

PestFacts WA

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Diamondback moth activity is increasing in some crops

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Image 1: Diamondback moth larvae captured by sweep netting canola. Photo courtesy of: Amber Balfour-Cunningham (DPIRD).

Growers are encouraged to sweep their canola crops to check for diamondback moth (DBM) caterpillars after high numbers were reported from some crops this week at north-west Cascade, Grass Patch and Merredin.

Lucy Burrows (Clarke and Stokes) found 130 DBM caterpillars per 10 sweeps in moisture-stressed late flowering canola at north-west Cascade. Lucy noted that all DBM growth stages were present in the crop. Lucy also reported sweep netting 6 DBM caterpillars per 10 sweeps in a late flowering crop at Grass Patch. In addition, at Grass Patch, Sam Stubna (South East Rural Traders) has found 60 DBM caterpillars per 10 sweeps in early flowering canola.

In addition, Joshua Cope (Nutrien) found more than 100 DBM caterpillars per 10 sweeps in early flowering canola at Merredin.

Generally, low levels of DBM activity have been reported recently by growers and consultants and Department of Primary Industries and Regional Development (DPIRD) staff monitoring canola focus crops. These include crops from Northampton, Moonyoonooka, Nabawa, Alma, Nangetty, Carnamah, Tenindewa, Bolgart, Wongan Hills, Northam, North Cunderdin, Kellerberrin, York, Merredin, South Stirlings, Gnowellen, Cascades and Grass Patch.

The canola crops that germinated earliest and/or are under stress seem to be experiencing the highest DBM pressure at the moment.

For information on DBM biology and earlier DBM activity this season, refer to the 2024 PestFacts WA Issue 4 article [Diamondback moths in moisture stressed crops](#) and Issue 9 article [Diamondback moth caterpillars are being found early](#).

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

Management

Previous DPIRD research found that early monitoring is essential in deciding whether chemical control is required. At least four estimates of larval density over 12 days will determine whether the number of caterpillars is increasing or decreasing. On each occasion, five 10-sweep samples should be taken throughout the crop. Sweep netting provides the most precise estimate of caterpillar densities in the shortest time compared to plant sampling or area counts.

If DBM numbers are found to be increasing over the 12-day monitoring period, then insecticide application may be beneficial. However, more than one spray may be required. DPIRD's research revealed that a single spray in mid-August had little impact on the damage caused by DBM. In contrast, an early program of 2 spray applications, 3 days apart, resulted in significantly better control of caterpillars and reduced yield loss. This two-spray strategy ensures that DBM eggs that survive and hatch after the first application are also controlled. Net sampling of the crop about 3 days after the first spray should be conducted to assess the effectiveness of the spray and determine the number of surviving caterpillars before the second spray is applied.

Infestations of DBM in canola crops can be sporadic and unpredictable, and pre-emptive spraying for this pest is neither effective nor cost-effective.

While DBM activity is expected to ramp up as spring approaches, DBM caterpillars do not always build up to threshold levels in every region and in every year. Sometimes DBM populations crash naturally as a result of fungal infection (especially with a moist canopy) or from other natural enemies such as parasitoid wasps.

Thresholds for control are:

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

DBM are difficult to control because they are resistant to many insecticides, including synthetic pyrethroids and organophosphates. If spraying is required, keep in mind that insecticide sprays have limited coverage in dense canola canopies, and any insecticides that are effective on DBM can only be applied twice per season.

If numbers warrant spraying then growers and consultants can refer to DPIRD's [2024 winter spring insecticide guide](#).

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.

For a list of insecticides with their toxicity to beneficial insects, refer to Cesar Australia's [Beneficials Chemical Toxicity Table](#).

Further information

For more DBM information, refer to:

- DPIRD's Diagnosing Diamondback moth page
- Grains Research and Development (GRDC) Factsheet Diamondback moth is a sporadic but serious canola challenge
- GRDC's [Managing diamondback moth](#) video
- DPIRD's Protecting WA Crops newsletter March 2024 article Lessons learned from 5 years of monitoring diamondback moths and larvae across the five port zones of WA.

If you are sweep netting canola crops for DBM caterpillars, please use the PestFacts WA Reporter app to report and share your findings.

For more climate information, refer to DPIRD's latest Seasonal Climate Outlook.

For more DBM information contact Research Scientist [Dustin Severtson](#), Northam on +61 (0)8 9690 2160, Technical Officer [Alan Lord](#), South Perth on +61 (0)8 9368 3758 or Research Scientist [Svetlana Micic](#), Albany on +61 (0)8 9892 8591.

Article authors: Bec Severtson (DPIRD Northam)

Article input: Dusty Severtson (DPIRD Northam) and Svetlana Micic (DPIRD Albany).

