

Can slugs be a problem during crop establishment

Trials conducted in New Zealand have shown that slugs can certainly be a major problem during crop establishment in spring, especially in spray-drill situations.

In pasture, slug densities as low as 5/m² have been shown to reduce ryegrass and white clover seedling numbers by 27% and 29% respectively within 21 days of sowing.

Low slug numbers can cause similar damage to cereals and brassica crops. Fortunately, with good forward planning and the controls currently available, farmers can ensure good crop establishment in spite of slugs.

Slug biology and life cycle

After 2 weeks to several months, depending on temperatures and moisture, the eggs hatch into a miniature replica of the adult some 2-5 mm long. Juveniles take 3-9 months to reach sexual maturity depending on species and temperatures.

Slugs reproduce all year round meaning eggs, juveniles and adults can all be present at one time. Slug numbers are highest in spring, decline over summer and begin to rise again after autumn rains. Highest numbers are found on heavier, wetter soils and in summer-wet districts.

Slugs favour warm, moist conditions and are most active at around 15-18°C. Activity slows with declining temperatures although some activity can still be observed at temperatures close to freezing. Slugs are generally most active from dusk till dawn and will seek shelter during frosts and hot or dry conditions.

Damage

Crops are most vulnerable to slug damage during establishment. Seeds are either completely eaten or hollowed into destroying the embryo or allowing the entry of pathogens that cause the seed to rot. New shoots can be damaged or eaten before or after emerging.

The amount of damage that occurs is dependant on both slug numbers and activity. A low number of slugs that are very active because of warm, moist conditions can do a large amount of damage.

Control

Cultural practises can help control slugs. Mob stock (stocking rates at least 350 cow days/ha or 1500 sheep days/ha) before planting, as foraging will remove plant trash and trampling will kill slugs and close cracks in the ground.

For cultivated seedbeds work the seedbed to a fine tilth to ensure the break up of clods. Since most slugs will not actively burrow into soil like earthworms, it is usually only cloddy seed beds that provide hiding places for slugs and therefore sustain damage.

It is important to check the slug population in each paddock before sowing the summer crop. This can be done by putting 10 or more objects (damp sacks, boards, fibrolite, etc) out over several nights and checking under them each morning. If slugs are found under most objects it is probably economic to control them by applying slug baits.

AgResearch trials have shown that the best control is achieved when baits are broadcast either prior to planting (1-5 days) or at planting, except where a well defined drill furrow remained after sowing. In this situation it was found that within 2 days of sowing almost all slugs were living and feeding within the drill furrow. Under these circumstances it is important that either all the baits, or a proportion of the baits are drilled into the furrow along with the seed.

SlugOut® slug and snail bait comprises a biodegradable inert core covered with an edible coating containing the active ingredient metaldehyde.

Metaldehyde immobilizes slugs and causes irreversible damage to the mucous cells resulting in slug death. It is effective under moist or dry conditions.

SlugOut is highly palatable to slugs, easily applied and has good weatherability and several weeks residual activity. The main advantage it has over other slug baits is coverage – 195 baits/m² for SlugOut (at 15kg/ha) compared to 20 to 70 baits/m² for other products at their recommended application rates.

Coverage is important because slugs find their food mainly by chance since they can only detect food from very close up.

For SlugOut there is a far greater chance slugs will find baits and feed on them than other options.

Slugout® provides good control of slugs at crop establishment.

Application:

Cultivated seedbeds - broadcast 15kg/ha prior to (1-5 days), at or immediately after sowing.

Direct drilling – baits can be broadcast on the surface, drilled into the furrow. Typically broadcast applications give better control than furrow.

- Broadcast - apply 15kg/ha prior to (1-5 days), at, or immediately after sowing.
- In furrow – drill 10kg/ha into soil along with seed. Use only in situations where the drill leaves a distinct open slot.
- Split applications – Broadcast half the application rate one to two weeks prior to sowing and broadcast the other half at sowing.