Controlling gout fly on wheat

Incidence and symptoms

Gout fly (Chlorops pumilionis) is becoming more common with earlier sowing of winter cereals. The pest now occurs in most of England and Wales, but not generally in Scotland.

There are two generations a year: the autumn generation infests early-sown winter wheat and barley; the spring one attacks late-sown winter and spring wheat as well as barley. Oats are immune.

In late September, the autumn generation lays eggs on the upper sides of leaves. Eggs hatch in 7-10 days. Larvae crawl down into the shoot to feed and cause the shoot to pucker and swell.

Attacked shoots die by the following spring, but most infested crops can recover well as new tillers replace those lost.

The spring generation lays eggs in late May and early June. Larvae feed under the leaf sheaf, causing a groove of damaged tissue on stems and preventing normal ear emergence. This can often result in substantial yield loss. In some high risk areas control is so difficult that some farmers choose not to grow spring wheat.

Autumn generation control and yield loss

To establish the effect of gout fly infestation on yield and optimum treatment timings, HGCA-funded trials were conducted in Oxfordshire and Suffolk on wheat crops at high risk, e.g. sheltered areas, or near woodland.

Early-sown (early Sept.) crops were found to be most at risk. Later-sown crops (Oct. onwards) were often free from pest attack.

Action:

- Consider sowing seed treated with an insecticide such as imidacloprid (Secur) to help protect plants against lower levels of attack by gout fly.

- Avoid unnecessary autumn insecticide applications for gout fly control. This can encourage predators and parasites which help to control the spring generation.

- If an autumn insecticide is applied for BYDV control, time the application to optimise BYDV vector control; yield response from gout fly control is unlikely.

If you are unsure about any of the suggested actions, or want them interpreted for your local conditions, consult a professional agronomist.
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Imidacloprid (Secur) seed treatment gave partial control only of gout fly at lower levels of infestation (under half plants infested) (Figure 1) but not at higher infestation levels (over half plants infested).

The timing of spray applications was vital with GS11 (first leaf unfolded) to GS12 (2 leaves unfolded) being optimal. Later applications were not effective.

Product choice was less important than spray application timing. Cypermethrin and tau-fluvalinate (Mavrik) gave equivalent levels of control (Figure 1).

Despite high levels of gout fly in some trials (over 60% plants infested), no significant yield response was found due to gout fly control. Yield responses were found where the addition of an imidacloprid (Secur) seed treatment had controlled BYDV in the same trial.

Autumn insecticide treatments aimed specifically at gout fly will not generally result in a yield response. However, a seed treatment or insecticide spray targeted at aphid vectors of BYDV will afford some gout fly control.

In very severe cases of gout fly infestation an early nitrogen application may encourage compensatory tillering.

Spring generation control

Autumn infestations may increase the risk of damage by the spring generation – a much greater threat to yield. However, additional insecticide spray treatments in the autumn aimed at gout fly may harm beneficial gout fly predators and parasites.

A balanced approach would be to use a seed treatment to protect against both gout fly and BYDV. This would reduce autumn gout fly populations, minimise impact on beneficials and predators and reduce the threat posed by the spring generation.

Any autumn insecticide should be used to control BYDV aphid vectors.

Summary

Gout fly causes very obvious damage in early-sown winter cereals. HGCA-funded trials, conducted by Velcourt with assistance from ADAS, investigated the need for, and efficacy of, gout fly control.

Crops attacked by the autumn generation generally seem to recover without significant yield loss. An insecticide seed treatment against BYDV can give incidental and partial control of gout fly and may reduce the likely spring generation. BYDV aphid vector control should remain greater priority than gout fly control in the autumn.

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Project Report 372
Pest management in cereals and oilseed rape – a guide, HGCA