Spring control of redlegged earth mites



Image 2: Redlegged earth mites on capeweed. Photo courtesy of: DPIRD.

Spring is fast approaching. Growers and consultants are reminded to monitor for redlegged earth mites (RLEM) in pastures and to find out their specific Timerite® spring spray date, if spraying is necessary.

The timing of the sprays is based on a short window of the season when RLEM have stopped laying winter eggs (eggs that must hatch this season) and before female RLEM start producing diapause eggs (over-summering eggs able to survive until next autumn).

Controlling mites at this time means that the whole population can be reduced, leaving few mites to carry-over to the following autumn.

Growers can obtain the spray date specific to their locality free of charge from the Australian Wool Innovation (AWI) Limited website. Growers can type the latitude and longitude of their property into the AWI [Timerite®](#) page to obtain their spray date and other useful information. Alternatively, contact the AWI Helpline on 1800 070 099.

Please note that the Timerite® date does not work against blue oat mite nor lucerne flea.

Studies by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) have shown that spraying up to 2 weeks earlier or on the optimum spray date provides effective control of RLEM, however if spraying is delayed by 2 weeks after the optimum date, the carry-over RLEM population into next autumn is much higher.

Farmers intending to spray paddocks should make the most of suitable weather conditions to spray early or on time, rather than later than the predicted Timerite® date.

Growers are advised to spray only if they need to, and to rotate chemical groups to stop resistance developing in RLEM. Repeated use of synthetic pyrethroid insecticides or organophosphate insecticides (such as omethoate and chlorpyrifos) provides strong selection pressure for RLEM to develop resistance.

For more information on applying integrated pest management strategies to manage RLEM, refer to the Grains Research and Development Corporation (GRDC) [resistance management strategy for the redlegged earth mite in Australian grains and pastures](#) factsheet. You can also listen to the DPIRD Grains Convo podcast [Why aren't your insecticides working on redlegged earth mite?](#)

If RLEM are found surviving after registered rates of insecticide treatments have been applied, please arrange for resistance testing to be conducted. Contact DPIRD entomologist [Svetlana Micic](#) in Albany on +61 (0)8 9892 8591 or 0427 772 051.

Grazing reduces mite carryover in pastures

The level of grazing and quantity of pasture feed on offer (FOO) is directly related to the numbers of RLEM. DPIRD grazing trials have shown intensive grazing in spring will suppress RLEM for the following season. However, it should only be used when the population of mites is above 5,000 per square metre and FOO is more than 3 t dry matter per hectare (DM/ha). To reduce RLEM, the pasture needs to be grazed to a FOO of 2 t DM/ha or less for four weeks around the TIMERITE® period to achieve a significant reduction in mites the following season. For more information, refer to DPIRD's controlling redlegged earth mites using intensive spring grazing.

Insecticide management

Spraying of pastures in spring will have little or no benefit where pasture FOO levels are kept low (that is, less than 2 t DM/ha) by grazing. Insecticides applied to control RLEM in spring pastures or legume break crops with FOO levels greater than 3 t DM/ha will reduce

their numbers. It will also provide benefits by allowing increased spring growth, seed set and a reduced potential for RLEM carry over into next autumn.

However, increased production benefits can be wasted unless the increased feed is utilised by strategic grazing management or fodder conservation. It is recommended that farmers should not spray all pasture paddocks. Instead, they should select paddocks for spring spraying based on FOO levels, future grazing feed management, level of required seed production and intended paddock use next autumn.

Redlegged earth mites in crops in 2025

Spring is the time to assess RLEM risk for susceptible 2025 crops, such as canola.

If the paddock in 2024 is a cereal, examine the lower canopy when monitoring the crop for other pests. Ask yourself:

- Are RLEM easily observed?
- Are there any clover or broadleaved weeds in the paddock with obvious RLEM damage?

If the paddock is in pasture now, consider applying control measures in spring 2024 to decrease RLEM numbers for 2025.

Spraying crops in spring for RLEM doesn't work because the spray applications do not penetrate to the ground to give a good kill. This practice is more likely to expose RLEM to sub-lethal doses of insecticide, increasing the risk of insecticide resistance developing.

Instead, if the crop in 2025 is going to be canola, plan to manage your RLEM by increasing seeding rates, using seed dressings and monitoring the crop from the predicted time of RLEM hatching.

More information

To read about earlier redlegged earth mite activity in WA refer to the 2024 PestFacts WA articles:

- Issue 9 [Redlegged earth mite update](#)
- Issue 3 [Mite and lucerne flea update](#)
- Issue 1 [Redlegged earth mites are hatching.](#)

For more information on RLEM, refer to the department's diagnosing redlegged earth mite page.

