

The Sweep Net insect identification and IPM support service

After uncertain flooded beginnings, most areas have seen good conditions for summer crops resulting in a flourish of insect activity – both good and bad. In addition to the usual summer crop insect pests, there has also been considerable beneficial activity. As always, the extra insect activity brings with it the need for tough decisions by growers and advisers on whether or not to spray for insect pests.

While wheeling out the boom spray is the traditional and often easy decision to make, it may also come with a hidden cost – the cost of killing the many beneficial species that are out there in your paddock working hard to keep the bad guys in check.

A new support service 'The Sweep Net' provides insect identification (ID) and Integrated Pest Management (IPM) support to grains advisers to assist with the successful implementation of IPM strategies. It offers a free insect ID service for in-crop insects as well as free workshops on insect ID for agronomists (interested growers are welcome also). Information about IPM and assistance and support to help advisers to implement IPM in grain crops is also provided. Support includes training in insect ID and monitoring along with the practical application of economic thresholds.

According to The Sweep Net Manager 'Rachel Waugh', "IPM uses a variety of techniques to minimise dependence on broad-spectrum insecticides and the corresponding resistance, pest resurgence and environmental issues that can occur. Along with crop rotations, tolerant and resistant varieties and mating disruption technology, a mainstay of IPM is the retention of beneficial insects within cropping systems. This is done largely through the judicious use of selective chemistry, avoiding unnecessary use of broad spectrum insecticides such as the organophosphates and synthetic pyrethroids, or at least delaying this where possible – the "go soft early" approach. The Sweep Net offers assistance to consultants and growers to make it

happen. The Sweep Net is similar in this sense to the established Beat Sheet service in Queensland.

"In northern NSW grain crops there are many beneficial insects. These include:

- A variety of predatory beetles including: ladybirds, staphylinids, carabids, cantharids and others;
- Predatory bugs including species such as glossy shield bugs, predatory shield bugs, damsel bugs, assassin, pirate and big-eyed bugs;
- Several species of lacewings, many ants, hoverflies, some earwigs;
- Spiders, although not strictly insects, are also very effective predators.

"There are also vast numbers of egg and larval wasp and fly parasitoids that play a very significant role in reducing pests. A great example that we have been seeing a lot of lately is the introduced tachinid fly, a parasite of Green Vegetable Bug (GVB). This fly lays its eggs on the thorax of the GVB, burrows into the bug when it hatches and in doing so kills the bug. There are numerous awesome examples of natural predators at work out there.

"By encouraging the retention of beneficial insects within our cropping systems we are able to take advantage of the natural biological processes that help to suppress general pest populations and through doing that reduce our dependence on insecticides," said Rachel Waugh.

The Sweep Net will be holding workshops around northern NSW to support IPM starting May 2011. If you are interested in attending or hosting a workshop, please contact The Sweep Net (details below).

Information regarding pest issues is regularly posted to our blog: <http://blog.une.edu.au/thesweepnet/> and more general information about IPM and the insect identification service is available at: www.une.edu.au/sweepnet. If you want some assistance or are interested in attending a workshop please give Rachel Waugh a call.

Further information:

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GRDC code: A09/1287

First Australian glyphosate resistant broadleaf weed confirmed

Eight populations of flax-leaf fleabane (*Conyza bonariensis*) have been confirmed resistant to glyphosate in northern NSW and southern Queensland. This is the fifth weed species to be confirmed resistant to glyphosate in Australia in the past 10 years, with four being found in the past three years, and is the first glyphosate resistant broadleaf weed found in Australia.

This should ring alarm bells with no-till farmers and road managers whose heavy reliance on glyphosate as their herbicide-of-choice continues unabated.

Steve Walker of the University of Queensland, whose DEEDI team made the discovery, says that growers must be even more vigilant in their spring and summer weed control because these weed seedlings can withstand up to eight times the normal rate of glyphosate. In other words, the glyphosate just won't work!

Conyza species have also developed resistance to glyphosate in South Africa, USA, Brazil, Spain, Colombia and Israel.

Fleabane has become one of the major weeds of no-till farming in Australia through its ability to germinate on or close to the soil surface throughout the year. Fleabane is also a major weed of road shoulders and verges.

In summer it quickly exhibits moisture stress, yet can survive long periods of high temperatures and regrow following rain.

Fleabane can produce over 100,000 seeds per plant, which are easily spread by wind and water. Fleabane seed has been measured travelling up to 500 m from the parent plant with resistant plants being easily spread from other areas.

