PESTFACTS South-Eastern

Issue No. 13, 3rd November 2008

PestFacts is a free service designed to keep you informed about invertebrate pest-related issues - and solutions - as they emerge during the winter growing season. The service is supported by the GRDC's National Invertebrate Pest Initiative, with a focus on pests of broad-acre grain crops in south-eastern Australia.

Co-ordinator: Paul Umina TEL: 03 8344 2522 FAX: 03 8344 2279 pumina@unimelb.edu.au

CONTENTS

MORE APHID REPORTS

There have been further reports of aphids causing damage to various crops around Victoria. Agronomist, Doug Perryman (Bridgewater Farmware), reported cabbage aphids (*Brevicoryne brassicae*) in several canola crops around Bridgewater, in the Northern Country district of Victoria. Doug says numbers have built up very rapidly over the past fortnight, and some plants are now fully covered from top to bottom. Numbers are higher in dry-land crops compared with those that have been irrigated, adding further damage to the already moisture stressed plants. Because dry-land crops are close to windrowing chemical control is unlikely, however Doug says some of the irrigated crops may require chemical applications in order to protect crop yields.

Agronomist, Greg Toomey (Landmark), reports finding high numbers of cabbage aphids in many canola crops near Elmore, in the Northern Country district of Victoria. Greg says about two-thirds of crops in the area have required chemical control, and estimates yield losses could have been as high as 10-20% without spraying.

Cabbage aphids grow up to 3 mm in length and have a dull grey-green coloured body. Under favourable conditions, dense colonies form, which appear bluish-grey and are covered with a fine, whitish powder. Click here for images of cabbage aphids and refer to PestFacts Issue No. 7 for more information.

Green peach aphids (*Myzus persicae*) have been identified for research agronomist, James Sewell (PGG Wrightson Seeds), from newly sown forage brassica crops near Smeaton, in the North Central district of Victoria. Seedlings are only about 2 cm high and groups of 7-8 aphids can found on each leaf across the majority of affected paddocks. James says the aphids

appear to be causing some damage although it is difficult to determine because the plants are also moisture stressed.

The green peach aphid is a pest of many crops, but particularly fond of crucifer vegetables, oilseeds and some pulses, such as lupins. Unlike cabbage aphids, which form dense clusters, green peach aphids are usually sparsely distributed within a crop, mainly on the underside of leaves. Some populations are resistant to insecticides and growers are urged to rotate their use of chemical groups to prevent resistance from developing further.

Adult green peach aphids have an oval shape body and may be pale yellow-green, orange or pink in colour. Winged adults have a dark patch on the abdomen. They are approximately 3 mm long. Click here for images of green peach aphids and here for further information on aphid management in canola crops.

LESSER BUDWORM

Lesser budworm (*Heliothis punctifera*) larvae have been identified for consultant, Greg Paul (IMAG consulting), from a sample collected near Forbes in the Central West Slopes and Plains district of New South Wales. They were found in a flowering crop of chickpeas and some damage to the foliage was evident, however Greg says there was very little damage to the pods, especially given the high numbers which were present. The majority of caterpillars were found on the ground rather than on the crop plants, and may have been migrating towards an adjacent wheat crop. Some medics and grasses among the chickpeas were also damaged, and Greg says the caterpillars appeared to be favoring these over the crop itself.

Lesser budworm is closely related and similar in appearance to the native budworm (see below), although they are rarely seen in the agricultural areas of south-eastern Australia. Early larval instars of these two species are very difficult to tell apart. Lesser budworm larvae are usually dark in colour while native budworm varies from black to green to light brown in colour. Both have a light coloured strip down each side of the body. For older larvae (>20 mm in length), lesser budworm have white hairs on the collar (segment behind the head) and the body, while native budworm have black hairs on the collar and black to blackish-brown body hairs. A hand lens or microscope is required to observe the difference in hair colour.

