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

PestFacts WA

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Sclerotinia disease in progress in WA

- Northam
- Albany
- Munglinup

Image 1: Sclerotinia apothecia. Photo courtesy of: Jean Galloway (DPIRD).

Apothecia have been found in Department of Primary Industries and Regional Development (DPIRD) sclerotia depots at Northam and Albany recently. They have germinated from sclerotia. It is a warning that the cool moist weather in recent weeks has suited the start of the sclerotinia disease lifecycle.

Sclerotinia leaf lesions and early stem infection have been reported in canola crops at Munglinup. The crop stages affected range from cabbaging growth stage to first flowers.

Growers in areas with a history of sclerotinia are reminded to consider their sclerotinia risk when their crops are close to or at flowering. The disease needs to be managed before sclerotinia symptoms are observed.

Symptoms

Image 2: Sclerotinia infection on a canola leaf (left) and stem (right). Photos courtesy of: Ciara Beard (DPIRD).

Image 3: Sclerotinia on a lupin pod. Photo courtesy of: Ciara Beard (DPIRD).

Sclerotinia canopy infection is the most common infection pathway with aerial ascospores produced by apothecia infecting petals during crop flowering. Lesions occur in the upper half of the plant's main stem or branches and can be observed on leaves and pods.

Image 4: Basal sclerotinia stem infection displayed as fluffy white fungal growth at the base of the lupin stem. Photo courtesy of: Zia Hoque (DPIRD).

Basal sclerotinia infection follows a different pathway where sclerotia germinate from the mycelium and directly infect the stem at ground level in very wet conditions/seasons. White cottony-looking growth girdles the stem, causing the plant parts above the lesion to wilt and die.

Management

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

DPIRD research has shown that regular rainfall and high humidity (>75%) in the three 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. For canola crops, consider whether a response to upper canopy blackleg is also likely (refer to DPIRD's UCI BlacklegCM - Blackleg upper canopy infection management app).

Growers need to consider the following factors to determine their risk of sclerotinia and which paddocks to prioritise:

- rotation history of the paddock
- history of sclerotinia in the current paddock and those surrounding it
- rainfall events before and after flowering
- crop growth stage
- dense crops with early canopy cover on loamy soil types are at higher risk.

The SclerotiniaCM decision support tool is available for use by canola growers during flowering to help determine the likely economic returns from applying fungicide at a specific time during flowering 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 SclerotiniaCM 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 SclerotiniaCM decision support tool page.

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. For more information refer to DPIRD's Registered foliar fungicides for canola in WA and Registered foliar fungicides for lupin crops in WA pages.

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

- For canola:
    - Apply a single foliar application at 20% to 50% bloom, provided conditions are favourable for infection before and during flowering. See Table 1 below for recognising bloom stages in canola. Use the SclerotiniaCM tool for guidance.

  - A second fungicide application at 50% bloom is generally only beneficial in seasons with an extended wet period. Fungicides cannot be applied after 50% bloom, but some products have a longer withholding period, so you do need to check the label. Use the SclerotiniaCM tool for guidance.

- For lupin:
  - Aim to apply fungicide from full to late flowering on main spike in order to protect main stem pods and penetrate the lower canopy
  - A range of products are now registered in lupins which can reduce sclerotinia canopy infection, such as Veritas® Opti and Miravis® Star.

Table 1 Identification of bloom stages in canola (crop average).

Percent bloom	Number of flowers open on the main stem
5%	<5
10%	10
20% (petal drop commences)	11-14
30%	15-20
50% (full bloom, crop is at its brightest)	>20

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

Further information

Further information can be found at:

- DPIRD's Managing sclerotinia stem rot in canola page
- DPIRD's Managing sclerotinia in lupins page
- GRDC's Sclerotinia stem rot in canola factsheet.
- GRDC's Lupin sclerotinia disease risk assessment guide factsheet.

For more information on sclerotinia in canola contact plant pathologists Andrea Hills, Esperance on +61 (0)8 9083 1144, Ciara Beard, Geraldton on +61 (0)8 9956 8504, Kylie

Chambers, Northam on +61 (0)8 9690 2151 or Jean Galloway, Northam +61 (0)8 6690 2172.

For more information on sclerotinia in lupins contact plant pathologists Ciara Beard, Geraldton on +61 (0)8 9956 8504, Geoff Thomas, Perth on +61 (0)428 947 287.

