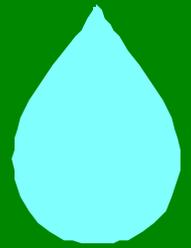


Before Application

Safe Application of Slug Pellets



Why safe application of slug pellets matters

Slugs are a common and voracious pest of arable, potato, vegetable and soft fruit crops and occasionally grassland. The principle damage to cereals (especially winter wheat) is through grain hollowing and grazing leaves as they emerge, damage to rape is by eating the young stem during emergence and seedling leaves. Damage to potatoes, soft fruit and vegetables is from eating the edible crop or through contamination thereby reducing its quality and marketability.

Slug problems are most noticeable in the mild wet autumns which are most favourable to slug activity with dry weather and cold conditions limiting their activity. Slug eggs also hatch in the autumn and it is the younger slugs which are the more voracious.

The principal treatment for slugs is through the application of slug pellets which are based on a cereal based bait and a molluscicide (metaldehyde or methiocarb). Particular care needs to be taken with slug pellets. As cereal baits they are designed to be attractive to slugs and thus may attract other animals. Pellets include agents such as bittering agents to make them less palatable to pets. Nevertheless every year the Wildlife Incident Investigation Scheme (WIIS) reports a small number of incidents involving slug pellets. These often involve pet dogs eating spilt slug pellets or having access to open bags. Therefore it is important for everyone to make sure that slug pellets are stored and handled correctly, only applied when needed and best practice is followed during application.

This guide looks at the key practices you need to follow when test baiting and applying slug pellets.

Test Baiting

In any pest control situation it is important you first establish the nature of the problem. Research funded by HGCA has shown that trapping with layer's mash can help farmers check whether treatment with slug pellets is needed.

For wheat: assess slug activity with traps set out before cultivating, when there is dew or the soil surface is visibly moist and the weather mild (5-25°C).

Traps consist of a hardboard or plastic cover about 25cm across, with a small heap (20ml or 2 heaped teaspoonfuls) of chicken layers' mash (**NOT slug pellets**) beneath. Nine traps (13 in fields larger than 20ha) should be set out in a 'W' pattern in each field. Concentrate on areas known to suffer damage. Leave traps overnight and examine early the following morning. A catch of 4 or more slugs/trap indicates a possible risk, where soil and weather conditions favour slug activity

For winter oilseed rape: weather conditions during the short period between harvesting cereals (especially wheat) and drilling may not suit trapping. It may be worthwhile to trap in standing cereals up to 10 days before harvest, particularly if you plan to broadcast seeds into standing cereals or stubble (e.g. Autocast). In the 7-10 days before cereal harvest, or in stubble, put out slug traps when the soil surface is visibly moist and the weather is mild (5-25°C).

A catch of 4 or more slugs/trap in standing cereals, or 1 or more slugs/trap in cereal stubble indicates possible risk if other conditions are met.

You can get more information on trapping and associated decision trees for wheat and oilseed rape from HGCA Topic Sheets 84, 85 and 88 at www.hgca.com.

Other crops:

The HGCA research applies specifically to winter wheat and oilseed rape, but the principles and techniques of trapping apply to other crops although different thresholds will apply. Seek advice from your agronomist or your levy board.

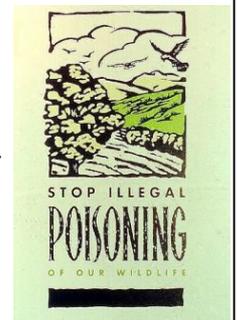


Wildlife Incident Investigation Scheme (WIIS)

WIIS is a PSD-led UK wide scheme to investigate wildlife deaths (including beneficial insects and some pets) where there is evidence that pesticide poisoning may be involved. It has been in operation since 1976 and monitors pesticide use after approval, so that it helps PSD verify and improve registration risk assessments. In 2006, just over 100 incidents were confirmed by WIIS as involving pesticides. Of these just over 60% involve the deliberate abuse of pesticides to poison wildlife or pets, a smaller proportion involved misuse of pesticides. Poorly applied or stored slug pellets account for at least 10 incidents every year.

Report suspected incidents to:

0800 321600



Slug Testing Baits

Alternative baits such as wheat seed, apple, carrot and cat food have been tested but chicken layer's mash has given the best overall results. This is why it is the recommended bait. If you are tempted to try something else make sure the bait is palatable and easy for slugs to eat. Hard foods such as pellets, grain or dry pasta will not be easy to eat until they have been softened. If trapping over night pre-wetting/soaking will be necessary.

Latest regulatory requirement from PSD bans the use of slug pellets as trapping baits in winter wheat and oilseed rape.

Never use slug pellets as a trapping bait

Trap Covers

Other trap covers such as carpet underlay, ceramic tiles and egg cartons and specialist mats have been tested. Plastic plant pot saucers and hardboard are ideal because of their low cost and ready availability. Whatever is used remember to weight the cover down to stop it blowing away.

