

## Reducing the impact of establishment pests

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Growers and agronomists are justifiably concerned about the likely impact of establishment pests in no-till cropping systems.

Slug control is a particular concern, but this needs to be considered in the context of actions taken to control other pests, since these actions are relevant to long-term control of slugs.

None of the slug species found in southern cropping systems is native to Australia. The two most damaging species are *Deroceras reticulatum* (grey field slug) and *Milax gagates* (black keeled slug). The striped slug (*Lehmannia nyctelia*) can aggregate and sometimes occur in large numbers but this is ranked as far less damaging than the other two.

One important reason for identifying slugs is that different species become active at different times and prefer different conditions.

For example, *D. reticulatum* will continue to breed and produce eggs as long as there is a moist environment. During the drought there was an extended period over which summer conditions were not suitable for this species and egg-laying began only after the autumn break. Last year's wet summer and autumn, however, meant there was sufficient moisture for the slugs to remain active so there were all stages (eggs, juveniles and adults) of grey field slugs present at seeding.



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*M. gagates* normally burrows into the soil and becomes active only after the soil profile is wet. This has allowed it to survive the drier conditions of the past few years and become more important as a pest in southern cropping areas. This species too was already active at seeding time this year.

Slugs are hermaphrodites. This means every individual can produce eggs, and a mature *D. reticulatum* can produce more than 1,000 eggs in ideal conditions. This



THE GREY FIELD SLUG, *DEROCERAS RETICULATUM*, WILL CONTINUE TO BREED AND PRODUCE EGGS AS LONG AS THERE IS A MOIST ENVIRONMENT.



THE BLACK KEELED SLUG, *MILAX GAGATES*, BURROWS INTO THE SOIL AND BECOMES ACTIVE ONLY AFTER THE SOIL PROFILE IS WET, SO IT IS ABLE TO SURVIVE EXTENDED PERIODS OF DRY CONDITIONS.

means the number of slugs present at seeding time in years when there is good autumn rainfall is likely to be extremely high relative to the numbers present in drought years, with all growth stages likely to be present.

In their countries of origin, populations of these pest slugs are controlled by natural enemies, but these are not present in Australia and the main biological control agents of slugs in Australia's southern wheat belt are several species of carabid beetle. However, these are not specialist slug predators and will almost certainly be overwhelmed by the sheer number of slugs present. They will have an impact, but on their own will not be enough to reduce slug numbers to acceptable levels.

Cultural controls are extremely important in the control of many pests, including slugs. Reducing the food and shelter available to them by tillage or burning will help to reduce slug numbers but will also remove the habitat for predators. This sort of action will not eliminate a slug problem, so other actions will still be required.

One application of bait is not likely to give good results because of the range of life stages present. Even if baiting achieves a high kill-rate of active stages, the population will be re-built from the egg masses present that will continue to hatch over the next month. This means that at least two applications of bait will be required.

The rate at which bait is applied needs to take into account the slug population in each paddock. Consider in particular the number of baiting points per square metre and the rain-fastness of the baits.

In a cereal/canola rotation, reducing the population size in cereal crops will not only benefit the current crop but have flow-on effects in the following canola crop because a lower starting population will enable baiting and biological controls to have more impact in the following crop.

Carabid beetles can be killed by applications of synthetic pyrethroid and organophosphate insecticides (in particular), so application of these types of products for caterpillars, mites or aphids, for example, will disrupt the biological control of slugs.

And be aware that European earwigs cause damage that is almost identical to that caused by slugs, so it is important to check before sowing to see whether or not a seed-dressing needs to be used for earwigs.

For more information: 'Integrated pest Management for Crops and Pastures' by Paul Horne and Jessica Page (Landlinks Press).



THE STRIPED SLUG, *LEHMANNIA NYCTELIA*, CAN SOMETIMES OCCUR IN LARGE NUMBERS BUT USUALLY DOES LITTLE DAMAGE.

## Taxation rebate for new conservation tillage equipment

Farmers who buy new seeding equipment in the any of the next three financial years may be able to claim a 15% Refundable Tax Offset (RTO).

This RTO will be available during the 2012-13, 2013-14 and 2014-15 financial years. Equipment bought before or after this time will NOT be eligible.

Details are still sketchy, however to qualify for this offset a farmer must hold a Research Participation Certificate indicating he or she has participated in research into the carbon sequestration properties of soil. SANTFA believes this requirement can be met by completing a relevant survey.

We recommend that growers talk to their accountants before making a decision to buy a new machine based on availability of this RTO.

The following summary of the eligibility criteria may provide a starting point for discussion of your options.

### The Conservation Tillage Refundable Tax Offset

Schedule 2 to the Clean Energy (Consequential Amendments) Bill 2011 amends the Income Tax Assessment Act 1997 (ITAA 1997) to provide a Refundable Tax Offset (RTO) for certain new depreciating assets used in conservation tillage farming practices.

#### Summary of new law

A taxpayer will be entitled to an RTO of 15% of the cost of an eligible asset that:

- they held during the income year;
- they started to use or had installed ready for use during the income year in the course of carrying on a primary production business; and

- had not previously been used or installed ready for use by the taxpayer or any other taxpayer (that is, the seeder must be new).

Only the following assets will be eligible for this RTO:

- tine machines fitted with minimum tillage points to achieve minimum soil disturbance and less than full cut-out. These include narrow points, knife points and inverted 'T' points.
- disc openers (single, double or triple arrangements).
- disc/tine and disc/blade hybrid machines.

The RTO will be available for assets the taxpayer first uses or has installed ready for use between July 1, 2012 and June 30, 2015.