SARDI Entomology Pest Facts
SA & western Victoria Edition

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Etiella flight activity

Etiella moth (*Etiella behrii*) flight activity is being observed in lentil crops at **Mallala** (Michael Brougham, Elders) and **Balaklava** (SARDI), where spraying is underway. The *Etiella* degree-day model presently (17th Sept.) estimates day degree accumulations of around **290** for the main lentil growing districts of SA, and **237** for Horsham, Victoria. The degree day model predicts 'peak' flight activity (**351** degree-days) around 29-30th September in SA and 10th October at Horsham. However, earlier or later flights can still be economically damaging.

As *Etiella* flights have already been observed, commence sweep net monitoring lentils now. Monitor lentils at least once a week during podding for *Etiella* activity, taking a minimum of three groups of 20 sweeps randomly in each lentil field. A spray threshold of 1-2 *Etiella* moths per 20 sweeps is recommended. More information on *Etiella* and use of the model: Etiella management in lentils - SARDI and PestFacts Issue 10, 2014 (pdf).

Diamondback moth

Diamondback moth (*Plutella xylostella*) populations are increasing in canola crops in the northern South Australian Mallee. One crop near **Loxton** had extremely high numbers of over 1000 larvae per 10 sweeps, which had stripped most green material from the leaves, stems and pods (Richard Saunders, Dodgshun Medlin). An unsprayed canola trial at **Loxton** was also severely damaged by larval feeding (R. Saunders). In other regions of southern Australia and western Victoria, reports indicate generally lower numbers but in many instances still around threshold levels, necessitating spray decisions. From 20-100 larvae per 10 sweeps are present in canola around **Langhorne Creek** (SARDI), and around 80-100 larvae per 10 sweeps were reported in most canola crops checked near **Berriwillock** in Western Victoria (Michael Clarke, Landmark).

Parasitism has been observed in diamondback moth samples collected from canola crops across various Australian locations during the last two weeks (Kym Perry, SARDI & University of Adelaide). Percentage parasitism generally ranged from low to moderate, as follows: **SA Mallee**: **Loxton** (17%), **Meribah** (0%), **Lameroo** (3%), **Monarto** (11%), **Tailem Bend** (0%), **Wynarka** (6%): **Eyre Peninsula, SA**: **Elliston** (0%), **Drummond Point** (0% and 0%) **Mt. Drummond** (0%), **Lock** (0, 10, and 26%), **Cowell** (5%); **Upper Yorke Peninsula**: **Port Broughton** (17%); **Victorian Mallee**: **Robinvale** (5%), **Ouyen** (5%). **Western Australia**:

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Walkaway (0%), **Northampton** (0% and 0%); **New South Wales**: **Temora** (0%), **Boomi** (31%): **Queensland**: **Dalby** (14%). Infection with the naturally occurring entomopathogen, *Zoopthera radicans*, was also observed in samples from **Lock** on Eyre Peninsula.

The parasitoids have not yet hatched to allow identification but are suspected to be *Diadegma semiclausum* and *Apanteles ippeus*. These and other parasitoids commonly attack diamondback moth larvae and pupae. *D. semiclausum* is generally considered to be the most important parasitoid of diamondback moth. The female wasps lay eggs into small diamondback moth larvae. Wasp larvae feed on the host larva and pupate in a brown cocoon inside the silken cocoon of diamondback moth. The pupae of diamondback moth parasitised by *D. semiclausum* are brown and 'cigar-shaped' with distinctly rounded ends compared to healthy pupae.

More information on thresholds and management of diamondback moth: PestFacts Issue 10, 2014 (pdf) and the GRDC Diamondback moth Fact Sheet (pdf).

Native budworm and lesser budworm

Latest moth trapping results indicate moderate flight activity on upper Yorke Peninsula during this week, but generally low activity in other districts. See budworm trapping (pdf) for the latest results. More information on native budworm: Management of native budworm, DAFWA (pdf) and PestFacts Issue 10, 2014 (pdf).

Lesser budworm (*Heliothis punctifera*) was confirmed from a wheat crop at **Jamestown** (Steve Richmond, Landmark). Lesser budworm is an infrequent pest of lentils, lupins, medics and vetch, however a large outbreak of this species occurred in South Australia in 2005. Damage is similar to that caused by native budworm. Larvae cause minimal damage when feeding on foliage but will eat seeds resulting in some grain losses. Monitor as for native budworm. More information: Lesser budworm, SARDI.

Flores weevil

An unusual weevil was collected from a trial lucerne crop at **Mount Compass** on the Fleurieu Peninsula (SARDI). These weevils have been identified by CSIRO weevil taxonomist, Dr. Rolf Oberprieler, as *Atrichonotus sordidus*, sometimes referred to as the Flores weevil. This species is native to Argentina but has previously been recorded in New South Wales and the Australian Capital Territory. This is believed to be the first record of Flores weevil in South Australia. Very little is known about its biology; however, adults and larvae are thought to feed on a wide range of legumes, especially clovers, and other plants. Flores weevil has been recorded severely damaging clover pastures and lucerne crops in New Zealand. Last season, this species was identified causing severe damage to a canola crop near Gundagai, NSW (PestFacts South-eastern).

Atrichonotus sordidus adults are small, round weevils with a broad snout, light greyish-brown in colour with darker brown patches on the thorax. If you observe any unusual weevils attacking crops, please contact us directly.

Beneficial insects abundant in crops

Brown lacewings (Fam. Hemerobiidae), predatory nabid bugs (Fam. Nabidae) and low numbers of parasitoid wasps (Fam. Braconidae) were found in bean and lupin crops around **Cummins**, Eyre Peninsula. High numbers of hoverfly larvae (Fam. Syrphidae) were observed feeding on bluegreen aphids in lupin crops along with adult hoverflies feeding on nectar in adjacent flowering crops (SARDI). Hoverfly larvae were confirmed from wheat at

Mannanarie (Steve Richmond, Landmark) and adults in high numbers have been present in crops throughout the Mid North (David Pratt, AgBiz Consulting).

