PestFacts WA

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Diagnosing patchy crops

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- Cuballing

A circular patch of poor growing Scepter wheat plants surrounded by healthier plants. Photo courtesy of DPIRD.

In a Scepter wheat crop near Yuna, patches of poor growth ranging from 2 to 4m in diameter have been reported. The crop was at the second node growth stage. Soil and plant samples were collected and tested for root disease and plant parasitic nematodes. The presence of *Rhizoctonia solani* was confirmed.

Similar patches of poor growth have also been identified near Cuballing in Spartacus barley at the second node growth stage.

Patchy growth in cereals may result from soilborne diseases such as rhizoctonia and take-all, plant parasitic nematodes (e.g. root lesion nematodes (RLN)), or non-disease (abiotic) factors. Multiple constraints can co-exist in affected areas.

Accurate diagnosis now and in spring, using DPIRD's Diagnostic Laboratory Services (DDLS) or tools such as Predicta B, can help guide effective disease management decisions for 2027. Growers are encouraged to investigate poor-performing patches early to reduce disease carry-over and improve paddock productivity next season.

Take-all

Wheat plant roots affected by take-all. Photo courtesy of: DPIRD.

Take-all is a fungal root disease affecting wheat and barley, particularly in Western Australia's (WA's) medium to high rainfall areas.

In the crop, look for patches (up to several metres in diameter and with indistinct and irregular edges) of white tillers and heads containing shrivelled or no grain. Black lesions (often referred to as 'black socks') will be present on crowns and stems. The roots of affected plants are blackened, brittle and break easily, with black discolouration extending through the entire root rather than just the outer surface. Yield losses can be severe if unmanaged.

A grass-free break crop (e.g. canola or lupins) and strict weed control are essential to reduce inoculum levels.

Accurate diagnosis, using DPIRD's Diagnostic Laboratory Services (DDLS) or tools like Predicta B, can support planning for 2027.

For more information on take-all refer to DPIRD's Soil Quality: 5 Soil Biology e-book or Soil Quality's Take-all disease factsheet.

Rhizoctonia root rot

Distinct rhizoctonia root rot patches in a barley crop. Photo courtesy of: DPIRD.

Plant roots affected by rhizoctonia. Photo courtesy of: DPIRD.

Rhizoctonia root rot, caused by *Rhizoctonia solani* AG8, is widespread across WA's cereal growing regions.

Infected crops may show sharply defined patches of stunted plants with spear-tipped roots. Early root infection leads to distinct bare patches, while later crown root infection causes uneven growth from reduced tillers. Weeds often thrive in these areas due to reduced crop competition.

For 2027, growers with confirmed rhizoctonia should consider a grass-free break crop such as canola, pulses, or clean pasture. Canola rotations have proven effective in reducing inoculum levels, although rhizoctonia may return in the second cereal year. Deep tillage (e.g. mouldboard ploughing) and sub-seed furrow loosening can also help reduce disease pressure.

Seed dressings and in-furrow fungicide treatments are registered for use in cereals for the suppression or control of rhizoctonia. For more information, refer to DPIRD's Fungicides page.

For detailed information about management options for rhizoctonia, refer to:

- Grains Research and Development Corporation's (GRDC's) Tips and Tactics Rhizoctonia factsheet
- DPIRD's Rhizoctonia in your paddocks YouTube video
- GRDC's Managing Rhizoctonia in wheat and barley YouTube video
- DPIRD's Soil Quality: 5 Soil Biology e-book.

Root lesion nematodes

A microscopic view of root lesion nematodes (stained pink) in the root system. Photo courtesy of DPIRD.

Nematodes are microscopic, worm-like creatures that occur in many forms and are important to soil biological structure. Plant parasitic nematodes naturally live and feed on the plant root systems, and most plants can tolerate low levels without any ill effect. However, when populations of plant parasites like root lesion nematodes (RLN) increase to damaging levels, yield is likely to be impacted. These impacts are exacerbated by environmental stresses such as moisture stress, poor soil fertility, or soil compaction.

Like other soilborne disease issues, nematode damage to root systems causes patches of uneven and ill-thrifty growth in susceptible crops. Infested paddocks are often more prone to weediness due to slower canopy cover. Above-ground symptoms of plants infected with RLN include stunting, poor growth, fewer tillers, early wilting and lower leaves turning yellow prematurely and dying back from the tips.

Cereal roots with lesions from nematode feeding activity (left) and cereal roots with more advanced nematode damage (right). Photos courtesy of: DPIRD.

