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

PestFacts WA

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Contents

Enhancing aphid and virus control in canola: beyond seed treatments

Image 1: Canola plants displaying common symptoms of turnip yellows virus, such as stunted growth and red/yellow leaves. Photo courtesy of: DPIRD.

As growers prepare for the upcoming season, it is recommended that you regularly monitor canola crops for green peach aphid (GPA) and the vector of turnip yellows virus (TuYV), in addition to using seed treatments, because later foliar applications may be necessary to keep the aphids and the disease in check.

Seed treatments have been an effective, low-labour tool in broadacre systems, particularly for controlling green GPA and TuYV in canola crops. Neonicotinoid-based treatments like imidacloprid, clothianidin, and thiamethoxam have been used for several years, with

imidacloprid proving effective against GPA in trials in the early 2000s. However, by 2016, resistance to neonicotinoids began to develop in Australian GPA populations.

Recent field trials at Muresk conducted by the Department of Primary Industries and Regional Development (DPIRD) Grains virology team have shown that a neonicotinoid seed treatment was ineffective for controlling GPA and suppressing subsequent spread of TuYV, likely due to resistance and other factors like poor insecticide coverage.

Foliar insecticides, like sulfoxaflor, flonicamid and afidopyropen, are available for managing GPA in canola but timing of application is key for TuYV control. DPIRD trials in 2023-24 showed that spraying sulfoxaflor 2 weeks after aphids were released into the plots more effectively reduced GPA numbers and TuYV spread than spraying 3 days prior to, or 4 weeks after aphids were released. Paddock conditions differ from experimental plots, and while moderate virus control was achieved in trials using sulfoxaflor, foliar insecticides may perform better in large paddocks by disrupting plant to plant virus spread because they reduce GPA populations and provide some protection to uninfected plants.

Moving forward, development of canola varieties that are resistant to TuYV will provide another management option that may greatly reduce the need for insecticides. Field trials have confirmed that ATR Stingray, which has partial resistance, reduced TuYV spread compared to the more susceptible variety Bonito. Further research is being undertaken to understand the TuYV resistance phenotype and its economic benefits in a co-investment between DPIRD and the Grains Research and Development Corporation (GRDC) project DAW2305-003RTX ‘Effective virus management in grains crops’. One of the research activities is to screen current varieties for TuYV resistance.

For more information on these trials, refer to the 2025 GRDC Research Update paper Turnip yellows virus and its vector, the green peach aphid, in canola: the 2024 epidemic in southern New South Wales and management options.

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

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Free seed testing for virus infections in pulses

Image 2: Narrow-leafed lupin plant on the left displaying seed-borne cucumber mosaic virus infection compared to the healthy plant on the right. The infected plant is stunted with bunched, down curled and mottled leaves. Photo courtesy of: DPIRD.

The department is pleased to announce the initiation of a free seed testing for virus infections as part of a co-investment between DPIRD and GRDC. This project focuses on detecting cucumber mosaic virus (CMV) in lupins and lentils, along with pea seedborne mosaic virus (PSbMV) in field peas.

Sowing pulse seed infected with CMV or PSbMV can result in infected seedlings being scattered randomly within the crop. Aphids can pick up the virus from the infected plants and spread it to nearby healthy plants. These viruses lead to reduced plant health and decreased yield and the virus is then found in the seed.

The best strategy to avoid high virus infection levels in these crops is to sow certified virus-free seeds. The free seed testing initiative aims to empower growers to make informed decisions about their seed lot choices, ensuring healthy and thriving crops.

Growers are invited to submit a 400 g seed sample from their lupin and pulse seedlots, accompanied by some basic information. The DPIRD team will conduct thorough testing and will endeavour to get results back to growers as soon as possible.

Growers who are interested in using this free-of-charge service need to email DPIRD Research Scientist Dr Nazanin Nazeri and request the seed testing form. Each grower can submit a maximum of 2 different seed samples.

Please note that this free testing program is limited to 40 seed samples from across Western Australia. To ensure your samples are included in the testing service, please send them promptly. We will notify growers via the PestFacts WA newsletter once the maximum number of samples have been received, and no further samples can be accepted.

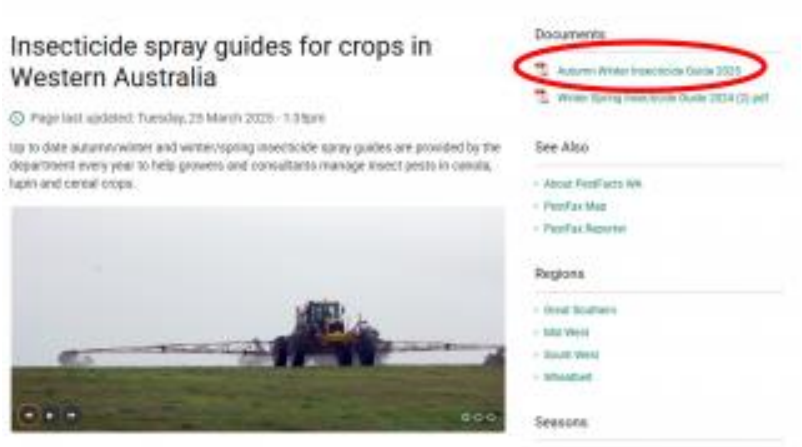
Please note that this testing service is separate from DPIRD's Diagnostic Laboratory Services (DDLS) seed testing service.

