SARDI Entomology Pest Facts
SA & western Victoria Edition

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Pea weevil – time to act

Pea weevil (*Bruchus pisorum*) is a major pest of pea crops in spring. The presence of live adults can result in downgrade or rejection of grain at delivery. There have been several instances of pea weevil detections in delivered grain in recent seasons.

To effectively control pea weevil, insecticide sprays must be applied at the optimal time, after the majority of adults have invaded pea crops, but before they lay eggs. Based on recent and forecast temperatures, the SARDI pea weevil model is predicting that pea weevil invasion into South Australian pea crops commenced on 22nd August and would have been approximately 70% complete by 31st August. Peak egg-laying activity is estimated to commence in podding crops around 5th September.

We advise that pea crops should be monitored for pea weevil using a sweep net over the next several days leading up the optimal spray date, on or around 5th September. Where numbers exceed spray thresholds, pea crops that have commenced podding should be sprayed on these optimal dates by undertaking a border spray 40m in width using a registered insecticide. For pea crops not yet podding, spraying (if warranted) should occur as soon as the first pods develop. Spray thresholds are at least 1 adult per 10 sweeps, averaged over 10 sampling sites.

Pea weevil adults are chunky, brownish beetles flecked with white, black and grey patches, and grow to 5mm long. The tip of the abdomen extends beyond the wing covers and is white marked with two black oval spots. This species is not a true weevil and adults lack the typical weevil snout. Eggs are yellow, cigar-shaped and 1.5mm by 0.6mm. More information on identification, lifecycle and management of pea weevil: Pea weevil, SARDI (pdf), and Managing pea weevil, NSW DPI (pdf).

Diamondback moth

Populations of diamondback moth (DBM) (*Plutella xylostella*) have increased to 100-200+ in 10 sweeps in late mid-late flowering canola crops in the northern SA mallee, around **Waikerie**, **Loxton** and **Alawoona** (Richard Saunders, Dodgshun Medlin). Larvae have caused foliar damage grazed stems. Some growers have applied synthetic pyrethroids with poor results, likely due to insecticide resistance. Affirm® insecticide is reportedly providing good control but in some instances larvae have soon reappeared in treated crops. DBM breeds continuously

Bill Kimber (08) 8303 9536, bill.kimber@sa.gov.au
Helen DeGraaf (08) 8303 9543 Michael Nash (08) 8303 9537
Kym Perry (08) 8303 9370 Greg Baker (08) 8303 9544
www.sardi.sa.gov.au/pestfacts

GRDC Grains Research & Development Corporation
NPI National Invertebrate Pest Initiative
Government of South Australia Primary Industries and Regions SA
SARDI South Australian Research and Development Institute

and all life-stages (including non-susceptible eggs, pupae and adults) are often present simultaneously. For this reason, a two-spray strategy (two sprays, one week apart) is sometimes recommended in years with high population pressure. In southern SA mallee, lower populations around 10-25 larvae per 10 sweeps in canola are reported around **Karoonda**, **Lameroo** and **Tailem Bend** (Richard Saunders, Dodgshun Medlin). These crops are being monitored closely.

Despite dry conditions during August, DBM populations in other regions appear to have declined. On Lower Eyre Peninsula, populations are around 10 larvae per 10 sweeps, up to 20 in 10 sweeps in canola around the coastal region of **Mount Hope** (Tim Richardson, Carrs Seeds, Nigel Myers, Cummin Ag). Heavy rainfall during July significantly reduced numbers in some areas. On the West Coast and Upper Eyre, numbers have also declined (Andy Bates, Bates Ag consulting) now ranging from 1 per 10 sweeps in healthy crops around **Mt. Cooper** and **Port Kenny**, up to 90-120 in stressed crops around **Streaky Bay** (Clint McEvoy, West Coast Ag). At **Kimba**, numbers have declined from 10-15 in late July to 1-2 larvae in 10 sweeps. On Upper Yorke Peninsula, 20 larvae in 10 sweeps are being observed (Chris Davey, YPAg). The reasons for apparent decline are unclear, however July rainfall, recent frosts, and observed fungal disease (*Zoopthera* sp.) may all have contributed. Beneficial insects may also be playing a role in unsprayed crops, following early colonisation of canola crops by DBM in many districts this season.