Below-ground symptoms often include poor root systems with sloughing of the root cortex, fewer lateral roots or root hairs compared to nearby healthy plants. Brown or dark coloured lesions along the roots are also common.

Unfortunately, common crop rotations in WA are dominated by susceptible crops. Many growers are reducing the frequency of break crops, such as lupins and field peas, and instead are growing predominantly cereal-canola rotations. Canola, wheat, barley and oats are susceptible to RLN. This can cause plant parasitic nematode numbers to accumulate to high levels, resulting in significant yield losses.

Four species of RLN are commonly found in Western Australia: *Pratylenchus neglectus*, *P. quasitereoides*, *P. thornei,* and *P. penetrans*. Other plant parasitic nematodes that have the potential to cause yield loss in WA include the cereal cyst nematode and the burrowing nematode. Correct identification of nematode type and species is important, as different RLN species have different crop-feeding preferences. Therefore, selecting a suitable crop and variety to mitigate future crop damage depends on knowing which plant parasitic nematode species are present.

Cereal cyst nematodes symptoms in wheat in 2025 near Woorree Geraldton. Photo courtesy of DPIRD.

Management relies on reducing nematode numbers by growing less susceptible crop varieties, resistant break crops, early sowing, in-crop weed management or a weed free fallow. Where nematode populations are high, a break of more than one season may be needed.

Refer to DPIRD's 2026 WA Crop Sowing Guide for nematode resistance classifications for different cereal varieties.

Common WA weeds and some pastures can also be susceptible to nematodes. Controlling summer weeds and keeping in-season weeds under control in infested paddocks are important management practices.

For more information on nematodes, refer to:

- DPIRD's Root lesion and burrowing nematodes and their management factsheet
- GRDC's Root lesion nematode – West Australia YouTube video
- DPIRD's Soil Quality: 5 Soil Biology e-book.

Root disease diagnostics

Patches caused by rhizoctonia or RLN are difficult to distinguish from each other without close inspection of the plant roots. Further laboratory testing is often required to identify the primary cause of the issue.

In some cases, a combination of diseases and nematodes are responsible.

There is nothing that can be done in-season to control root diseases but knowing what they are in the current season can help growers prepare for the next season.

How to send plants to be diagnosed

For diagnosis of root disease or nematode problems in-crop, growers and consultants can carefully dig up symptomatic plants from the edge of the patch (not the centre) as well as healthy plants from outside the patches. The department's YouTube video How to take a plant sample shows the correct method to use.

For all testing enquiries and to submit plant specimens for testing to DPIRD Diagnostic and Laboratory Services (DDLS), please email DDLS@dpird.wa.gov.au or phone +61 8 9368 3351.

More information

For more information contact Principal Research Scientist Daniel Hüberli in Perth on +61 427 426 522, Senior Research Scientist Sarah Collins in Perth on +61 404 488 113, or Research Scientist Carla Wilkinson in Perth on +61 8 9368 3862.

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Lupin sclerotinia stem rot: management and new app

Ongoing wet conditions and dense crop canopies will favour sclerotinia infection in lupin crops. Growers in areas with a history of sclerotinia are reminded to consider their sclerotinia risk when their lupin crops are close to or at flowering. The disease needs to be managed before sclerotinia symptoms are observed.

Symptoms

Sclerotinia in lupins is predominantly caused by *Sclerotinia sclerotiorum*, the same pathogen that causes sclerotinia stem rot in canola.

Sclerotinia infection on a lupin pod. Photo courtesy of DPIRD.

Sclerotinia canopy infection is the most common infection pathway, occurring when aerial ascospores released from apothecia infect petals during crop flowering. The pathogen subsequently colonises stems, branches, leaves and pods, with lesions typically developing in the upper canopy. Research conducted in Western Australia over the past five years has shown that canopy infection is widespread and can cause substantial yield losses through stem damage, pod infection and premature senescence.

Basal sclerotinia stem rot infection displayed as fluffy white fungal growth at the base of a lupin stem. Photo courtesy of DPIRD.

Basal sclerotinia is a distinct infection pathway from canopy infection, in which sclerotia germinate myceliogenically and directly infect stems at ground level under prolonged wet soil conditions. White, cottony mycelial growth girdles the stem, causing the plant tissue above the lesion to wilt and die. DPIRD surveys have shown that basal sclerotinia has increased across Western Australia over the past five years and, since 2020, has been observed more frequently in lupins and other pulse crops than in canola. Basal infection is also more damaging than canopy infection, often causing more than twice the yield loss in infected plants due to complete stem girdling and premature plant death.