Storage

All pesticides including slug pellets need to be kept in a secure pesticide store (Best Practice Guide - Pesticide Storage). Because they are bulky, there may be times when additional storage space is needed. Ensure they are kept secure, in a dry and fire-proofed area and away from livestock, pets and animal feedstuffs. Take particular care when handling pellets to avoid tearing corners or scuffing the packaging. Over wrap torn or part used bags. When pellets are out of the secure store, do not leave them unattended or where the person in charge can't see them. Ensure part opened packs are re-sealed and stored and transported safely. Do not leave part opened bags in the back of a vehicle.

Application Machinery

A specially developed small spreader with a spinning disc is the most common application method for slug pellets. A spinning disc fertiliser spreader fitted with a small particle restriction kit may also be suitable. Both types give an even spread by overlapping adjacent spread widths. Pneumatic machines spread across their full width with only end overlap required. Other machines with oscillating spouts will require overlapping passes.

Application Variables:

Height: Disc or spout height will effect overall spread width. Use a consistent height at all times.

Ground speed: Ground speed affects application rate. Refer to manufacturer's calibration/dose rate table

Pellet properties: Shape, strength, density and size(s) affect the spread width and flow rate within the spreader; calibration is necessary whenever changing slug pellets.

Spread width will be affected by pellet properties, disc/spout speed, deflector plates and spreader height.

For more about slug pellet and fertiliser application read the [new BCPC Spreading Fertilisers and Applying Slug Pellets](#) handbook which can be ordered from www.bcp.org

Calibration

A full/set-up calibration should be done once per season and when changing slug pellet type. Follow application machinery manufacturer's instructions for calibration. Spreading characteristics depend on pellet size, shape, strength and density. So in most instances the actual slug pellets will have to be used and appropriate label specified PPE must be worn.

- i) Priming: Before testing a new or clean machine it will need to be primed as initial deposits in the spreader can affect flow rates. Partially fill the hopper with slug pellets and run the applicator at expected ground speed at a low dose setting on treatable crop for 2-3 minutes. Use this opportunity to measure the spread width and note disc/spout height, then empty the hopper.
- ii) Full/set-up calibration: Fill the primed hopper with 1kg pellets and record flow meter setting and the time it takes to empty the hopper. You can do this while applying to the crop, or whilst static by using sacking or a collecting chute to capture the pellets in a bucket. Repeat the process for each of the different flow meter settings. With this information it is then possible to prepare your own calibration dose rate table reflecting different ground speeds and spread widths. NB Use fresh pellets each time as their properties will be altered when they go through the spreader
- iii) On-going calibration: Use field sizes and field doses during the season to check that application rate remains consistent. Walk across the spread width from time to time to see what the application is like.
- iv) Testing spread patterns: some spreaders can throw to one side or apply unevenly. A full spread pattern test can be conducted with spreader trays set at 1m intervals to capture pellets. Measure tray contents to generate a spread profile.

Filling

Remember to wear the required PPE. Take care to avoid any spills when filling the applicator. To catch any spills place a plastic sheet under the spreader when filling in the field. Clean up any spilt pellets **immediately**. Ensure hopper lids are secured and in place before leaving the filling area.

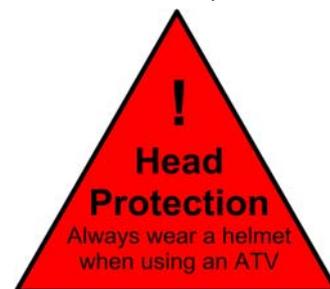
Timing

If risk is high in wheat and oilseed rape, broadcast slug pellets as soon as possible after drilling. Use further trapping to assess risk if wet weather continues after drilling.

Application

Keep to the application rate, spread width, applicator height, pellets and ground speed which was established during calibration. With the exception of headland control, do not try to restrict spread width and accept any overlap. The objective is to ensure the right dose and number of slug pellets is applied to the field. Check the label for optimum number of pellets/m². Typically this will be 30-40/m²

If a vehicle without a cab, such as an ATV is used, there will be an increased risk of exposure, especially if the product is dusty or dust is created during application. Make sure you carry out a COSHH assessment to identify how to avoid or control exposure.



Cleaning up

Wear required PPE. Empty the hopper and surplus pellets into a labelled slug pellet bag. Brush down the equipment putting any dust/pellets in the bag. Clear up any spills **immediately**, then seal and return the bag to the pesticide store. Store the pellet applicator in the dry, under cover.



The advice in this Guide has been prepared after consultation with the HGCA, agronomists, equipment and slug pellet manufacturers, BCPC and PSD

This Guide was produced by the Agricultural Industries Confederation and the Crop Protection Association as part of The Voluntary Initiative.

The Voluntary Initiative is a programme of measure agreed by Government to minimise the environmental impact of pesticides.

www.cropprotection.org.uk

www.voluntaryinitiative.org.uk