"While small susceptible plants can be well controlled under ideal conditions with glyphosate, control of large fleabane in fallows where glyphosate alone has been used often gives poor control of susceptible plants," says Dr Walker. "Often these plants have germinated in the previous winter crop and are large, woody and stressed when sprayed after harvest."

"Of the herbicides that are registered for weed control in fallow, research and farmer experience has shown that the "double-knock" technique, where glyphosate plus 2,4-D is applied followed by paraquat 7-10 days apart provides the most consistent commercially acceptable control of this tough weed", Dr Walker said.

Herbicides are more effective on small seedlings, so farmers need to be looking for seedlings following rain to get high levels of control at lower cost.

Using a range of management techniques is always the

best option to prevent the development of glyphosate resistance. Cultivation is very effective at controlling seedlings and preventing further germination and can be economic if combined with redistribution of phosphorus or liming. Growing a competitive winter cereal is another effective non-chemical option, especially when combined with spraying small fleabane with a robust rate of post-emergent selective herbicide.

Further information:

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GRDC code: DAQ00137

Glyphosate resistant Windmill grass foiling weed-free fallows

Windmill grass from no-till fallow paddocks in central NSW has been confirmed to have developed resistance to glyphosate. Windmill grass joins awnless barnyard grass and liverseed grass as the third grass weed species confirmed to be glyphosate resistant in the GRDC northern grain region since 2007.

Dr Chris Preston, University of Adelaide and Chair of the Australian Glyphosate Sustainability Working Group (AGSWG) says this development poses huge threats to no-till farming systems in summer dominant rainfall areas of Australia. "Windmill grass has been an increasing problem in summer fallows across Australia, and the development of glyphosate resistance will make management of this weed even more challenging" he said.

Windmill grass (*Chloris truncata*) is a native annual or perennial grass that has become an increasingly important weed in summer fallows and along roadsides across Australia. It is becoming more common in fallows due to the widespread adoption of no-till farming to conserve soil moisture and reduce erosion risk, which relies heavily on the use of glyphosate.

In many regions storing soil moisture during summer is critical to reliable crop production and windmill grass readily removes the soil water farmers are trying to preserve for the next crop. Research in Western Australia has shown that an uncontrolled infestation of windmill grass in a summer fallow can reduce yields in the following wheat crop by up to 25%.

Agronomist Maurie Street from Grain Orana Alliance in central west NSW, feels this is a challenge his members can do without. "The limited management options for windmill grass highlights the need for more research to keep our no-till farming system operating," Mr Street says. "Growers need to be checking their weed control and taking early action to prevent its spread. This is easier said than done if those plants are resistant to glyphosate."

Like any summer growing weed, high levels of control can be difficult to achieve because of high temperatures,

low humidity and periods of moisture stress at the time of spraying. The weed's spread is aided by seed heads breaking off and blowing across paddocks. It produces large numbers of seed which readily establish as seedlings following 10-20 mm of rain.

Windmill grass' ability to have seedlings establish after each fall of rain, makes control expensive and difficult.

Even with glyphosate-susceptible windmill grass, seedlings are best controlled when small, as the level of control declines rapidly with increasing size.

Touchdown® HiTech is currently the only glyphosate formulation registered in Australia for control of windmill grass. Current research suggests that the best control of glyphosate-susceptible windmill grass seedlings is to use the double knock technique by applying glyphosate followed by a robust rate of paraquat. However results on established plants are quite variable.

Widespread use of glyphosate to control weeds on roadsides has seen windmill grass become a common species on many Australian roadsides. It is then spread by slashing, vehicles and wind. Once established on roadsides seed heads can easily be blown into adjacent paddocks.

If you suspect glyphosate resistant weeds on your property or roadsides contact the relevant state expert. Details of who to contact in each state are available from the Australian Glyphosate Working Group web site -<http://www.glyphosateresistance.org.au/suspect%20glyphosate.htm>

The Australian Glyphosate Sustainability Working Group is supported by the Grains Research & Development Corporation and key R&D based crop protection companies with an interest in the sustainability of glyphosate. Their web site has a range of information about glyphosate resistance including a register of glyphosate resistant weed populations and guides and links for management of glyphosate resistance in different crops and management situations.

Further information:

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GRDC code: ICN00009

Stubble, sowing date, and break crops the topics for new fact sheets

Three new fact sheets released by the Grains Research and Development Corporation (GRDC) provide growers and advisers a useful information resource.

