PestFacts WA

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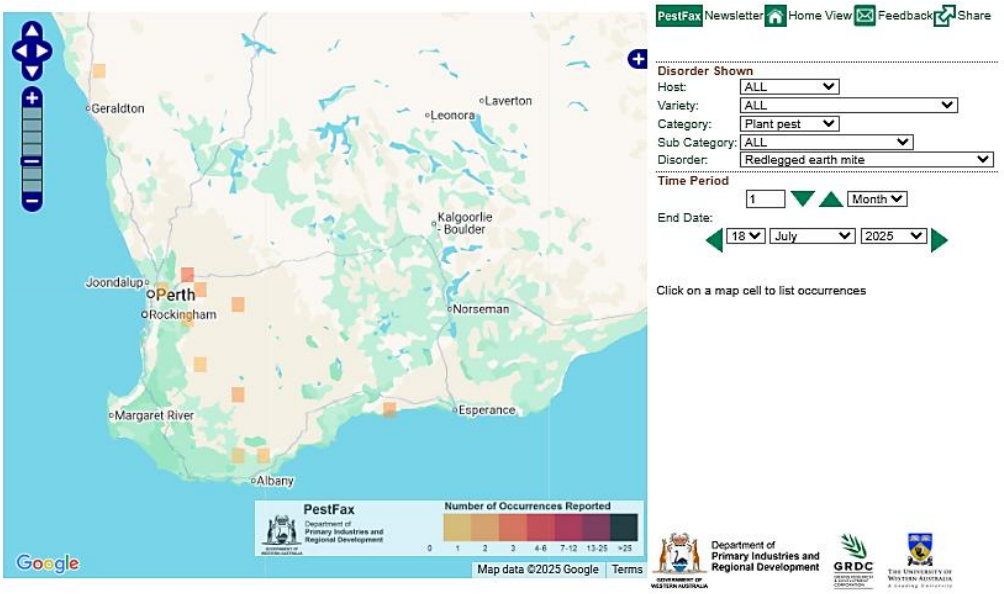
Contents

Redlegged earth mite activity and management

- Ogilvie to Jerdacuttup

Redlegged earth mites. Photo courtesy of DPIRD.

Over the past four weeks the PestFacts WA team has received reports of redlegged earth mites (RLEM) in various crops and pastures ranging in location from Ogilvie in the north to Jerdacuttup in the south (see the PestFacts WA map screenshot below).



A screenshot of the PestFacts WA map that displays redlegged earth mite occurrence reports for the month prior to Friday 18 July 2025. Map courtesy of DPIRD.

Managing redlegged earth mite and insecticide resistance

Insecticides are the primary means of managing RLEM, but resistance in WA populations of RLEM is becoming more widespread. This means that it's important to ensure insecticides are only applied when needed. The first step in managing RLEM should be to reduce risk within a paddock using the following strategies:

- avoid sowing highly susceptible pasture species (e.g. clover, medics) or crops (e.g. canola) in paddocks known to have high RLEM numbers
- control weeds, especially broadleaf weeds, both within paddocks and along fence lines
- include a cereal crop rotation to help suppress mite numbers
- graze pastures heavily in spring and/or burn stubble to reduce mite numbers the following autumn.

Insecticides should only be used when the risk of mite damage in the following season is high. This includes situations such as:

- high RLEM numbers or significant feeding damage in the paddock during late winter-spring
- plans to sow a susceptible crop (for example, canola, medic or clover) the following season.

Use the TIMERITE® tool to help decide when to apply insecticides for redlegged earth mites. The TIMERITE® tool is not effective for helping other mite pests (such as blue oat mites). More information on this tool can be found in the next article.

More information on managing RLEM can be found in the GRDC Redlegged earth mite Best Practice Management Guide.

Redlegged earth mite resistance testing service

DPIRD, through a project led by Cesar Australia with investment from GRDC, will be conducting RLEM resistance testing this year. If you observe RLEM surviving insecticide

applications, please contact DPIRD Senior Research Scientist Svetlana Micic to discuss the situation and arrange for paddock testing.

More information

To read about earlier RLEM activity refer to the 2025 PestFacts WA Issue 5 article Bryobia mites and redlegged earth mites are damaging moisture stressed crops and Issue 4 article Redlegged earth mites are hatching.

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

This PestFacts WA article was informed by the GRDC Ground Cover article Tools at the ready to help manage RLEM.