Article authors: Ciara Beard (DPIRD Geraldton), Jean Galloway (DPIRD Northam) and Andrea Hills (DPIRD Esperance).

Article input: Zia Hoque (DPIRD Northam).

Cutworm

- Beverley
- Westdale

Image 5: Cutworm caterpillar and chewing damage to cereal seedling. Photo courtesy of: David Stead (Anasazi Agronomy).

Davd Stead (Anasazi Agronomy) has reported cutworm damaging wheat and barley crops from south Beverley to Westdale, particularly on heavy clays.

Trent Butcher (ConsultAg) has found brown pasture loopers causing severe damage to young lupins at Williams. He also reported larger caterpillars that look like turnip moth caterpillars (*Agrotis segetum*) damaging faba bean plants at Cuballing.

Cutworm caterpillars are often camouflaged with soil and trash and can be difficult to find. They can grow to 50 mm in length and appear plump, with a hairless body and dark head. There are several species of cutworm pests:

- Caterpillars with a pink tinge are *Agrotis munda*
- Dark grey caterpillars are bogong moth *Agrotis infusa*
- Patterned caterpillars are *Rictonis* spp. and *Omphaletis* spp.

Image 6: The 3 main species of cutworm caterpillars. Photo courtesy of: DPIRD.

Cutworm feed on leaves and stems at ground level, and hide in the soil during the day, often at the base of lopped plants. It is common to see patches within a crop where plants have had leaves lopped or stems cut at the base.

For more information refer to DPIRD's Diagnosing cutworm in cereals and Cutworm: pests of crops and pastures pages.

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.

Growers should consider insecticide options that are soft on predator insects if spraying. For a list of insecticides with their toxicity to beneficial insects, refer to Cesar Australia's Beneficials Chemical Toxicity Table.

For more information on beneficials refer to DPIRD's Know what beneficials look like in your crop page.

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).

Diamondback moth caterpillars are being found early

- Tenindewa.
- Carnamah
- Nangetty
- Wongan Hills
- Bolgart
- Northam
- York
- Dale
- Albany
- Bremer Bay

Image 7: Diamondback moth, native budworm and cabbage white butterfly caterpillars in sweep net sample. Photo courtesy of: Claire McIntyre (Nutrien).

Claire McIntyre (Nutrien) recently found diamondback moth (DBM), native budworm and cabbage white butterfly caterpillars while sweep netting a canola crop near Bremer Bay/Gairdner and noted that DBM larvae were below threshold levels in this crop (average <10 per 10 sweeps).

DBM larvae have also been found at Albany.

Last week, DPIRD field researchers found a range of 12 to 32 caterpillars per 10 sweeps (average 22 per 10 sweeps) on early stem elongation canola at Carnamah. Low numbers of DBM pupae were found on early flowering canola at Tenindewa.

DPIRD staff have also reported low numbers of DBM caterpillars on plants on 3-9 leaf canola at Nangetty, Wongan Hills, Bolgart, Northam, York and Dale.

David Stead (Anasazi Agronomy) reports that DBM caterpillars are being found in budding canola crops in the Beverley and West Dale regions. This season, David has found DBM larvae at unprecedented levels in early seeded canola crops and suggests that volunteer canola has harboured caterpillars from vegetation come about by pre-season rainfall.

Growers and consultants are seeking advice on how to manage DBM caterpillars now, given the recent above-average winter temperatures leading up to spring. In 2022, the eastern grainbelt region experienced early outbreaks of DBM larvae during early to mid August, resulting in canola crops requiring often multiple sprays to keep numbers down.

Spring is when most DBM damage typically occurs in canola crops. For more climate information, refer to DPIRD's latest Seasonal Climate Outlook.

Recent rainfall in some areas is not expected to have reduced DBM caterpillar numbers, but it may have slowed their lifecycle. Recent GRDC-funded research, conducted by DPIRD, found that DBM moths can colonise canola crops very early, with increase of caterpillars often not seen until temperatures increase at the tail end of winter (e.g. August). However, above average daytime temperatures for the WA grainbelt this winter, has increased DBM populations in crops.