With populations likely to increase over coming weeks as temperatures rise, we recommend frequent monitoring of canola crops (at least once per week) from now until late spring. DBM development rate is closely linked to temperature – refer to the diamondback moth development calculator. Generally, relatively warm and dry conditions favour population growth. Heavy rain events can cause significant larval mortality by drowning; therefore, we recommend re-assessing spray decisions after any forecast rain.

We recommend avoiding the use of synthetic pyrethroids and organophosphate for DBM control in canola crops. These products are likely to be largely ineffective due to widespread resistance in Australian DBM to these chemical groups. In addition, the removal of beneficial insects early in spring increases the potential for secondary flares of diamondback moth and/or other canola pests, such as aphids. Alternative options are available for DBM – consult agronomists and resellers for advice. More information on diamondback moth: PestFacts Issue 9, 2014 (pdf).

Research into regional movement of DBM – how you can assist

Kym Perry (University of Adelaide, SARDI) would like to hear from advisors or growers who observe DBM populations in canola and/or Brassicaceous weeds this spring. As part of his PhD research into the regional movement of DBM, Kym is organising an Australia-wide collection of DBM populations for inclusion in a genetic study. The research aims to improve understanding of the source/s of DBM populations that seasonally re-colonise canola crops in southern Australia. This information will aid the canola industry in the future development of predictive tools to help forecast the seasonal risk, and in the design of insecticide management strategies. For details, feel free to contact Kym on kym.perry@sa.gov.au or 0421 788 357.

Etiella monitoring

Lentil growers will soon need to start monitoring lentil crops for *Etiella* moth (*Etiella behrii*) flights, beginning either from early podding or when the *Etiella* degree-day model predicts the onset of peak flight activity (at 351 degree day accumulations). To run the model, obtain your local daily maximum and minimum temperatures from the Bureau of Meteorology Climate Data webpage and input the data from July 21st onwards (refer to model instructions).

Current model values at 3rd September, 2014 are: **Kadina – 213**; **Minlaton – 209**; **Roseworthy – 218**; **Horsham – 169**. We will provide updated values in the next edition.

Insecticide spray timing is critical for effective *Etiella* control, as sprays must target adult moths before they lay eggs. Monitor by taking multiples of 20 sweeps in representative locations across the paddock. Spray thresholds are 1-2 moths per 20 sweeps. Alternatively, pheromone traps (sticky traps baited with an *Etiella*-specific female sex pheromone) can be used to monitor for *Etiella*. A minimum of two to three traps should be placed at least 20 metres apart within a crop and positioned approximately 250mm above the canopy. Traps should be placed at least two metres into the crop to avoid artificially high catches on crop edges. Pheromone lures can be purchased from Richard Vickers on (02) 6254 6902 or richard.vickers@hotmail.com. More information: Etiella management in lentils, SARDI.

Native budworm trapping

Monitoring for native budworm (*Helicoverpa punctigera*) larvae should now be underway in flowering pulse and canola crops. Larval activity has been observed in peas at **Wandearah**, faba beans at **Mundoora** and lentils at **Port Broughton** in the Mid North (Iain Tod, Kerin Agencies).

SARDI and colleagues at cesar, University of New England (UNE) and several South Australian agronomists are collaborating on a new trapping for native budworm in cropping areas of South-eastern Australia. A trapping network also continues to operate in Western Australia. Native budworm populations breed on a range of native host plants in inland Australia during winter. In spring, moth flights into cropping areas of southern Australia commonly occur on northerly-easterly weather systems. Detecting moth flight activity provides an early warning of potential egg lay and larval activity in crops. For the past week, moth trap catches have been low with the exception of **Minnipa** on upper Eyre Peninsula. A recent survey in pastoral country north of the Gawler Ranges in SA, between **Yardea** and **Kingoonya**, indicated low native budworm populations (Peter Gregg, UNE, Kym Perry, SARDI).