Article authors: Cindy Webster (DPIRD Narrogin), Paul Umina (Cesar Australia) and Aston Arthur (Cesar Australia).

Article input: Svetlana Micic (DPIRD Albany).

TIMERITE® tool for redlegged earth mite control updated

Redlegged earth mites. Photo courtesy of Andrew Weeks (Cesar Australia).

The TIMERITE® tool, developed more than 20 years ago to predict the ideal time to reduce redlegged earth mite (RLEM) numbers using insecticides, has been updated to improve its efficacy and usability.

Originally developed and funded by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Australian Wool Innovation (AWI), TIMERITE® predicts the timing of RLEM diapause and provides growers with a spring spray date to reduce RLEM numbers the following autumn on their farms.

These initial predictions were based on daylength and long-term seasonal patterns.

While a valuable tool, the static model did not account for the influence of changing climatic conditions. Recent research has shown that moisture and temperature also significantly affect diapause timing, presenting an opportunity to enhance the original approach.

In response, TIMERITE® has been updated to improve efficacy and usability by Cesar Australia in collaboration with CSIRO, AWI, Grains Research and Development Corporation (GRDC) and Meat & Livestock Australia.

Key improvements include:

- enhanced modelling that incorporates climate variability and climate change
- greater flexibility in spray timing through a better understanding of control effectiveness before and after the predicted date
- a more accessible, user-friendly online platform.

These updates have resulted in the recommended spray dates shifting, so it is recommended that growers check that they have the best spray date.

The updated TIMERITE® tool is now available at timerite.com.au.

Before making management decisions, ensure the mite population is predominately RLEM, as TIMERITE® is not useful for management decisions against other mite pests (such as blue oat mites).

Further information

For more information on the TIMERITE® tool visit the AWI TIMERITE webpage.

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

This PestFacts WA article was informed by the GRDC Ground Cover article Tools at the ready to help manage RLEM.

Article authors: Paul Umina (Cesar Australia) and Aston Arthur (Cesar Australia).

DPIRD's Crop Insect and Disease Identification Workshop

DPIRD Research Scientist Christiaan Valentine leading a hands-on component of the 2023 insect identification workshop. Photo courtesy of DPIRD.

Agronomists and grain industry professionals are encouraged to submit their expressions of interest (EOIs) now for the Department of Primary Industries and Regional Development (DPIRD) broadacre crop insect and disease identification workshop, taking place Tuesday 19 August to Thursday 21 August 2025 in Perth.

This highly regarded, hands-on training event is a great opportunity for anyone working in crop protection or agronomy in WA to sharpen their insect and plant disease ID skills and deepen their understanding of integrated pest and disease management.

Places are limited and enrolments close next Friday 25 July 2025, so submit your EOI now to secure your spot.

Dates:

- Tuesday 19 August: Insect identification and integrated management.
- Wednesday 20 to Thursday 21 August: Disease identification.
- Thursday 21 August: Fungicide resistance seminar by Dr Fran Lopez (Centre for Crop and Disease Management).

Venue:

- Metro Hotel Perth, 61 Canning Highway, South Perth WA.

Attendees will be able to take home valuable resource materials.

Participants can choose to attend either or both components.

Course fees (excluding GST):

- $400 for the full three-day program.
- $300 for the two-day disease module.

- $150 for the one-day insect module.

These fees include a course reference book and catering.

The workshop is co-funded by the Grains Research and Development Corporation (GRDC) through the “Seasonal status of pests and diseases delivered to growers project” (DAW2404-005RTX).

Register your EOI and more information

To register your interest in attending and for further details, contact Research Scientist Cindy Webster in Narrogin on +61 8 9881 0201 or +61 404 819 534.

Article author: Cindy Webster (DPIRD Narrogin).

Check crops for caterpillars

Warmer than average winter temperatures are resulting in various caterpillars feeding on a range of crops, particularly in the northern grainbelt. Growers are reminded to regularly check their crops for insects and to correctly identify caterpillars before deciding how to manage them.

Caterpillar reports

- Yuna
- Balla
- Ogilvie
- Binnu
- Eradu

A weed web moth caterpillar and visible feeding damage on wild radish. Photo courtesy of DPIRD.

Belinda Eastough (Elders) has found weed web moth caterpillars feeding on lupins and canola near Ogilvie, Balla, and Binnu, northeast of Geraldton. While the current damage levels are low, the caterpillars have been observed feeding on the growing points of lupins, which is a concern.