Management

Currently no foliar fungicides are registered or recommended for reducing basal sclerotinia infection in lupins.

DPIRD research has shown that regular rainfall and high humidity (>75%) in the 3 weeks before and after commencement of flowering are most conducive for damaging levels of canopy sclerotinia to occur in crops. While fungicide application reduces disease severity, it does not necessarily give a yield response, so it's important to consider crop risk and value of disease management carefully each season.

Several fungicide products are registered for the control of canopy sclerotinia in canola while options in lupin are more limited. Fungicides need to be applied as recommended per product label. Strategic and responsible use of fungicides will reduce the risk of fungicide resistance developing.

Based on the extensive research conducted by DPIRD the following in-season sclerotinia management options for lupin are:

- Aim to apply fungicide from full to late flowering on the main spike to protect main stem pods as they emerge and penetrate the lower canopy
- There are only limited registered fungicides for managing sclerotinia canopy infections in lupins. It is important to check the labels for withholding periods.

For more information on registered foliar fungicides for canola and pulses, including lupins, in WA, refer to DPIRD's Fungicides page.

Growers and consultants are encouraged to report to the PestFacts WA service any apothecia finds or disease observations as the season progresses.

SclerotiniaLM app and webinar

The new SclerotiniaLM decision support tool is available for use by lupin growers during flowering to help determine the likely economic returns from applying fungicide at a specific time during lupin flowering growth stages for the control of sclerotinia stem rot. The user can specify individual paddock data/history as well as recent and expected weather conditions so that the output relates to their own cropping circumstances. The SclerotiniaLM tool can be downloaded from the App Store or Google Play Store and can be used on both phones and tablet devices. For more information refer to DPIRD's SclerotiniaLM decision support tool page.

A webinar is being delivered on Thursday 30 July at 1pm that will discuss this new app and managing sclerotinia in lupins. To register for this webinar, click here.

Further information

Further information on sclerotinia stem rot in lupins can be found at DPIRD's Sclerotinia stem rot and its management in lupins factsheet and the Grains Research and Development Corporation's (GRDC) Lupin sclerotinia disease risk assessment guide factsheet.

For more information on sclerotinia in lupins contact Senior Research Scientist Ciara Beard in Geraldton on +61 (0)8 9956 8504, Principal Research Scientist Geoff Thomas, in Perth on +61 (0)8 9368 3262 or Research Scientist Zia Hoque in Perth on +61 (0)8 9690 214.

For more information on the SclerotiniaLM app, contact Principal Research Scientist Jean Galloway in Northam on +61 (0)8 9690 2172.

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Black cutworm and pasture day moth caterpillars

Black cutworm

- Holleton

Black cutworm caterpillars feeding on canola. Photo courtesy of Courtney Piesse (Agronomique Services).

Courtney Piesse (Agronomique Services) recently found black cutworm caterpillars feeding on canola near Holleton.

Pasture day moth caterpillars

- Dumbleyung
- Holleton

A pasture day moth caterpillar. Photo courtesy of DPIRD.

Principal research scientist Dustin Severtson (DPIRD) recently found large pasture day moth caterpillars feeding on capeweed in a clover pasture north of Dumbleyung.

Pasture day moth caterpillars have also recently been found feeding on canola at Holleton.

Monitoring and identification

Correct identification is important before deciding whether insecticide control is necessary because caterpillar species differ in their feeding habits and damage potential. If you are unsure which caterpillar species are present, use the PestFacts WA Reporter app to request a diagnosis.

Cutworm caterpillars are smooth, plump and greasy looking with a dark head. They grow to 40 to 50 mm long before pupating in the soil. Several species occur in WA, including common, black, pink and patterned cutworms. They usually feed at night on crop and pasture plants cutting stems off at the base. Daytime feeding occurs occasionally when numbers are very high. During the day, caterpillars shelter in the soil near damaged plants.

Growers should monitor crop edges, paddocks with a green bridge and areas adjacent to pasture. Cutworm caterpillars are usually found just below the soil surface during the day and emerge to feed at night. As a guide, two large caterpillars per 0.5 m row of cereals can cause extensive damage.

Pasture day moth caterpillars are dark brown with yellow and reddish orange markings They have two prominent yellow spots near the end of the body and an orange-black head. They remain on plants during the day and grow to about 60mm long before pupating. These moths mainly feed on broadleaf pasture species and weeds and are rarely a pest of canola.