For more information on these viruses, refer to DPIRD's Pea seed-borne mosaic virus (PSbMV) in field peas and Cucumber mosaic virus in narrow-leafed lupins pages.

For further information contact Research Scientist Nazanin Nazeri in Perth on +61 421 158 989.

Article authors: Nazanin Nazeri (DPIRD South Perth) and Cindy Webster (DPIRD Narrogin).

2025 autumn winter insecticide guide: key updates and registration changes



Updated annually, this spray guide lists the chemicals and application rates registered by the Australian Pesticides and Veterinarian Medicines Authority (APVMA) for use on canola, cereal, lupin, and other grain legume crops to control common invertebrate pests of seedlings. It includes foliar sprays, seed dressings, and baits.

This year diafenthurion 500g/L has been added to the guide for the control of redlegged earth mites on cereal crops. This has been approved under APVMA permit PER95087 until 30 September 2025.

Also included in this guide are metaldehyde 50 g/kg and fipronil 1.5 g/kg baits registered for early establishment pests of canola including slugs, snails, Portuguese millipedes, European earwigs and slaters.

Phasing out of chlorpyrifos

The use of chlorpyrifos in agriculture has recently undergone significant regulatory changes, as outlined in the APVMA's final regulatory decision published in the Special Gazette, 3 October 2024. As of September 2024, chlorpyrifos products are no longer registered for use on canola, cereal and legume crops in Australia. A 12-month transition phase is currently in place allowing chlorpyrifos products already in the supply chain or on-farm to be used according to their existing labels. Newly manufactured or imported chlorpyrifos products will be re-labelled to exclude most agricultural crops, including canola, cereals and legumes.

The registered application rates of chlorpyrifos products are listed in this guide during the phase out period, however, the trade names are not included.

From 30 September 2025, it will be an offence to possess, supply, or use the cancelled active constituents, chemical products and products bearing the previously approved labels.

The APVMA sets Maximum Residue Limits (MRLs) to ensure food safety and compliance with domestic and international standards. With the phase-out of chlorpyrifos, exporters

must adhere to the MRLs of importing countries, which may differ from Australian standards. To ensure compliance, growers should consult their grain marketer and stay updated on any changes to MRLs in key export markets.

For more insecticide information

The 2025 Autumn Winter Insecticide Spray Guide spray guide is intended as a reference only. Always read chemical labels before applying insecticides. Not all insecticide trade names may be listed, so consult retailers for other registered insecticide options.

A Beneficials chemical toxicity table has been developed to help growers and advisors make informed decisions about the insecticides and miticides they use in their crops. This information represents a collaboration between Cesar Australia and University of Melbourne, with investment from GRDC as part of the Australian Grains Pest Innovation Program (AGPIP).

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

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Get to know your beneficials: predatory carabid beetles

Carabid, or ground beetles, are generalist predators that can provide year-round pest control in your crops and pastures, with more noticeable activity during high pest pressure.

Both larvae and adults feed on a wide range of invertebrates, including caterpillars, aphids, beetle larvae, earwigs, snails and slugs. Adults hide during the day and actively hunt on the soil surface or plant foliage at night, while their ground dwelling larvae seek out prey in the soil.

Image 3: Soil-dwelling carabid beetle larva. Photo courtesy of: DPIRD.

Carabid beetles belong to the diverse family Carabidae and range anywhere in size from 1 mm to 60 mm in length. Most adults are dark coloured and shiny, some are metallic. They feature ridged elytra (wing covers), long legs and prominent eyes and mandibles (jaws) for

capturing prey. Larvae are slightly flattened with large heads and pincer-like mandibles, and 6 prominent legs. They can be confused with similarly shaped wireworms.

Image 4: Predatory carabid beetle found while scouting a crop. Photo courtesy of: DPIRD.

Caterpillar hunting carabid beetles

Image 5: The caterpillar hunting green carab beetle (Calosoma schayeri). Photo courtesy of: DPIRD.

One of the more commonly found carabid beetles, the metallic green carab beetle (*Calosoma schayeri*), is known for hunting and feeding on caterpillars. It can grow to about 25 mm in length and will squirt a noxious secretion when disturbed. Large numbers are often found swarming around lights.

Image 6: Carabid beetle and the remains of a chewed native budworm caterpillar trapped in a pitfall trap. Photo courtesy of: DPIRD.

Assessing and managing beneficial predatory beetles for pest suppression

A diverse range of carabid beetles may be present under stubble or along crop edges, but they are difficult to detect during the day due to their nocturnal activity and fast movement. Carabids are often found when trapping for ground dwelling pests such as slugs, weevils and earwigs, using refuge or pitfall traps. You can read more about trapping methods in the 2024 PestFacts WA Issue 3 article Using pitfall traps to detect pests.

The benefits of carabid predators are reduced by broad-spectrum insecticides. To support beneficial insects for pest suppression:

- Apply insecticides only when pest levels are at or approaching damage thresholds, or if seedlings loss is occurring and plants are at a density critical for yield.
- Consider using insecticides that are soft on beneficial insects if spraying for pests.

For details on insecticide toxicity to beneficial insects, refer to Cesar Australia's Beneficials Chemical Toxicity Table.

Further Information

You can also download or order a hardcopy of GRDC's Beneficial insects – the back pocket guide.

The role of carabid beetles as predators of slugs in southwest Victoria was recently discussed in the 2025 Grains Research and Development Corporation (GRDC) update paper Slug communities' response to environment and management across southern Australia.

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

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