Cabbage centre grub (left) and brown pasture looper (right). Photos courtesy of DPIRD.

An Agworld app user has reported cabbage centre grubs and loopers (presumably brown pasture loopers) causing minor feeding damage to canola near Yuna.

A common armyworm caterpillar. Photo courtesy of DPIRD.

Caterpillars (suspected to be armyworm) are feeding on tillering wheat (variety Rockstar) near Eradu.

Biology and feeding characteristics

The weed web moth is a native species and as its name suggests, the larvae often spin webs on leaves binding them together. They are foliage feeders and can skeletonise leaves of a wide range of broad leaf hosts, including canola, lupins and lucerne.

Weed web moth larvae are slender, slightly hairy and vary in colour from grey-green and dark green to pale brown. They have black heads, and older larvae have a dark stripe along the middle of their backs, with three rows of small dark spots on each side. They can grow up to 15 to 20 mm in length.

Weed web moth larvae can be mistaken for cabbage centre grubs as they look very similar in appearance, and both have brown banding along the body. However, they can be differentiated by the type of feeding damage they cause. Cabbage centre grubs tunnel into growing points of canola plants and other brassica plants and tunnel between leaf surfaces, resulting in white blisters.

Brown pasture looper caterpillars are slender grey or brown with distinctive cream or yellow stripes that appear after they reach 10 mm in length. Young caterpillars can be seen on plant leaves during the day and move with a characteristic looping motion. When the caterpillars reach full size at 30 mm long, they cease the looping motion.

Armyworm caterpillars have smooth bodies and may be distinguished by the three parallel white stripes on the collar just behind the head. The first visible sign of armyworm caterpillars is often their green to straw-coloured droppings, about the size of a match head, found on the ground between the cereal rows. Armyworm caterpillars are most damaging in barley crops close to harvest. When barley crops are maturing in spring, large armyworm caterpillars climb plants and can chew through the stems, causing the heads to fall to the ground. Damage to wheat and oat crops occurs less frequently and is usually minor compared to damage in barley because the stems are thicker and leaf defoliation does not usually result in yield loss. Assessing the number of armyworms 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, whilst on other days they will be high up on the plants or on the heads, and easily picked up using sweep nets. Larger caterpillars often prefer to hide during the day and feed at night.

If you are unsure of what of caterpillar you are finding in your crops and pastures, use the PestFacts WA Reporter app to request a diagnosis.

Managing caterpillars and considering beneficials

Growers are encouraged to monitor their paddocks for caterpillar activity and only apply insecticides if caterpillars are present, actively feeding on the crop, and the crop is unable to outgrow the feeding damage. Under favourable growing conditions, crops can outgrow minor damage.

There are registered insecticides suitable for most caterpillar pests. For insecticide information growers and consultants can refer to DPIRD's 2025 Autumn Winter Insecticide Guide.

Weed web moth and cabbage centre grubs can be difficult to control using contact insecticides as they produce webbing between leaves that creates a protective layer and reduces exposure.

The effectiveness of insecticides controlling armyworm caterpillars is dependent on good insecticide 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 and more active at this time.

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.

Further information

To read about earlier weed web moth and cabbage centre grub activity this season, refer to the 2025 PestFacts WA Issue 3 article Warm weather is favouring caterpillars.

For more information 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 Bec Severtson (DPIRD Northam).

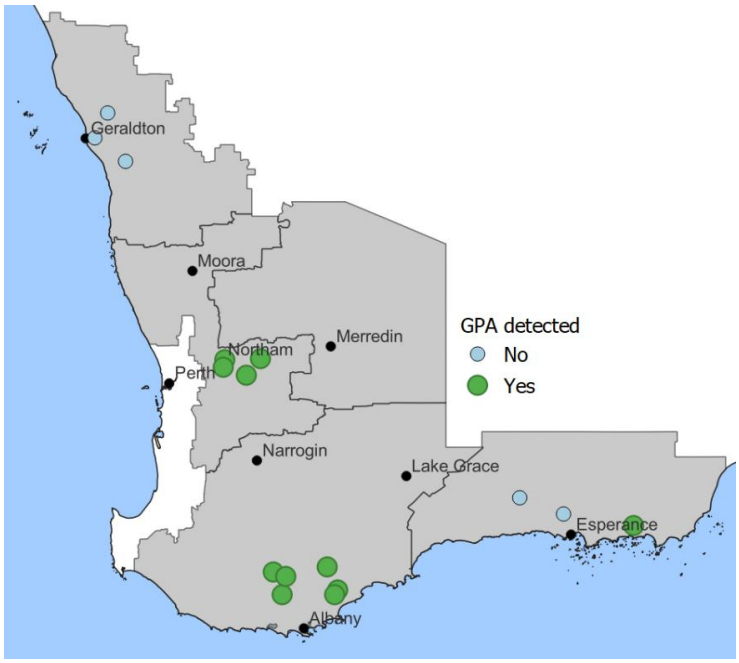
Article input: Andrew Phillips (DPIRD Geraldton) and Svetlana Micic (DPIRD Albany).

