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

PestFacts WA

Issue: 14
Date: September 2025

Contents

Brown spot in lupins

- Greenhills

Brown spot on lupins. Photo courtesy of: Anonymous reporter.

Brown spot was recently found on lupins (var. unknown) near Greenhills. The plants were at the early flowering growth stage.

Low levels of brown spot can often be seen in areas with regular lupin cropping, particularly in wetter winters, but it seldom causes significant crop damage under current production systems.

Biology and symptoms

Brown spot, caused by *Pleiochaeta setosa*, is the most widespread foliar disease of lupins in Western Australia (WA). It affects all growth stages, with seedlings being most vulnerable – early infections can stunt growth or cause death.

The fungus also causes Pleiochaeta root rot in lupins.

Spores persist in soil and stubble, spreading via rain splash. Seed-borne infections contribute to long-distance spread. Infected leaves drop, allowing spores to develop on dead tissue and enter the soil, where they can remain dormant for years.

Brown spot symptoms on lupin stems. Photo courtesy of DPIRD.

Symptoms include dark brown leaf lesions, stem flecks that may form cankers, and pod lesions.

Recent heavy rain has favoured disease spread in lupin crops.

Management

Foliar fungicide sprays are ineffective and not registered for this disease, but there are other management strategies that can be employed to reduce the development of this disease in future growing seasons.

Crop rotation

Avoid consecutive lupin crops. A 2-3 year break with non-host crops reduces soil spore levels.

Seed treatment

Use fungicidal seed dressings to suppress early infection and reduce leaf drop. For more information on fungicides, refer to the Department of Primary Industries and Regional Development's (DPIRD's) Fungicides page.

Stubble retention

Retain cereal stubble to limit rain splash and spore dispersal.

Sowing depth

Sow lupins deeper (approximately 5 cm) to reduce root contact with spore-rich soil.

Seed selection

Use clean, disease-free seed. Avoid seed from infected pods.

Resistant varieties

Select newer *Lupinosis angustifolius* varieties with improved resistance. For more information on varieties, refer to DPIRD's 2025 WA Crop Sowing Guide.

Canopy closure

Promote early canopy closure through timely sowing, adequate nutrition, and higher seeding rates.

Minimal tillage

Reduce soil disturbance to limit spore movement into the root zone.

More information

For more information refer to DPIRD's Foliar diseases and their management in lupins factsheet.

For more information contact Principal Research Scientist Geoff Thomas in Perth on +61 8 9368 3262, or Research Scientist Zia Hoque in Perth on +61 422 018 633.

Article authors: Cindy Webster (DPIRD Narrogin), Zia Hoque (DPIRD Perth) and Geoff Thomas (DPIRD Perth).

Article input: Jean Galloway (DPIRD Northam).

Armyworm update

- West River
- Neridup

Armyworm caterpillars have been found in flowering wheat (var. Scepter) near West River. There were three caterpillars per square meter.

An armyworm caterpillar on a wheat head. Photo courtesy of Quenten Knight (Agronomy Focus).

Low numbers of armyworm have also been reported by Quenten Knight (Agronomy Focus) in wheat (var. Brumby) near Neridup.

Armyworm caterpillars are most damaging in barley crops close to harvest, so growers are encouraged to monitor cereal crops now and correctly identify armyworm caterpillars from other caterpillars that appear in cereals, such as the fall armyworm and native budworm. The PestFacts WA Reporter app can be used to request a free diagnosis of caterpillars found in the paddock.

Biology and feeding symptoms

The appearance of armyworm caterpillars in crops is unpredictable.

The collar of the armyworm has three parallel white lines, as circled (left). The native budworm caterpillar's collar does not have this pattern (right). Photos courtesy of DPIRD.

Armyworm caterpillars have smooth bodies and can be distinguished from other caterpillars by three parallel white stripes on the collar just behind the head.

The first visible sign of armyworm caterpillars is often their green or straw-coloured droppings, about the size of a match head, found on the ground between the cereal rows.

When barley crops are maturing in spring, large armyworm caterpillars climb plants and can chew through the green stems, causing heads to fall to the ground. Damage to wheat and oat crops occurs less frequently and is usually minor in comparison to barley, because their stems are thicker and leaf defoliation does not usually result in yield loss.

Assessing the number of armyworm caterpillars in a cereal crop can be difficult, as their movements from the ground to the canopy will vary with weather conditions and feeding preference. Sometimes they are found sheltering on the ground and under leaf litter, while on other days they will be high up on the plants or on the heads, where they can be easily collected with sweep nets. Larger caterpillars often prefer to hide during the day and feed at night.

Management

Growers are encouraged to monitor their paddocks for armyworm caterpillars.

The economic threshold for armyworm in mature barley is about three large caterpillars per square metre of crop. The threshold for wheat or oats is much higher, at about 10 caterpillars per square meter of crop.

A number of effective insecticides are registered for the control of armyworm if required. However, their effectiveness depends on good penetration into the crop. This can be difficult to achieve in high-yielding, thick canopy crops, especially when caterpillars are resting under leaf litter at the base of plants. Spraying late in the afternoon or evening is recommended, as armyworm is predominately a night feeder.