Research has also found that regular monitoring and recording of DBM numbers and changes in the larval growth stages (i.e. the percentage of various sized caterpillars) over time is the best way to anticipate any potential rapid buildup. Knowing changes in DBM larvae numbers also provides an opportunity to commence spray operations (if required) at a time when they are most likely to be effective.

To read about earlier DBM activity this season, refer to the 2024 PestFacts WA Issue 4 article Diamondback moths in moisture stressed crops.

Biology

DBM caterpillars are pale green, cigar-shaped and up to 12 mm in length. They wriggle violently when disturbed and can drop down on a fine thread.

Damage from these caterpillars appears as chewed leaves, buds and flowers with the leaf chewing ranging from irregular holes in leaves to extensive leaf damage.

DBM caterpillar activity typically slows down in cold, wet weather conditions and then ramps up in spring.

Managing DBM and considering beneficials

Growers are urged to monitor their crops, correctly identify caterpillar species and if crops aren’t bouncing back from feeding damage to consider applying an insecticide. Growers are reminded that insecticides that are effective on DBM can only be applied twice in a season.

Growers and consultants are also advised to monitor for DBM larvae, especially from August onwards, by doing at least four lots of ten sweeps with an insect net at various locations in each crop.

DBM caterpillars drop from plants when disturbed. Bbashing some plants, especially those with holes in leaves, over an ice cream container is a good initial indication of their presence if you don’t have a sweep net handy.

DBM are difficult to control because they breed prolifically, are resistant to many insecticides including synthetic pyrethroids and organophosphates, and in advanced canola canopies insecticide sprays have limited coverage.

Thresholds for control are:

- pre-flowering (stressed crop): 30 or more grubs per 10 sweeps
- pre-flowering (no stress): 50 per 10 sweeps.
- early-mid flowering: 50 or more grubs per 10 sweeps
- mid-late flowering: 100 or more grubs per 10 sweeps.

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

For more information on beneficials refer to DPIRD's Know what beneficials look like in your crop page.

Further information

For more DBM information refer to:

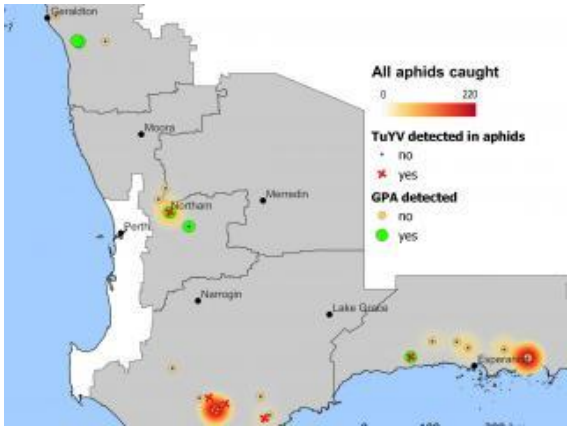
- DPIRD's Diagnosing diamondback moth page
- GRDC's Diamondback moth factsheet
- GRDC's Managing diamondback moth video.

For more information contact Research Scientist Svetlana Micic in Albany on +61 (0)8 9892 8591 or Technical Officer Alan Lord in Perth on +61 (0)409 689 468.

Article author: Bec Severtson (DPIRD Northam).

Turnip yellows virus and green peach aphid detected in yellow sticky traps and canola crops

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



Findings from green peach aphid and turnip yellows virus monitoring sites, current to 10 July 2024. Map courtesy of: DPIRD.

DPIRD's aphid trapping program and reports from regional consultants are finding that green peach aphids (GPA) are becoming increasingly active across the grainbelt, increasing the risk of turnip yellows virus (TuYV) infection in canola. This is shown in the map above.

The risk of yield losses from TuYV is highest when both GPA and TuYV are present and spreading through the crop prior to flowering. Any virus transmission that occurs after flowering has begun is unlikely to cause yield loss.

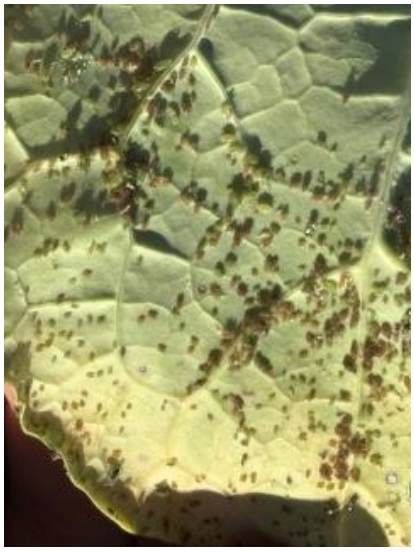


Image 8: Green peach aphids. Photo courtesy of: Geoff Fosbery (ConsultAg).