Green peach aphids widespread, but turnip yellows virus detection remains low

- Geraldton port zone
- Kwinana West port zone
- Albany port zone
- Esperance port zone

Winged and non-winged green peach aphids. Photo courtesy of DPIRD.

The department's grains virology team reports that green peach aphid (GPA) infestations in canola are now common in the Albany and Kwinana West port zones, with crop monitoring showing crop infestation rates of up to 30%. This coincides with winged GPA consistently being caught on traps since early June in both port zones. See map below.



Green peach aphid (GPA) detection on yellow sticky traps and canola crops across WA, as of 13 July 2025. Map courtesy of DPIRD.

GPA has also recently been detected on traps for the first time at Howick in the Esperance port zone.

Very little aphid activity has been detected in the Geraldton port zone at DPIRD monitoring sites.

Fortunately, turnip yellows virus (TuYV) has not been consistently detected in aphids caught on traps. Moreover, TuYV has not yet been detected in GPA infesting canola or in the canola crops themselves. However, testing continues as samples continue to be collected by the virology team.

Many canola crops have reached the flowering stage and are no longer at disease risk of TuYV infection. However, later emerging crops that are still in the vegetative stage are still at potential risk if substantial GPA transmission of TuYV occurs over the coming weeks.

DPIRD staff will continue monitoring for aphid activity and TuYV using yellow sticky traps and routine inspections of canola paddocks in the Geraldton, Kwinana West, Albany and Esperance regions until August 2025. This surveillance is co-funded by the Grains Research and Development Corporation (GRDC) project DAW2305-003RTX, “Effective virus management in grains crops”.

Management

The only management strategy available after sowing for TuYV is to use foliar insecticides, which must be applied in the early stages of GPA infestation to be most effective. Routine monitoring from emergence to the 7-leaf stage, involving whole plant visual inspection, must be carried out to ensure a well-timed spray.

To do this, at least 10 plants from the crop must pulled out and closely inspected for GPA, as TuYV can be transmitted by just one or two aphids. GPA are likely to be found near paddock boundaries. If GPA are found, growers are encouraged to contact Research Scientist Benjamin Congdon by emailing Benjamin.Congdon@dpird.wa.gov.au to organise free TuYV testing to assist management decisions.

If infective GPA are found, and infestation rate is still relatively low (e.g. less than 30% of plants infested with infective aphids), a foliar spray may be effective in preventing high levels of spread. Once widespread infestation of infective GPA and subsequent TuYV infection occurs, foliar insecticides will not provide any economic benefit in terms of reducing TuYV inflicted yield losses.

It is important to note that monitoring should occur regardless of whether insecticide seed treatments were applied, as these alone are unlikely to prevent TuYV spread.

For more TuYV management information refer to DPIRD’s Turnip yellows virus and its management in canola factsheet.

Effective chemicals currently available in Australia for control of GPA are limited as GPA has evolved resistance to many insecticides. For more information see GRDC’s Green peach aphid – best practice management guide and Aphid and insecticide resistance management in grain crops.

For registered insecticide recommendations, refer to DPIRD’s 2025 Winter Spring Insecticide Guide.

Further information

For more information about GPA, and earlier seasonal activity, refer to the 2025 PestFacts WA articles in:

- Issue 8 Green peach aphid beginning to infest canola crops in Albany and Kwinana West port zones
- Issue 6 Green peach aphid and turnip yellows virus detected
- Issue 5 No green peach aphid detected yet in DPIRD monitoring
- Issue 1 Enhancing aphid and virus control in canola: beyond seed treatments.

