (*Helicoverpa punctigera*) is a major crop pest of pulses and canola, and in recent years has also been a minor pest of wheat. Their caterpillars can be identified by three longitudinal stripes, small pale spots, and the presence of black hairs.

The lesser budworm (*Heliothis punctifera*) caterpillar looks similar to native budworm but can be differentiated by its white hairs along the whole body. This species prefers cereals,

but is usually found in low numbers, and the PestFacts West Australian (WA) team has historically not received reports of this pest requiring control in the WA grainbelt.

Armyworm caterpillars on wheat heads (left) and an armyworm caterpillar with the three stripes on its collar circled (right). Photos courtesy of DPIRD.

Common armyworm (*Leucania convecta*) caterpillars usually have smooth bodies with a few fine hairs. They can be distinguished from the native budworm caterpillar by the three parallel stripes running along the collar behind the head.

Growers can use the PestFacts WA Reporter app to have caterpillars identified.

Management

Growers and agronomists can access DPIRD's free MyPestGuide CropScout application and enter their native budworm caterpillar monitoring results into the sweep net module to calculate spray thresholds quickly in the field. This tool applies to native budworm present in canola, lupins and pulses, but not wheat. A high number of native budworm caterpillars in wheat (more than 50 larvae per 10 sweeps or 5 larvae per square metre) is required to warrant spraying.

The lesser budworm rarely requires control in WA broadacre crops. If you do find lesser budworm feeding on crops, you can make a report and request more information via the PestFacts WA Reporter app.

Common armyworm are a major pest, defoliating cereal crops and feeding on stems, which can result in head or panicle loss. Thresholds for armyworms are 10-15 caterpillars per square metre during tillering, and 1-3 per square metre during crop ripening and grain fill stages.

For more information, refer to the 2025 PestFacts Issue 14 article Check your crops for native budworm caterpillars.

For a list of insecticides registered for use on pest caterpillars see DPIRD's 2025 Winter Spring Insecticide Guide.

Further information

For more information about the native budworm and its impact on crops refer to the department's Native budworm page.

To read about prior native budworm activity this season refer to the 2025 PestFacts WA articles in:

- Issue 15 Native budworm caterpillar update
- Issue 14 Check your crops for native budworm caterpillars
- Issue 12 Native budworm migration update
- Issue 10 Why are we seeing native budworm larvae so early?

For further information on native budworm contact Senior Research Scientist Dusty Severtson in Northam on +61 8 9690 2160 or Research Scientist Andrew Phillips in Geraldton on +61 8 9956 8567.

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Natural enemies are active

- Ogilvie
- Nabawa
- Allanooka
- Mingenew
- Bolgart
- Northam
- Dale
- Kendenup
- Katanning
- Kojaneerup

A variety of natural enemies (parasitoids, predators, and pathogens) are being found across the WA grainbelt in canola crops and driving down numbers of pest insects.

The Diadegma wasp is one of the many parasitoid wasp species. Photo courtesy of DPIRD.

Robert Campbell (Nutrien) has reported that parasitoid wasps are attacking green peach aphids (GPA) in canola at Mingenew and they are currently keeping the GPA population under control. Parasitoid wasps lay their eggs on or inside their host and after hatching, the larvae consume the host, killing it in the process.

An adult hoverfly. Photo courtesy of DPIRD.

When conducting insect surveillance over the past month, Department of Primary Industries and Regional Development (DPIRD) research scientists and technical officers have found:

- **Parasitoid wasps** in canola crops at Ogilvie, Nabawa, Allanooka, Northam and Katanning.
- **Aphids infected with a naturally occurring fungus** in canola near Northam and Katanning. The fungal infection has resulted in the death of entire aphid colonies.
- **Adult hoverflies** in canola near Bolgart, Kendenup and Kojaneerup.
- **Adult lacewings** in canola near Ogilvie, Northam, Bolgart and Kendenup.
- **Adult ladybirds** in canola near Dale.

For more information on this insect surveillance in canola crops, refer to the 2025 PestFacts WA Issue 7 article Timely pest alerts for canola growers.

Growers are reminded to keep an eye out for beneficials, such as parasitoid wasps, ladybird beetles, predatory shield bugs, lacewings and hoverflies, before spraying, as they can keep pest numbers below threshold levels but are susceptible to insecticides. Descriptions of beneficial species present in broadacre cropping can be found in the Grains Research and Development Corporation's (GRDC) Beneficial insects – the back pocket guide.

Growers are also encouraged to check aphid numbers before spraying, as naturally occurring fungal infections can cause aphid colonies to collapse, reducing the need for chemical control.

Careful insecticide application

Avoiding calendar applications of insecticide sprays will assist the activity of existing natural enemies or beneficial insects in suppressing pests.

If pest numbers and associated plant damage do warrant spraying, growers should consider insecticide options that are soft on beneficial insects. Pyrethroids, organophosphates and other broad-spectrum insecticides will kill parasitoid wasps and other beneficial insects.

Pests such as the diamondback moth and GPA are also resistant to many broad-spectrum insecticides, so these products need to be selected carefully for efficacy and not-target impacts.

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

For information on registered rates of insecticides, growers can refer to DPIRD's 2025 Winter Spring Insecticide Guide.

Beneficial insect research

DPIRD is co-investing in a 5-year national GRDC project led by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). This project is researching the use of predatory insects that target canola pests. The project is a collaboration with the South Australian Research and Development Institute (SARDI), New South Wales Department of Primary Industries (NSW DPI) and Murdoch University.

The two trial sites at Northam and Katanning have found that parasitic wasps were present from the start of the growing season, with aphid and caterpillar parasitoids now being detected more frequently as the season progresses. Including beneficial organisms in the monitoring program can help in decision-making for management. The research aims to generate information that will help growers better enlist the allies in the system, the beneficial organisms, in their pest management program.

Further information

For more information on beneficial insects, refer to the GRDC Beneficial insects – the back pocket guide.

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