For more information contact Research Scientist [Svetlana Micic](#) in Albany on +61 (0)8 9892 8591 or Technical Officer [Alan Lord](#) in South Perth on +61 (0)8 9368 3758.

Article authors: Cindy Webster (DPIRD Narrogin), Svetlana Micic (DPIRD Albany), Dusty Severtson (DPIRD Northam) and Alan Lord (DPIRD South Perth).

High levels of turnip yellows virus detected in canola crops in the Geraldton port zone

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



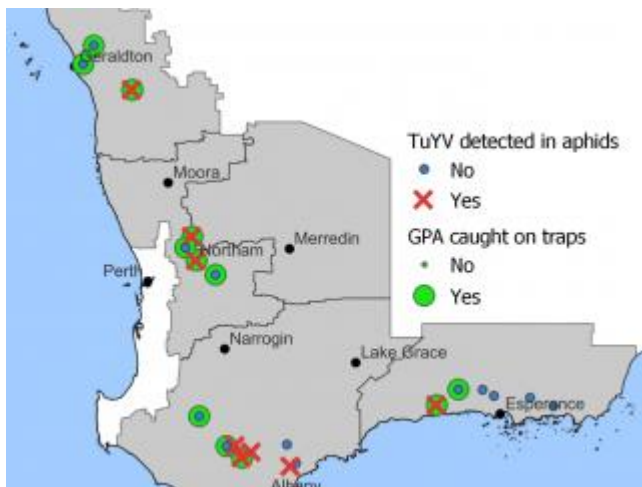
Image 3: Canola crop displaying turnip yellows virus infection. Photo courtesy of: Andrew Phillips (DPIRD).



Image 4: Canola plants displaying common symptoms of turnip yellows virus, such as stunted growth and red/yellow leaves. Photo courtesy of: Peter Norris (Agronomy for Profit).

The DPIRD Virology team has detected high levels of turnip yellows virus (TuYV) in canola crops growing around Allanooka, East Nabawa and Nangetty. This is shown in the map below. The TuYV infection has been associated with serious disease symptoms, including stunting and leaf reddening and yellowing (see pictures above).

The TuYV vector, the green peach aphid (GPA) has been present, sometimes at high levels, in these and many other crops in the Geraldton port zone since early July, suggesting that the infection is widespread. TuYV was first detected in aphids caught on traps in early July in this region and is likely to have rapidly spread over the past 6 to 8 weeks. DPIRD is currently doing further testing to understand the extent of the infection.



Findings from green peach aphid and turnip yellows virus monitoring sites, current to 9 August 2024. Map courtesy of: Ben Congdon (DPIRD).

In the Northam region, GPA populations have been building up at all sites monitored in DPIRD's trapping program, including Bolgart, Nunile, Northam, Narraloggan, since late June. TuYV was detected in migrating aphids caught on traps deployed at Northam in early June and Bolgart in mid-July. Crops at these locations were free of TuYV when they were at the 7-leaf stage, including the Bolgart crop at the flowering growth stage. The crops being monitored at Nunile, Northam and Narraloggan are now being retested as they are flowering.

As of 9 of August, only small numbers of GPA have been caught on traps at Frankland, Scotts Brook and Kendenup. TuYV has been detected in flowering crops at low levels (2-4%) at several sites in the Albany and Esperance port zones, including at Kendenup, South Stirlings and Munglinup. Therefore, as TuYV does its most damage when infection occurs prior to flowering, it is unlikely that TuYV poses a threat to canola yields in these port zones.

Management

Now that most canola crops are flowering across the WA grainbelt, foliar insecticides are not recommended.

The risk of yield losses from TuYV is highest when TuYV reaches high infection levels prior to flowering. Since TuYV cannot be sprayed out, foliar insecticides become

ineffective once infection levels are high. Furthermore, any new virus transmission that occurs after flowering begins is unlikely to cause yield loss and does not warrant foliar insecticide application. Therefore, only consider using a foliar insecticide if the canola crop has yet to start flowering.

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

For registered insecticide recommendations, refer to DPIRD's [2024 autumn winter insecticide guide](#).

Growers or agronomists who observe virus-like symptoms in canola crops are encouraged to contact Benjamin Congdon, DPIRD Research Scientist, via email at Benjamin.Congdon@dpiird.wa.gov.au.

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 prior 2024 PestFacts WA articles:

- Issue 9 article [Turnip yellows virus and green peach aphid detected in yellow stick traps and canola crops](#)
- Issue 6 article [Canola aphid and virus update](#)
- Issue 4 article [Turnip yellows virus detected in migrating cabbage aphids](#).

For more TuYV management information refer to DPIRD's [Turnip yellows virus and its management in canola](#) factsheet.

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

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

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