If applying insecticide, be mindful of harvest chemical withholding periods and to check chemical labels before spraying. For more insecticide information refer to DPIRD's 2025 Winter Spring Insecticide Guide.

If spraying, growers should consider using insecticides that are less harmful to beneficial predator insects. For information on insecticide toxicity to beneficial insects, refer to Cesar Australia's Beneficials Chemical Toxicity Table.

More information

To read about earlier armyworm activity reported this season, refer to the 2025 PestFacts WA Issue 9 article Check crops for caterpillars.

For more information on armyworm, refer to DPIRD's Armyworms and their management in cereal crops factsheet.

For more information refer contact Senior Research Scientist Svetlana Micic in Albany on +61 8 9892 8591 and Research Scientist Andrew Phillips in Geraldton on +61 8 9956 8567.

Article authors: Cindy Webster (DPIRD Narrogin) and Christiaan Valentine (DPIRD Northam).

Article input: Svetlana Micic (DPIRD Albany).

Check your crops for native budworm caterpillars

Caterpillar activity

- Dalwallinu
- Goomalling
- Southern Cross
- Howick

A native budworm caterpillar chewing a lupin pod. Photo courtesy of DPIRD.

Native budworm caterpillars have reached above threshold levels in some central and Esperance areas of the grainbelt, following the moth flights detected in pheromone traps during August by volunteer farmers, agronomists and Department of Primary Industries and Regional Development (DPIRD) staff. Read more about these moth flights in the 2025 PestFacts WA Issue 12 article Native budworm migration update.

A volunteer trapper near Southern Cross detected caterpillars ranging in size from less than 5 mm to more than 10 mm in a podding chickpea crop. One caterpillar, less than 5 mm, was found in a nearby podding lentil crop. Large moth flights had been detected by pheromone traps in these crops during July and August.

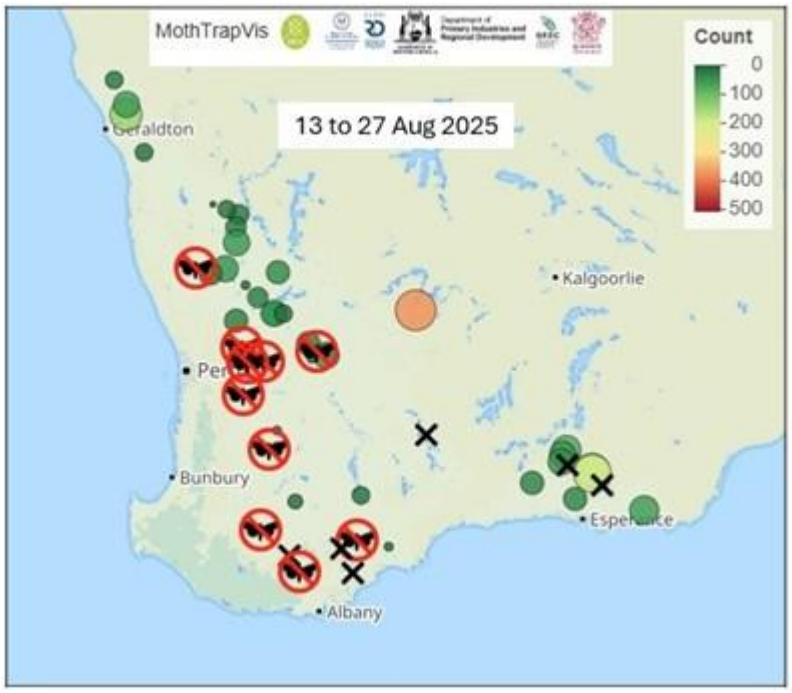
An average of four caterpillars per 10 sweeps were detected in a lupin crop near Goomalling, and two caterpillars were detected after sweeping a field pea crop near Dalwallinu.

An average of six caterpillars per 10 sweeps was reported in a canola crop at Howick. This follows a moth flight of 55 moths over 14 days recorded two weeks earlier.

Native budworm moth egg laying can be patchy. Recently, the PestFacts WA team has received reports from growers of neighbouring crops with above threshold caterpillars, while finding none or only a few caterpillars in their own nearby crops.

Moth trapping update

Over the past week, volunteer trappers have reported the following native budworm moth counts: Southern Cross (lentils 138 moths, chickpeas 43), Wittenoom Hills (field peas 52), Dalwallinu (field peas 33), Buntine (lupins 24) and Wubin (lupins 9). Moth counts from mid to late August are shown in the map below.



A MothTrapVis map showing native budworm moth trapping results from 13 to 27 August 2025. X indicates no data, and the red and black moth symbol indicates no moths in trap. Map courtesy of Cesar Australia.

A mapped view of all recent native budworm trap captures is available at Cesar Australia's MothTrapVisWA page. Viewers need to select the desired trapping date range.

Native budworm moth migratory flights are unpredictable, and migrations are likely to continue throughout spring. Temperatures, crop density and crop growth stage (flowering and podding) influence the number of eggs laid by native budworm moths.