For further information contact Senior Research Scientist Benjamin Congdon in Perth by emailing Benjamin.Congdon@dpird.wa.gov.au.

Article author: Benjamin Congdon (DPIRD Perth).

Native budworm moth update

Native budworm moths

Native budworm moths captured in a pheromone bucket trap at Ogilvie. Photo courtesy of DPIRD.

Following the native budworm moth migration into the northern and northeastern grainbelt areas in June, high numbers of moths have also been trapped in the Geraldton port zone during early July. Smaller numbers of native budworm moths have been trapped in the Kwinana East and Kwinana West port zones, and very low numbers in the Esperance port zone.

Over a two-week period in early July, volunteer trappers and DPIRD staff recorded the following native budworm moth counts: Nabawa (608 moths), Ogilvie (588), Durawah (486), Maya (432), Allanooka (217), Wongan Hills (40), Bolgart (24), York (22) and Katanning (0).

Over a one-week period, until mid-July, volunteer trappers have reported the following native budworm moth counts: Goomalling (52 moths), Walebing (13), Dalwallinu (5), Salmon Gums (4) and Narrogin (0).

The high numbers of moth captures are concerning and indicate that native budworm moths are likely to have already started laying eggs onto crops. Pulse and canola growers in these areas are encouraged to check their crops in the coming weeks, as caterpillar offspring from these flights may be present.

Native budworm moths migrate long distances annually from the north and eastern pastoral areas, moving south and west into the grainbelt.

Native budworm moth counts can be viewed at Cesar Australia's MothTrapVisWA page, which is regularly updated with the latest trap counts.

Native budworm caterpillars

- Binnu
- Nabawa
- Geraldton

Consultants have reported low numbers of small native budworm caterpillars in lupins northeast of Binnu and in canola near Nabawa. A Back Paddock user has also found native budworm caterpillars on lupins near Geraldton.

To read about earlier native budworm activity this season, and how to manage this pest, refer to the 2025 PestFacts WA Issue 8 article Native budworm moth flights have started and Issue 7 article Native budworm moth trapping program will begin in July. Would you like to host a trap?

More information

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 Scientists Bec Severtson in Northam or Andrew Phillips in Geraldton.

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.

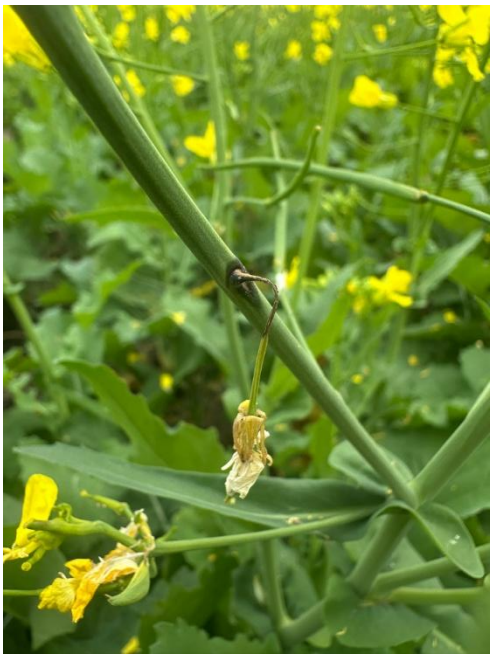
Article author: Bec Severtson (DPIRD Northam).

Blackleg – upper canopy infection

- Cascade
- Scaddan
- Wittenoom Hills
- Dalyup

Blackleg upper canopy infection on a flowering canola head. Photo courtesy of Quenten Knight (Agronomy Focus).

Quenten Knight (Agronomy Focus) has found some upper canopy blackleg infection (UCI) on HyTTec Trophy canola near Scaddan and Hyola Blazer TT canola near Wittenoom Hills. At Scaddan it was low levels of blackleg UCI on early canola flowers and the crop was going to be sprayed at 30% bloom.



Blackleg infection on canola stem and flower. Photo courtesy of DPIRD.

Senior Research Scientist Andrea Hills (DPIRD) also found blackleg infection on the stem and flowers of canola near Cascade and Dalyup.

Blackleg UCI is usually worse in very early sown crops and can infect all parts of the canola plant including flowers, heads (causing head abortion), stems, branches and pods. Most grain yield damage results from early stem and branch infections that limit pod filling.