Outbreaks of lesser budworm are a rare event as a unique combination of biological and climatic conditions are required. They normally occur in outback Australia where they feed on desert daisies. Conditions that may favor outbreaks in south-eastern Australia are significant inland summer rains which trigger growth bursts of vegetation, enabling moth numbers to build up, followed by favorable winds that enable long distance flights into agricultural and pastoral districts. The potential damage this species can cause is unclear as the full host range is unknown, however like most noctuid moths they are generalist feeders and do not target specific crops.

Click here for images of the lesser budworm.

NATIVE BUDWORM

Researcher, Stuart McColl (CESAR), reports finding native budworm (*Helicoverpa punctigera*) larvae in a canola crop near Elmore, in the Northern Country district of Victoria. When using a sweep-net an average of 10 caterpillars were found in 6 sweeps, and these ranged in size from 20–40 mm in length. There have also been several unconfirmed reports of native budworm

causing problems in some parts of the Wimmera district of Victoria, although many crops have now been cut for hay or harvested

Entomologist, Peter Mangano (DAFWA), states that some pulse and canola crops remain at risk of damage by native budworm whilst the pods have some suppleness and the seeds are not yet dry and hard. As crops begin to mature and pods harden it is unlikely that native budworm grubs will be able to cause significant crop damage in many regions. However, it is important to remember that budworm could still cause damage to windrows, particularly if there are prolonged cool and damp conditions.

The size of native budworm larvae and time till harvest are important factors that need to be considered when estimating the potential feeding damage likely to occur. Under warm conditions native budworm can complete their lifecycle in approximately 3 weeks and larvae are most damaging from mid to late instars (15-30 mm).

Click here for images of native budworm and refer to PestFacts Issue No. 10 for further information.

BENEFICIAL INVERTEBRATES

Many groups of beneficial invertebrates have been slow to build up in crops this season however there has been a significant increase in numbers in many areas over the last few weeks. This may be of little consequence in regions where crops are already close to harvest and/or pests have already built up to high numbers requiring chemical control. However, beneficial species will be important and provide some level of pest suppression in later growing and irrigated crops.

Research agronomist, Simon Craig (Birchip Cropping Group), reports high numbers of ladybird beetles (Family: Coccinellidae) in a vetch crop that is being attacked by aphids, near Birchip in the Mallee district of Victoria. Researcher, Stuart McColl (CESAR), has also found a significant increase in ladybird numbers at a research trial site near Elmore in the Northern Country district of Victoria. Both adult and larvae ladybird beetles consume prey including aphids, leafhoppers, thrips, moth eggs and small larvae. Hoverflies (Family: Syrphidae) have been identified for several agronomists from samples collected in canola and forage brassica crops in western Victoria and the Central West Slopes and Plains district of New South Wales. Hoverfly larvae are grub or maggot-like (with no visible legs), and are often mistaken for pest caterpillars. They grow up to 10 mm in length and importantly, are efficient predators of aphids.

Other beneficial species likely to be encountered at this time of year include spiders (Order: Araneae), parasitic wasps (*Aphidius* spp.) and lacewings (Order: Neuroptera). A thorough inspection of the crop and identification of beneficial species present is recommended prior to making a control decision. If chemical control is warranted, insecticides that are less toxic to beneficial species should be considered.

For more information on beneficial invertebrates refer to PestFacts Issue No. 12.

AUSTRALIAN PLAGUE LOCUST WARNING

Australian plague locusts (*Chortoicetes terminifera*) have been sighted across large areas of northern Victoria, which has lead authorities to declare this season may be the worst in 30 years. Although locusts are dying in dry regions, they are thriving in areas with any green vegetation and present in densities of several hundred per square metre. Large numbers have

also been observed in the Riverina and Central West Slopes and Plains district of New South Wales. This serves as a reminder for growers in these regions to remain on the lookout for this potentially devastating pest. Any sightings should be reported to the Rural Lands Protection Board or the Department of Primary Industries so that populations can be monitored and control measures implemented.