Management

Growers are encouraged to monitor paddocks for caterpillar activity and only apply insecticides when caterpillars are present, actively feeding, and the crop is unable to

outgrow the damage. Under favourable growing conditions, crops can outgrow minor feeding damage.

If caterpillar numbers warrant spraying, growers and consultants can refer to DPIRD's 2026 autumn winter insecticide guide.

Spraying late in the afternoon or evening is recommended for cutworm caterpillars as they are predominately night feeders.

Pasture day moth caterpillars are easily controlled by insecticides.

If spraying is required, 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.

Further information

For more information, refer to Cesar Australia's Cutworm and Pasture day moth PestNotes.

To read about earlier caterpillar activity this season, refer to the 2026 PestFacts WA newsletters:

- Issue 11 Armyworm and brown pasture loopers are causing damage
- Issue 3 article Weed web moth and other caterpillars are damaging crops
- Issue 7 article Caterpillars are active.

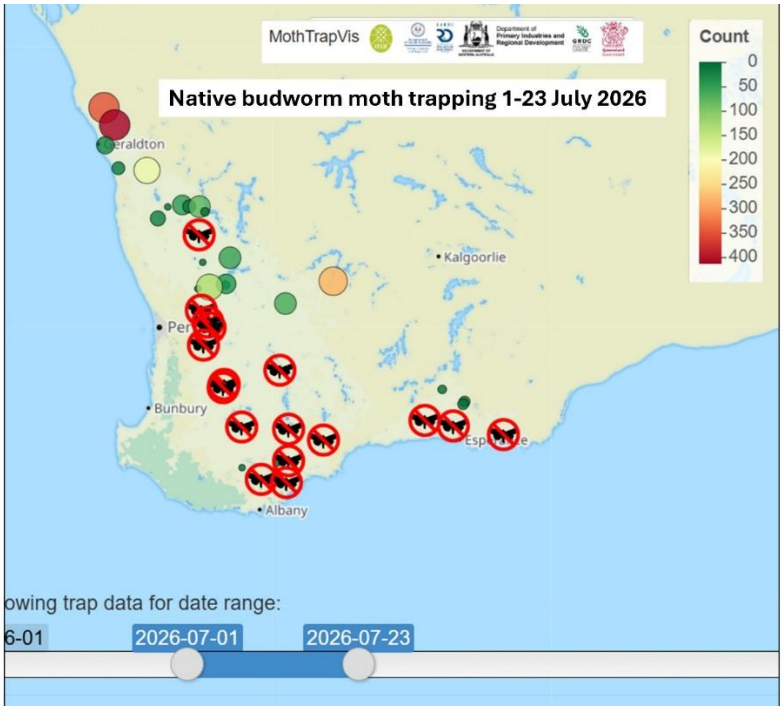
For more information, contact Senior Research Scientist Svetlana Micic in Albany on +61 8 9892 8591.

Article authors: Cindy Webster (DPIRD Narrogin), Bec Severtson (DPIRD Northam) and Svetlana Micic (DPIRD Albany).

Waves of native budworm moth migration detected

- Ogilvie
- Nabawa
- Southern Cross
- Goomalling

Pheromone trapping has detected the arrival of large numbers of native budworm moths in some northern, central and eastern grainbelt areas during July, providing an early warning that moths are present and may have started laying eggs onto crops.



MothTrapVis map showing native budworm moth trapping results from 1 to 23 July 2026. Map courtesy of Cesar Australia.

All canola and pulse crops grown in Western Australia are susceptible to native budworm caterpillars, including lentils, field peas, faba beans, chickpeas and lupins. Other hosts plants include vetch, serradella and lucerne.

Growers and consultants in these areas are encouraged to check their crops in the coming weeks, as caterpillar offspring from these flights may be present. For more information on when to start checking for caterpillars, refer to the 2026 PestFacts WA Issue 7 article Would you like to host a native budworm moth trap this year?

DPIRD's 2026 native budworm moth trapping program commenced in June and volunteer trappers, who play an important role in broadening the moth trapping network, have or are about to commence trapping this month or in early August.

Native budworm moths captured in pheromone bucket trap at Ogilvie, 23 July 2026. Photo courtesy of DPIRD.

Over the past two-week period, DPIRD staff recorded large numbers of moths at Ogilvie (308 moths) and Nabawa (348). Very few or no moths were recorded in traps at Wongan Hills, Bolgart, Northam, Dale, York, Narrogin, Cascade, Gibson and Howick.