It is important to note that another disease, alternaria, can also occur on canola pods and is easily confused with blackleg. However, blackleg is distinguished by the presence of black pepper spots within a white lesion.

Excluding leaves, upper canopy blackleg infections (UCI) will occur on varieties that are not rated as moderately resistant to resistant (MR-R) when sown as bare seed. Variety resistance ratings for UCI blackleg, along with regional gene effectiveness, are now available in GRDC's Blackleg Management Guide 2025 Autumn Fact Sheet.

Management

A decision support tool is available for canola growers to use during flowering to help with management decisions for blackleg UCI. The tool is available for use on phones and tablets and can help determine the likely economic returns from applying fungicide during early to mid-flowering. For more information, refer to DPIRD's UCI BlacklegCM decision support tool page.

Several fungicide products are registered for the control of blackleg UCI in canola. As canola crops flower across the grainbelt, growers are urged to consider appropriate management of blackleg UCI. Fungicides applied during the early bloom stages will reduce the major UCI infections that cause the most yield penalties. For more information on registered fungicides refer to DPIRD's Fungicides page.

Growers and consultants are encouraged to use the PestFacts WA Reporter app to report any disease observations as the season progresses.

Further information

To read about earlier blackleg infections reported this season, refer to the 2025 PestFacts WA Issue 6 article Blackleg in canola.

More information on blackleg is available at DPIRD's Blackleg and its management in canola factsheet.

For more information on blackleg in canola contact Senior Research Scientist Andrea Hills, Esperance on +61 (0)8 9083 1144.

Article authors: Andrea Hills (DPIRD Esperance) and Cindy Webster (DPIRD Narrogin).

Article input: Jean Galloway (DPIRD Northam).

Net blotches (Spot form and net form) in barley and webinar recording

- Alma
- Northampton
- Tenterden
- Cascade

Spot form net blotch lesions on barley plants. Photo courtesy of DPIRD.

Spot-form net blotch (SFNB) has been reported in barley near Alma, Northampton and Cascade recently.

Net form net blotch lesions. Photo courtesy of DPIRD.

Senior Research Scientist Kithsiri Jayasena (DPIRD) found net-form net blotch (NFNB) in tillering Neo barley near Tenterden in late May.

Symptoms

SFNB and NFNB can be quite variable in appearance depending on the form of the pathogen, the variety of barley and the stage of infection. Initially, SFNB lesions are dark brown and tend to be rounded with yellow margins. In contrast, early NFNB lesions, while

also dark brown, tend to start as very thin lines and can develop into rectangular ‘nets’ as it spreads.

Both net blotches can cause losses in both yield and grain quality. They are most damaging in crops sown to varieties that are rated very susceptible (VS) to susceptible (S) with high yield potential (>3 t/ha) in medium to high rainfall barley growing regions.

Barley varieties that are susceptible to SFNB and NFNB, have not been treated with a registered seed dressing for net blotches, and are sown into a high-risk situation (barley on barley) are particularly vulnerable.

Management

Selecting resistant varieties of crops is the simplest way to manage all diseases. Even choosing varieties with the disease ranking of Moderately Susceptible (MS) or better will noticeably reduce SFNB and NFNB levels in crops relative to a variety with a Susceptible (S) ranking. To see which barley varieties are susceptible to STNB and NTNB, refer to DPIRD’s 2025 WA Crop Sowing Guide - Barley.

Applying a foliar fungicide may be necessary in medium to high rainfall regions where disease threatens crops with high yield and quality expectations. Depending on the disease pressure and grain yield potential, fungicide management of net blotches should be targeted at protecting the upper leaves that contribute most to grain filling (in barley these are the two leaves under the flag leaf).

Application of a foliar fungicide during tillering is not recommended, as it only temporarily reduces disease levels and almost never results in a yield response. Unnecessary fungicide applications accelerate the development of fungicide resistance, particularly if a single active is applied.

To read about research on SFNB in the low rainfall regions, refer to the 2025 Protecting WA Crops Issue 48 article Outcomes from 5 years researching spot form net blotch management in low rainfall areas.

Research at the Centre for Crop and Disease Management (CCDM) at Curtin University has identified NFNB pathogen populations in WA showing levels of resistance or reduced sensitivity to DMI (Group 3) and SDHI (Group 7) fungicides. To prevent further development of fungicide resistance, rotate fungicides with different modes of action, avoid using the same mode of action more than twice per season, use fungicide mixtures with different modes of action, and stick to the label rates. If fungicide resistance is suspected, leaves can be submitted to CCDM via frg@curtin.edu.au.