The weekly trapping is part of a program to monitor the potential risk of native budworm caterpillars to pulse and canola crops. While moth flights detected by pheromone trapping can serve as an early warning of pest arrival, they do not directly indicate the numbers of caterpillars that will hatch. However, they can guide the timing of field monitoring to determine if the numbers of caterpillars have reached economic thresholds.

Crop susceptibility

As host crops progress toward podding, sweep netting to estimate caterpillar numbers becomes more important. The feeding behaviour of native budworm caterpillars varies depending on the type of crop they feed on.

- **Field pea, chickpea, lentil and faba bean crops** are very susceptible to caterpillars of all sizes during pod formation and development. Tiny caterpillars can enter developing pods and damage the seed or devour the entire contents of the pod.

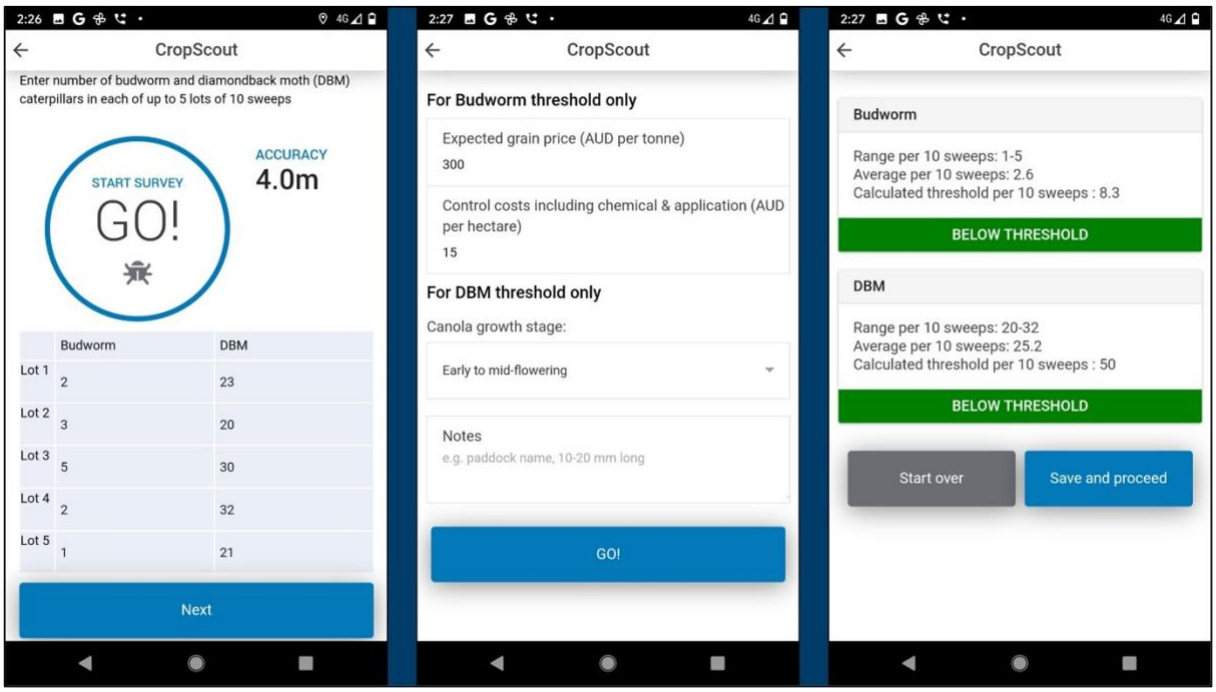
- **Narrow-leafed lupin** pods and seeds will not be damaged until they are close to maturity, when the pods are losing their green colouration. Pod walls are not penetrated until the caterpillars are more than 15 mm in length.
- **Canola** is similar to narrow-leafed lupin - pods become attractive to caterpillars as the crop nears maturity and begins to hay-off. Caterpillars of all sizes will enter pods at this stage, with larger caterpillars causing the most damage.

Sweep netting may be less efficient in tall, dense crops, and it may be difficult to sweep plants that are stiff with spiky pods. An alternative to sweeping, to count caterpillars, is to cut plants from several places in the crop and, at each sample point, shake caterpillars into a white tray or bin.

The easiest method for assessing crop-wide damage levels is to sample small areas from the crop, either a tenth of a square metre, or an equivalent number of plants to those typically found in a square metre.

Calculating spray thresholds

Growers and agronomists can access DPIRD's free MyPestGuide CropScout app and enter their results into the sweep net module to calculate native budworm spray thresholds quickly in the field.



For more information on the economic threshold for when to spray, refer to DPIRD's Native budworm spraying threshold factsheet. Pesticide options for the control of native budworm can be found in DPIRD's 2025 Winter Spring Insecticide Guide.

Further information

Detailed information on this pest can be found at the department's Native budworm page. To read about prior native budworm activity this season refer to the 2025 PestFacts WA articles in:

- Issue 12 article Native budworm migration update

- Issue 10 article Why are we seeing native budworm larvae so early?
- Issue 9 Native budworm moth update
- Issue 8 Native budworm moth flights have started
- Issue 7 Native budworm moth trapping program will begin in July. Would you like to host a trap?

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.

Article author: Bec Severtson (DPIRD Northam).