In the past week, volunteer trappers have reported the following moth counts: Southern Cross (276 moths), Goomalling (122), Collgar (61), Badgerin Rock (47), Eganu (20), Grass Patch (7), Salmon Gums (4), Maya East (4), Buntine (2), Coorow (1), York (0), Kulin (0), Pingrup (0) and Nalyerlup (0).

The moths have migrated from the northern and north-eastern pastoral areas, where native budworm live year-round. While the numbers of trapped moths are relatively large, particularly north of Geraldton, they are not as large or have arrived as early as in previous years.

In previous years, large moth migration events have not always resulted in caterpillar detections in crops. This may be attributed to several factors, including very low winter temperatures that are not conducive for reproduction and survival, the presence of natural enemies, and natural fungal infections that occur in moist canopies.

It is likely that further native budworm moth migrations will occur further south and west as we move into spring. It is especially important to monitor crops as the temperatures rise in August, as warmer daytime temperatures increase insect reproduction, growth rate and feeding activity.

Moth flight activity updates

You can view a live map of native budworm moth trap results via Cesar Australia's MothTrapVisWA page. Use the date-range bar at the bottom of the map to track weekly changes in moth flight numbers.

Weekly moth trap data are also posted on DPIRD's Native budworm moth trapping page.

More information

To read about earlier native budworm moth flights this season, refer to the 2026 PestFacts WA Issue 9 article Early native budworm moth flights detected in northern and central regions.

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

If you are interested in hosting a trap, please contact DPIRD Research Scientist Bec Severtson in Northam.

For further information on native budworm contact Principal Research Scientist Dusty Severtson in Northam on +61 8 9690 2160 or Research Scientist Christiaan Valentine in Northam on +61 8 9690 2197.

Article author: Bec Severtson (DPIRD Northam).

Russian wheat aphid activity update

- Moora
- Coomalbidgup
- Neridup

A cluster of Russian heat aphids (left) and Neo barley plants displaying symptoms of feeding damage (right). Photos courtesy of David Pfeiffer (Synergy Consulting).

David Pfeiffer (Synergy Consulting) has recently found Russian wheat aphids (RWA) in Neo barley south of Moora. Plants displayed typical RWA feeding symptoms, including white longitudinal streaks on the leaves. The barley crop had not been treated with a seed dressing.

Agworld app users have reported finding RWA in wheat near Coomalbidgup and barley near Neridup.

Growers are urged to monitor wheat and barley crops for RWA from stem elongation onwards, especially in wheat or barley crops that have not received an insecticidal seed treatment. Oats are not considered susceptible.

Monitoring and management

RWA adults are only about 2mm long, pale yellowish green with a fine waxy coating. RWA antennae are short, and the siphunculi (sometimes called cornicles) do not extend from the back end. They are typically found at the base and sheath of younger leaves and within leaves curled lengthwise by their feeding.

Start monitoring wheat and barley crops for RWA from stem elongation (GS30), by inspecting the edges where aphids often colonise first, or where plants are under stress. Look for streaking damage near the base of newly emerged leaves, while keeping in mind that RWA damage can look similar to herbicide damage, mite feeding damage or can resemble wheat streak mosaic virus symptoms.

Very low numbers of RWA can cause symptoms to appear on plants as early as seven days after infestation. Plant damage symptoms will persist on plants, even if RWA colonies have not survived. It is important to get an accurate assessment of percentage of tillers with RWA and not use damage symptoms as a measure of RWA presence. RWA is more likely to be detected on tillers and threshold feeding damage met if seed treatments have not been applied.

Crop yield loss is influenced by the percentage of tillers with RWA per paddock. A RWA threshold calculator is available on the Grains Research and Development Corporation's (GRDC's) Russian wheat aphid page.

If RWA are at threshold and warrant spraying, then growers and consultants can refer DPIRD's 2026 Winter Spring Insecticide Guide.

Further information

Please continue to report any suspect detections of RWA, or RWA damage, by using DPIRD's PestFacts WA Reporter app.

To view other cereal aphid activity reported to the PestFacts WA team recently, refer to the PestFacts WA map.

To read about previous RWA activity reported this season, refer to the 2026 PestFacts WA Issue 6 article Identifying and managing cereal aphids.

For more information on RWA, refer to DPIRD's Aphid feeding damage and its management in cereal crops factsheet and GRDC's Russian wheat aphid page.

For more information on Russian wheat aphids, or other aphids, contact Senior Research Scientist Svetlana Micic in Albany on +61 (0)8 9892 8591.

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