For more information on fungicide resistance refer to the Grains Research and Development Corporation’s (GRDC) Ground Cover article Net form net blotch triple fungicide resistance detected in WA.

For a list of registered fungicides to use as foliar sprays for managing SFNB and NFNB in barley, visit DPIRD’s Fungicides page.

Managing net blotch disease and NetBlotchBM tool webinar recording

On Monday 30 June, DPIRD Research Scientists Jason Bradley, Harry Eslick and Jean Galloway presented a webinar on managing net blotches in barley and how to use the new

NetBlotchBM decision support tool, which can be downloaded from the Apple app store or Google play store onto phones and tablets.

The webinar recording can be viewed on the DPIRD YouTube channel.

Further information

For further information on symptoms and management of blotches see DPIRD's Net form net blotch and its management in barley and Spot form net blotch and its management in barley factsheets.

For more information on blotches contact Senior Research Scientists Andrea Hills in Esperance on +61 (0)8 9083 1144, Kithsiri Jayasena in Albany on +61 (0)8 9892 8477, Research Scientists Kylie Chambers in Northam on +61 (0)8 9690 2151 or Jason Bradley in Perth on +61 (8) 9368 3982.

Article authors: Andrea Hills (DPIRD Esperance), Jason Bradley (DPIRD Perth), Kithsiri Jayasena (DPIRD Albany) and Kylie Chambers (DPIRD Northam).

Powdery mildew in wheat

- Bodallin
- Dalyup
- Condingup

Powdery mildew on wheat. Photo courtesy of DPIRD.

Dan Taylor (DKT Rural Agencies) has found powdery mildew in wheat (variety Vixen) north of Bodallin. The plants were at stem elongation.

Technical Officer Joel Kidd and Senior Research Scientist Andrea Hills have recently found powdery mildew in two wheat crops near Dalyup, 1 crop was the variety Scepter. The plants were at stem elongation growth stage.

Quenten Knight (Agronomy Focus) has also found isolated areas of powdery mildew on wheat (var. Scepter) near Condingup. He commented that it is mainly occurring on sandy soils with low potassium fertility at this stage. The affected plants were at stem elongation.

Powdery mildew on a wheat leaf, visible as fluffy, white powdery growths. Photo courtesy of DPIRD.

Barley and wheat powdery mildew are host specific and do not cross infect. However, these reports indicate that seasonal conditions are conducive for disease development of both mildews and so monitoring of wheat and barley crops for this and other diseases should be ongoing, particularly in areas where a pre-season green bridge was apparent or susceptible varieties have been sown.

Symptoms

When diagnosing powdery mildew look for fluffy, white powdery growths of fungal spores on the surface of leaves and leaf sheaths. Infection usually starts low in the canopy and under severe disease pressure can appear on stems and heads. As the infection ages there is a yellowing of the infected tissue, and the infected area turns a dull grey colour with small black specks present. Severe powdery mildew infections can cause yellowing patches in a crop that may be mistaken for waterlogging from a distance. To avoid misdiagnosis, it's important to walk into the crop and check for powdery mildew symptoms.

Temperatures of 15-22°C favour the disease in conjunction with high humidity. Rain does not spread the disease but can create extended periods of canopy humidity which favour disease development. Under favourable conditions, the infection cycle can take as little as seven days causing rapid build-up in crops. Mildew can also disappear rapidly in dry, hot weather and very heavy rain can also wash spores away.

Management

For resistance ratings of wheat varieties to powdery mildew, refer to the department's 2025 Crop Sowing Guide. Infection early in the season on susceptible – moderately susceptible varieties can significantly reduce yield (by up to 25%) while infection at later stages (after Z39) is usually less damaging.

Registered foliar fungicides can be used to control powdery mildew infection, where application early in the epidemic before significant disease development is most effective (i.e. first application around stem elongation). For more information refer to the department's Fungicides page.

Testing for powdery mildew fungicide resistance

Wheat powdery mildew is at high risk of developing fungicide resistance, so growers are encouraged to use fungicides wisely. As good practice, all fungicide actives should be rotated within and across seasons.

Growers and consultants that suspect fungicide resistance in powdery mildew is occurring in a crop can contact the Centre for Crop and Disease Management's (CCDM) fungicide resistance team by emailing frg@curtin.edu.au for further information.