Australian plague locusts can cause severe damage to pastures and a range of field crops if they are not controlled. Swarms covering one square kilometre will devour any green plant material in their path, and can eat up to 10 tonnes of vegetation in a day. To prevent the build up of large populations, locusts need to be controlled during their early stages as 'hoppers' when they are unable to fly. Once locusts reach the adult stage, controlling them becomes difficult and expensive. Adults can move long distances very quickly and have been recorded travelling hundreds of kilometres in a single night.

Australian plague locusts are readily distinguished from other locust species by the large dark spot present on the tip of each hindwing and red coloured shanks on their hindlegs. Adults are up to 40 mm long with a variable body colour of grey, brown or green. They are the most important pest species of locust in Australia due to the area infested and frequency of plagues.

Click here for images of the Australian plague locust and refer to the Australian Plague Locust Commission for further information on the present situation across south-eastern Australia.

GRAINS STORAGE PESTS

With many crops now approaching harvest it is timely to think about on farm grain storage issues. Harvested grain is at its highest quality when it is first loaded into storage. If the storage environment is not managed correctly the quality will steadily deteriorate. Grain insects, end-user requirements and maintaining quality are important issues to consider.

Generally, grain to be stored for more than 6 weeks should be treated with an insecticide. Grain can be treated with a protectant when it is added to storage or fumigated in a sealed silo. Most contact insecticides provide between 3-6 months protection, although this is dependent upon the moisture content and temperature of the grain. High moisture content and temperatures can lead to the rapid breakdown of chemicals and leave grain vulnerable to attack. Always aim to store grain at a moisture content of 12% or less and at a temperature of 25°C or less. This will also help to limit the activity of insects and avoid grain spoilage from moulds and fungi.

One of the most important things for growers to understand is the markets they wish to supply and their requirements. This takes careful planning and could mean improving storage facilities. Markets are increasingly demanding grain free of chemical residues. In sealed storage, grain can be fumigated effectively, providing quick, inexpensive and long-lasting insect control without the problem of pesticide residues.

Phosphine fumigation is one of the most commonly used techniques for protecting stored grain from insect pests, with at least 80% of Australian grain fumigated with phosphine each year. Unfortunately the widespread use of phosphine has lead to the development of resistance in four common insect pests of stored grain: the lesser grain borer (*Rhyzopertha dominica*), the saw toothed grain beetle (*Oryzaephilus surinamensis*), the flat grain beetle (*Cryptolestes* spp.) and the rust red flour beetle (*Tribolium castaneum*).

These pests are all small (between 2-3 mm long) and dark reddish-brown to grey in colour. Check for these species in grain residues in harvesting and grain-handling equipment, and in storages. Strong resistance in these pests has now been detected in populations from all states in eastern Australia. However, this resistance can be managed by ensuring phosphine is only used when absolutely necessary and that fumigation takes place only in airtight storages. Fumigating in unsealed storages will worsen the resistance problem by selecting for resistance.

Grain handling equipment also requires some routine maintenance in order to minimise the possibility of contributing to grain contamination. Seals on silos should be checked before each filling and replaced if worn or damaged. Headers, carriage equipment (trucks, bins), augers and storages should be thoroughly cleaned down after use. Clean up spillages in areas around silos and destroy all residues to prevent re-infestation.

Click here for further information on stored grain issues.

PESTFACTS SERVICE

PestFacts is sent directly to readers via e-mail (subscription free). This service is produced on an 'as-needs' basis in response to pest observations and reports. Your support and feedback are essential to the success of PestFacts. If you have recently observed or heard news of invertebrate pests in crops and pastures, contact the co-ordinator: Paul Umina on (03) 8344 2522 or send an email to pumina@unimelb.edu.au. A free pest identification service is available to all PestFacts subscribers.

GRDC Grains Research & Development Corporation