Monitor crops by taking multiples of ten sweeps in representative locations across the paddock and calculate the average number of larvae per 10 sweeps. An economic threshold calculator for direct yield loss (not grain quality) is available in the DAFWA fact sheet (link below). Growers should substitute in their own control costs and grain prices. Research by DAFF Qld has shown that, under current cost structures, spray decisions in smaller seeded pulse crops (e.g. desi chickpea) can be made based on these calculated yield loss thresholds without risking penalties for reduced grain quality; however, this may not apply to larger seeded grains (e.g. Faba bean, field pea) where there is a higher likelihood of unacceptable levels of partially chewed grain in the sample. If treatment is warranted, one well-timed synthetic pyrethroid application often provides effective control and may prevent reinfestation for up to six weeks. More information: Management of native budworm, DAFWA (pdf).

Cereal aphids

Cereal aphid populations are building up on tillering wheat and barley crops around **Kimba** on upper Eyre Peninsula, where a number of growers are considering early control to prevent build-up (Hayden Whitwell, Agsave Merchandise). In some crops, leaves are becoming covered with honeydew which can lead to sooty mould growth. When deciding whether to treat, we recommend monitoring the *trends* in aphid and beneficial populations – whether increasing, declining or stable. Where early treatment is warranted, we recommend considering the use of pirimicarb to conserve natural enemies, which play an important role containing aphid populations in spring. More information on cereal aphids: PestFacts Issue 5, 2013 (pdf).

Bill Kimber (08) 8303 9536, bill.kimber@sa.gov.au
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Bluegreen aphid

Bluegreen aphid (*Acyrthosiphon kondoi) are active in the Mid North,* with sightings in lentils at **Red Hill** (Sam Trengrove, Trengrove Consulting), **Port Broughton** (Iain Tod, Kerin Agencies), and **Mallala** (Michael Brougham, Elders). On Eyre Peninsula, bluegreen aphid and cowpea aphid (*Aphis craccivora*) were identified from early flowering lentils at **Lock**, along with 'mummified' aphids indicating beneficial parasitoid wasp activity (Chris Pearce, Elders). Large populations of bluegreen aphid were recently discovered on medic plants in the Gawler Ranges (Peter Gregg, UNE, Kym Perry, SARDI). More information on pulse aphids: Aphid in lupin crops - DAFWA (pdf).

Spring control of redlegged earth mite

Early spring is the time to consider the merits of spring control of redlegged earth mite (*Halotydeus destructor*) (RLEM) according to the Timerite® strategy. Controlling RLEM in spring before they lay over-summering diapause eggs can significantly reduce their populations in the following autumn. Optimal spring spray dates for RLEM in southern Australia are mainly between mid-September and mid-October; exact dates are unique to each property and can be obtained from the Timerite® website. It is recommended to spray within the two week window before the optimal date. Examples of recommended spray dates include: **Cummins –** 15th September, **Minlaton –** 18th September, **Jamestown** – 23rd September, **Coonalpyn –** 23rd September, **Penola** – 5th October. Ensure correct identification of earth mites; Timerite® is designed for redlegged earth, and is not effective against other species.

Resources

- **Insect diagnostics**: SARDI Entomology offers an insect diagnostic service for PestFacts subscribers. Please send at least two intact specimens in a non-crushable container along with host food, collection details, description of crop damage and contact details, to: NIPI diagnostics SARDI Entomology Unit GPO Box 397, Adelaide SA 5001.
- **PestFacts map** is a new interactive service available on the SARDI website at www.sardi.sa.gov.au/pestfacts-map. The map allows users to search and view all historical pest reports across South Australia and Western Victoria. Search by crop, pest or beneficial invertebrate, and time period of interest. The map will be updated with each issue to include new reports.
- **'Best Bet' IPM strategies** for major pests of grains crops are available in easy-to-use tables, downloadable from the IPM workshops website.
- **IPM guidelines for grains:** The new national IPM guidelines for grains website provides a comprehensive collection of tools and strategies to manage pests in grain cropping systems across Australia.

• Previous issues of PestFacts • • PestFacts map • Images of insects and damage • I SPY manual • Crop mites: back pocket guide • Crop weevils: back pocket guide •

__PestFacts__ is a FREE service providing updates throughout the growing season on an "as-needed" basis of the latest information on invertebrate pests in broad acre crops in South Australia and western Victoria. It is supported by GRDC's National Invertebrate Pest Initiative (NIPI). All information is sent by email to subscribers. Please email a coordinator to be placed on the circulation list. Your support and feedback are essential to the success of PestFacts.

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