Further information

For more information on powdery mildew visit DPIRD's Powdery mildew and its management in wheat factsheet.

For more information on wheat diseases contact Principal Research Scientist Geoff Thomas in Perth on +61 8 9368 3262, Senior Research Scientists Kithsiri Jayasena in Albany on +61 8 9892 8477, or Andrea Hills in Esperance on +61 8 9083 1144.

Article author: Ciara Beard (DPIRD Geraldton).

Article input: Kithsiri Jayasena (DPIRD Albany).

Yellow spot / Septoria nodorum blotch in wheat

- Geraldton
- Minnenooka
- Mingenew
- Arrino

Yellow spot/septoria nodorum blotch on wheat. Photo courtesy of DPIRD.

Senior Research Scientist Ciara Beard (DPIRD) has recently found wheat plants displaying yellow spot/ septoria nodorum blotch symptoms in a crop near Mingenew. The plants were at the tillering growth stge.

Agworld app users have also reported finding yellow spot in wheat near Arrino and Minnenooka.

A Back Paddock app user has found yellow spot in Tomahawk wheat near Geraldton.

Yellow spot is caused by the fungus *Pyrenophora tritici-repentis* and nodorum blotch is caused by *Parastagonospora nodorum*.

In WA, nodorum blotch and yellow spot often occur together as a disease complex on wheat and are difficult to visually distinguish.

These pathogens are stubble-borne and are therefore high risk in wheat-on-wheat situations. Crop infection is favoured by warm, wet weather. Nodorum blotch is promoted by heavy and frequent rain, while dew can be enough to spread yellow spot.

Symptoms

Yellow spot/nodorum blotch lesions often start as yellow-tan oval spots on leaves, which develop tan-brown centres with yellow edges as lesions grow. It is very difficult to distinguish yellow spot from nodorum blotch by visual leaf symptoms in mixed infections, even for experienced plant pathologists who rely on lab diagnostic techniques to confirm which pathogen is present. Early in the season, distinguishing them is not necessary as both can generally be treated with the same registered foliar fungicides. However, after flag leaf emergence, when symptoms are seen moving up the leaf canopy, there is a risk of head infection (glume blotch) if the pathogen is nodorum blotch. It is important to

optimise control of nodorum on leaves to reduce the risk of head infection. Also, despite being caused by the same pathogen, variety resistance to nodorum on leaves is not necessarily the same as nodorum glume blotch resistance. Ratings for both are listed in DPIRD's 2025 Crop Sowing Guide – Wheat.

Correct diagnosis can be worthwhile, particularly as symptoms may not actually be fungal. Leaf spot symptoms can sometimes be physiological, herbicide or insect damage and these do not respond to fungicide application.

Management

Wheat varieties differ in their susceptibility to nodorum blotch and yellow spot. To check the susceptibility ratings of different varieties, refer to DPIRD's 2025 Crop Sowing Guide – Wheat.

The greatest yield response to fungicide application for nodorum blotch or yellow spot in wheat canopy is achieved when applied at flag leaf emergence. However, earlier application (e.g. at first node, Z31) may be considered if a susceptible variety has been sown into wheat stubble or if disease pressure is high early in the season. A second fungicide spray may be required at or after flag leaf emergence, as fungicides will only protect the leaves present at the time of application.

Growers should prioritise disease management of wheat sown on wheat stubble, especially early sown, susceptible wheat crops, that are nitrogen deficient, as these are likely to be more vulnerable to developing disease.

YellowSpotWM is a free app available to assist with making economic fungicide spray decisions for managing yellow spot in wheat. Users can specify factors relating to paddock selection, variety, seasonal conditions, prices and management options so that the output relates to their cropping circumstance. For more information refer to DPIRD's YellowSpotWM page.

More information on registered fungicides can be found at DPIRD's Fungicides page.

Further information

Further information about this disease can be found at the department's Yellow spot and septoria nodorum blotch and their management in wheat factsheet.

For more information on wheat diseases contact Principal Research Scientist Geoff Thomas in Perth on +61 8 9368 3262, Senior Research Scientists Kithsiri Jayasena in Albany on +61 8 9892 8477, or Andrea Hills in Esperance on +61 8 9083 1144.

Article author: Ciara Beard (DPIRD Geraldton).

Article input: Kithsiri Jayasena (DPIRD Albany).