Image 9: Canola plants with suspected Turnip yellows virus infection. Photo courtesy of: Geoff Fosbery (ConsultAg).

In the Geraldton region, Geoff Fosbery (ConsultAg) has reported finding GPA in 6 – 7 leaf canola plants near Geraldton. Some canola plants are also displaying potential TuYV infection but have yet to be tested. There have also been reports of GPA and canola with visible feeding damage at Yardarino. The crop has a mix of growth stages. There have been reports of GPA causing significant feeding damage to canola near Dongara. This activity is noticeable on both light and clay soils. In one case aphid numbers and the feeding damage were significant enough to warrant spraying with MainMan insecticide. In another case the GPA were damaging canola that had been previously fed on by lucerne flea. These crops have also not been tested for virus. Aphid activity has been minimal at trapping sites located at 4-5 leaf canola crops growing at Nangetty, Moonyoonooka and East Nabawa.

Image 10: Winged green peach aphids on canola. Photo courtesy of: Christiaan Valentine (DPIRD).

In the Northam region, GPA was found in canola crops at trapping sites at Northam and Narraloggan in early June. TuYV has been repeatedly detected in aphids caught at the Northam site from early June. Although it has yet to be detected in the canola crop, TuYV risk is elevated due to the presence of both the virus and the vector, especially in pre-flowering canola crops. GPA has yet to be found at trapping sites located at Nunile and Bolgart.

In the Albany region, cabbage and turnip aphids carrying TuYV were detected from 14 May to the present at trapping sites located at Kendenup, Tenterden, South Stirlings and Cranbrook. At Kendenup, large numbers of aphids were caught migrating out of a dual-purpose canola crop which likely had high levels of TuYV infection. However, GPA has not been found in traps or in the crops at these sites, nor at Frankland, Amelup, Scotts Brook or Kojaneerup. This indicates that the TuYV risk is low in Albany port zone, especially since many of these crops are close to stem elongation.

In the Esperance region, GPA and TuYV have been detected on traps among a small number of aphids caught at Munglinup. Furthermore, TuYV was detected in the crop at low levels (estimated 2% of plants). Aphids of various species have been caught at Cascade, Speddingup, Gibson, Coolinup and Howick, but GPA or TuYV have not been detected among them. Crops at these sites range from the 2 leaf stage to early flowering.

Management

Risk of yield-limiting disease from TuYV infection is elevated in pre-flowering canola crops in which both TuYV and GPA are present in combination. As day length and daytime temperatures increase over the coming months, GPA will continue to build up in canola crops across the WA grainbelt. In regions where TuYV and GPA are present, crops still in the early vegetative growth stages may still be at risk if they are still in the pre-flowering growth stages over the next 4 to 6 weeks.

Depending on the progress of virus infection, a single application of insecticide while the crop is still in early growth stages may be beneficial in suppressing GPA populations in the crop and subsequent TuYV spread. Prevention is crucial to virus management as viruses cannot be sprayed out. So once infection reaches high levels, a spray application will not have any impact.

Crops that have begun stem elongation and have not had significant TuYV infection are now considered in the safe zone. This means that the use of insecticides to control GPA/TuYV in these more mature crops is unlikely to provide any economic benefits.

If growers or agronomists operating in these regions observe aphid infestation or virus-like symptoms in crops, please contact DPIRD Research Scientist Benjamin Congdon via email at Benjamin.Congdon@dpird.wa.gov.au.

Effective chemicals currently available in Australia for control of GPA are alarmingly limited as GPA has evolved resistance to many insecticide chemicals. For more information see GRDC's Aphid and insecticide resistance management in grain crops.

For registered insecticide recommendations, refer to DPIRD's 2024 autumn winter insecticide guide.

Further information

This trapping surveillance is funded by the GRDC project DAW2305-003RTX “Effective virus management in grains crops”.

To read about earlier aphid surveillance findings this season and management advice refer to the 2024 PestFacts WA Issue 6 article Canola aphid and virus update and Issue 4 article Turnip yellows virus detected in migrating cabbage aphids.