Sticky traps used in crops to monitor for aphid flights from the end of July have consistently picked up high numbers of hoverfly adults, high numbers of parasitoid wasps, as well as occasional brown lacewings in regions including Fleurieu Peninsula and the Mid North (Orville Hildebrand and Ryan Bateman, FPAG; Sarah Noack, Hart Field-site Group).

Generalist predators such as hoverflies attack aphids, brown lacewings attack a broad range of pests including moth larvae and eggs, aphids, thrips and mites, while nabid bugs also have a broad range of prey including native budworm, diamondback moth, aphids, leafhoppers, mirids and mites. Parasitoid wasps are more specific depending on the species such as *Apanteles* sp. brachonid wasps that attack DBM, with others attacking armyworm, cutworm and native budworm larvae, while other species (e.g. *Aphidius* sp.) attack most aphid species.

On Eyre Peninsula, predatory shield bug eggs and emerging nymphs (Fam. Pentatomidae) were confirmed from cereals at **Kimba** (Hayden Whitwell, Agsave Merchandise) and near **Cleve** (Cherylynn Dreckow, Elders).

Shield bug eggs are laid in an irregular, cluster on a leaf and in this case were dark with short spines around the rim. The young, first instar nymphs, most likely spined predatory shield bugs (*Oechalia schellenbergii*), had reddish abdomens, dark heads and thorax, and antennae that were obvious and segmented. The gregarious nymphs remain grouped adjacent the egg cluster before dispersing to feed on prey. Adult shield bugs can be up to 12 mm long, with a shiny, shield-shaped body, often with dark brown and yellow patterns, are predators that have a piercing proboscis used to suck out insect body contents, and will help control a range of pest moth larvae.

As spring temperatures continue to rise and pest activity correspondingly increases, it is recommended to monitor crops for beneficial insects before making spray decisions. These natural enemies will increase in numbers in response to pest numbers. The application of chemical treatments will have a detrimental effect on populations of predatory insects and heighten the reliance on insecticides to control pest species.

Snail reminder

Leading up to harvest is a good time to start thinking about snail contamination of grain and strategies to manage the problem. Monitoring snail populations before harvest is recommended to determine the need for header modifications, as movement into crop heads is dependent on weather conditions. Check the number of snails, particularly those in the size range most likely to cause problems at harvest (i.e. similar in size to grain). Header modifications aim to reduce intake of snails into the harvester and maximize the separation of snails and grain within the harvester. More detail will be provided in the next issue of PestFacts.

With zero tolerance for bait contamination of grain, all snail baiting must be finished at least two months before harvest to ensure bait has broken down and does not itself become a contaminant. Baiting activities should be focused mainly in autumn when snails first become active but before they lay eggs, and may need to continue into winter. Spring baiting is generally far less effective. More information on snails: PestFacts Issue 1, 2014 (pdf).

Yellow-headed pasture cockchafers

Yellow-headed pasture cockchafers (*Sericesthis* spp.) were identified from a pea crop near **Langhorne Creek** on Fleurieu Peninsula. The cockchafers were present in the crop, along with pea weevil and millipedes, only where plants were poor. The paddock was planted with barley last season. (Orville Hildebrand, FPAG).

Yellow-headed cockchafers (scarab beetle larvae) feed on the roots of a wide range of pasture and crop plants. Feeding (root pruning) causes weakening of plants, wilting, and eventually plant death. Yellow-headed cockchafer larvae are 'C' shaped, creamy-grey in colour with a yellow head capsule, and grow up to 25-30 mm long. They are present in the soil from late autumn until mid-to-late summer when they emerge as adults. Adults are yellow-light brown beetles about 10-15 mm long.

To monitor paddocks for cockchafers, dig in the soil in affected areas. Control of yellow-headed cockchafers is difficult. Unlike black-headed cockchafers which emerge to the surface to feed, insecticides do not effectively control yellow-headed (and red-headed) cockchafers due to their subterranean feeding habits. Cultural controls are likely to be the best control methods. Cultivating affected areas prior to sowing can help reduce larval numbers by killing them directly and exposing larvae to predation by insectivorous birds. Other options include rotating pasture with a cereal (e.g. oats) and re-sowing bare areas using a higher seeding rate.

Other pests

Pea weevil

On Fleurieu Peninsula pea weevil (*Bruchus pisorum*) has been confirmed from a pea crop near **Langhorne Creek** causing some feeding damage to pea seed in the soil (Orville Hildebrand, FPAG). More information on pea weevil: PestFacts Issue 10, 2014 (pdf).

Armyworm

Armyworm larvae at very low numbers was confirmed near **Langhorne Creek** on Fleurieu Peninsula, causing foliar damage to a barley crop at flag leaf emergence and moths were active generally in cereal crops in the region (Orville Hildebrand, FPAG). Larvae were also confirmed from barley crops in the Mid North at **Mannanarie** and **Belalie East** (Steve Richmond, Landmark). More information: PestFacts Issue 8, 2014 (pdf).

Cutworm

In the Mid North, cutworm (*Agrotis spp*) were confirmed causing damage to about 20% of plants in a cereal crop (Chris Butler, Roseworthy Rural), and was causing minor foliar damage to wheat at **Taylorville** in the SA Mallee (Craig Davis, A W Vater). Herringbone cutworm was confirmed causing slight damage to recently sown clover pasture also in the Mid North (David Pratt, Ag Biz Consulting). More information: PestFacts Issue 5, 2014 (pdf).

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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