

Insect control in grain and grain stores

TECHNICAL ADVICE



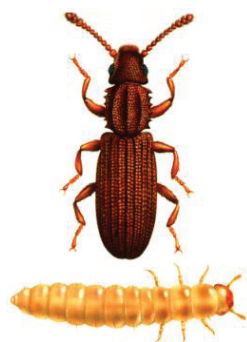
Over 90% of farm grain stores harbour at least one insect species known to infest grain, yet a recent survey discovered that only just over 50% of growers use an insecticide to treat either the fabric of the store or the grain. Why spend up to eleven months growing a crop and then run the risk of losing it in store?

Source of infestations

Most of the grain store pests we have are not native to the UK. They have been brought here through trading with other countries and transport is still the most common way they are spread. All farms are at risk but the most vulnerable are the mixed farms where purchased animal feedstuffs often introduce infestations. Mites are the only species that can be brought in from the field.

Main insect pests of stored grain

**Saw-toothed
Grain Beetle**



**Rust Red
Flour Beetle**



Grain Weevil



**Rust Red
Grain**



**Common
Flour Mite**



All these common species thrive in roughly similar conditions. Both temperature and moisture content of the grain should be reduced to avoid a build-up of populations.

Moisture Content

Drying grain is usually the first job carried out after combining. This will slow down insect development but not stop it. Most of the beetles/weevils thrive at 14-15% moisture content and will continue to develop down to 10%. Mites will stop breeding below 12% MC.

Temperature

Temperature is often overlooked. The optimum temperature for beetles/weevils is between 25 and 35°C and few will breed below 15°C. Mites like it a little cooler and although the ideal temperature is 20°C, they will continue to develop down to 2.5°C.

If the temperature of the grain is not reduced sufficiently, cool early autumn nights will allow moisture to condense on the surface of the heap which can encourage insect infestation. Once established, colonies generate their own heat and moisture, further aiding spread.

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Preparing for harvest

Good grain store hygiene is an essential foundation for keeping grain insect free. The following procedure should take place about 6-8 weeks before harvest:

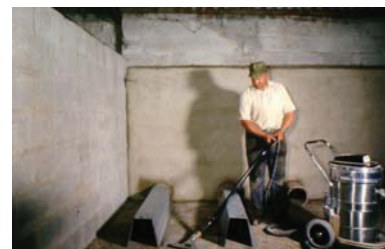
1. Sweep

Sweep all surfaces of the store thoroughly and burn the sweepings.



2. Clean

Use an industrial vacuum cleaner to clear as much dust as possible. Burn the dust.



3. Treat

Treat the fabric of the store with ACTELLIC.

- Spray the walls, floors, ducts, handling equipment etc. with ACTELLIC 50EC using 100 ml per 100 sq metres. Water rate will depend on the surface material to be treated.
- Complete the treating process by using an ACTELLIC SMOKE GENERATOR No 20. Use one per 570 cu metres of store.



Grain treatment at harvest

There are two treatment options at harvest; complete ad-mixture as grain enters the store or 'surface treatment'.

Complete ad-mixture:

- Apply by automatic equipment
- Use 8 ml ACTELLIC 50EC per tonne
- There is no withholding period with ACTELLIC 50EC treated grain



'Surface Treatment':

- Treat the floor and walls of the store with ACTELLIC 50EC
- Only put pest-free grain into the store
- Treat the final 30-100 cm depth of grain with 8 ml/t ACTELLIC 50EC as with complete ad-mixture

Controlling an established infestation

Should an infestation become established in stored grain, the only solution is to move the entire heap and treat it with automatic equipment using ACTELLIC 50EC at 8 ml/tonne. Insect kill will take between about 3 and 14 days depending on the species and temperature.