For more virus management information refer to DPIRD’s Managing barley yellow dwarf virus and cereal yellow dwarf virus in cereals and Turnip yellows virus in canola: diagnosis and management pages.

For further information contact Research Scientist Benjamin Congdon, Perth via email at Benjamin.Congdon@dpird.wa.gov.au .

Article authors: Benjamin Congdon (DPIRD Perth) and Cindy Webster (DPIRD Narrogin).

Redlegged earth mite update

- Northam
- Spencers Brook
- Beverley
- South Yilgarn
- Marradong
- Darkan
- Nyabing
- Tenterden
- Albany

Image 11: Redlegged earth mites on canola. Photo courtesy of: Jess Sangston (DPIRD).

There have been numerous reports recently of redlegged earth mites (RLEM) causing extensive damage to crops and pastures across the central and southern grain regions. Some agronomists and growers have described it as some of the worst RLEM damage they have seen.

This week David Stead (Anasazi Agronomy) reported that RLEM populations are widespread in many locations and are appearing to not be controlled with insecticide sprays, despite no recorded incidences of insecticide resistance.

Nathan Moyes (Imtrade) reported widespread damage to canola crops at Marradong, Nyabing and Darkan, particularly in paddocks previously under cereal or pasture. Nathan noted a canola crop, previously cereal, was sprayed with bifenthrin and chlorpyrifos, and a second hatching was observed which resulted in retarded crop growth from feeding damage. He suggested spraying with diafenthiuron if further control was needed.

Nathan also reports barley and wheat crops in Darkan, with early widespread damage by RLEM that appeared as white tipping, had outgrown mite damage and chemical sprays were not applied.

Clancy Thompson (Nutrien) reported that RLEM populations are high in the Northam area, while lucerne flea not noticeable.

Gary Kenward (Yilgarn Agencies) reported a wheat crop at South Yilgarn that was severely damaged by RLEM, and the farmer was going to spray with omethoate to save the crop.

A grower at Tenterden has reported extensive RLEM damage of recently germinated seedlings in all year-round clover pasture. The clover had died off during the dry summer and after a late rainfall break, RLEM attacked the smaller second germination. The grower will apply insecticide sprays to try and save the pasture.

Growers are urged to monitor for RLEM activity in their paddocks and be wary of insecticide resistant populations and potential later egg hatchings after insecticides have been applied.

RLEM insecticide resistance

Resistant RLEM populations are likely to be present in paddocks that have a history of repeated insecticide applications.

Growers and consultants are urged to apply integrated pest management (IPM) strategies when managing RLEM. These strategies include; identifying mites, rotating different chemical groups and reserving co-formulations or chemical mixtures only for situations where damaging levels of RLEM and other insect pests are present.

Consider applying insecticides that are pest specific when spraying for pests other than RLEM.

For more IPM information see DPIRD's Prevent redlegged earth mite resistance page and GRDC's Resistance management strategy for the redlegged earth mite in Australian grains and pastures fact sheet.

You can also listen to the DPIRD Grains Convo podcast Why aren't your insecticides working on redlegged earth mite?

RLEM resistance testing in 2024

DPIRD, with co-investment from GRDC, will be undertaking RLEM resistance testing this year.

If you notice RLEM surviving applications of insecticides, please contact DPIRD Research Scientist Svetlana Micic to discuss and arrange for paddocks to be tested.

Correct pest identification is important

Correct identification of mites is critical for effective control, as different species can vary in their susceptibility to certain insecticide groups, either naturally or through insecticide resistance.

RLEM adults are 1 mm long with a black body and eight red-orange legs. Immature nymphs are often a more reddish colour. For more information see DPIRD's Diagnosing redlegged earth mite page.

Management of mites

Before spraying mites, consider if the crop is out-growing 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.

For more information refer to DPIRD's Earth mites - economic considerations for management page.

For registered insecticide recommendations for mites refer to DPIRD's 2024 autumn winter insecticide guide.

Further information

For more RLEM information from earlier this season see DPIRD's 2024 PestFacts WA Issue 1 article Redlegged earth mites are hatching and Issue 3 article Mite and lucerne flea update.

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

Article author: Bec Severtson (DPIRD Northam).