Stubble management - Managing winter crop stubble without reaching for the matches can be challenging

when handling heavy stubble loads. A number of techniques, other than burning, can be employed to deal with heavy stubble loads. - To download the fact sheet, visit www.grdc.com.au/GRDC-FS-StubbleManagement.

Time of sowing – northern region - The optimal sowing date results in wheat flowering after the last frost but before heat stress events begin. Adequate reserves of soil moisture must also be available. Crops are now being planted earlier. To download the fact sheet, visit www.grdc.com.au/GRDC-FS-TimeOfSowingNorth.

Break crops - Crop rotations, particularly those that include nitrogen-fixing pulses, are forging a permanent place in northern region farming systems. A break from winter cereals can provide long-term insect, weed and disease management benefits and short-term potential profits. To download the fact sheet, visit www.grdc.com.au/GRDC-FS-BreakCropsNorth.

Mouse management – Northern grain growers are being urged to vigilantly monitor for increases in mouse populations and strategically bait to reduce potential seed loss and crop damage this coming season. To download the fact sheet, visit www.grdc.com.au/GRDC-FS-MouseManagement2011

GRDC code: COR00019

Applications for the Australian Rural Leadership Program (ARLP) now open

The Australian Rural Leadership Foundation is now accepting applications for Course 19 of the Australian Rural Leadership Program (ARLP).

The program's objective is to improve the economic, social and environmental wellbeing of rural Australia by investing in leadership development. It does this by seeking highly motivated people already actively involved in industry and community, with a commitment and capacity to take on higher leadership roles.

According to David Mailler, a 2010-11 GRDC-sponsored participant the ARLP has changed him in ways he would never have imagined before he started. "I was very naive coming into the program. I had a blinkered view of how the world worked and that has changed dramatically".

Through interaction with key people in industry, government and community from Australia and overseas, the ARLP builds future leaders through exposure to real issues that are critical to rural Australia. It challenges participants to develop the skills and knowledge and the networks essential to effective leadership.

Applications close on 31 July 2011. Application forms can be downloaded from: www.rural-leaders.com.au

Further information:

info@rural-leaders.com.au or phone: 02 6281 0680

Plant Health Australia Launches Biosecurity Online Training (BOLT)

Minimising the biosecurity risks posed by insects, diseases and weeds found overseas or that are new to Australia is a key focus for Australia's grains industry. To assist grain growers secure their farms and, in turn, Australia's world-class biosecurity system that protects our agricultural industries, PHA has launched *Biosecurity Online Training (BOLT)*.

Grain growers will find using BOLT helps them to understand where they fit in the broader biosecurity landscape. BOLT will also assist growers by increasing their awareness of how Australia's agricultural industries – and thus their livelihoods – are protected from new plant pests.

Access to PHA's BOLT is free for growers as well as industry and government representatives and can be found at www.planthealthaustralia.com.au

Further information:

**Stephen Dibley on 02 6215 7709,
sdibley@phau.com.au**

On-line exotic pest identification tool

The **Plant Biosecurity Toolbox (PBT)** provides detailed, web-based diagnostic information to assist with the rapid identification of exotic plant pests and diseases in the event of an incursion.

The comprehensive resources of the toolbox include:

- Information on pest biology and taxonomy
- Diagnostic morphological, biochemical and molecular tests

[Ⓛ] Varieties displaying this symbol beside them are protected under the Plant Breeders Rights Act 1994.

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- Images of the pest, host symptoms and damage.

Go to <http://padil.gov.au/> and click on PBT (Plant Biosecurity Toolbox). GRDC's investment in PaDIL is through the CRC for National Plant Biosecurity and Plant Health Australia.

Further information:

**Dr Gary Kong, 07 4696 7018
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Dates for coming GRDC Updates for your diary

Update dates August 2011 and 2012 – Northern Region

August 2011

- 2-day summer crop Update – 8th and 9th August, Goondiwindi Community Centre
- 3 Grower Updates Clifton Senior Citizens Hall (Tuesday 23rd August), Warra Memorial Hall (Wednesday 24th August) and Spring Ridge Country Club (Wednesday 10th August)

February/March 2011

- Dubbo: RSL, March 1, 2012
- Goondiwindi Adviser Update: Community Centre, March 6-7, 2012
- 4 Grower Updates will also be run around this time, dates and times TBC

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