

BOLSTERING THE BYDV DEFENCES (FARMERS WEEKLY)

Cereal growers will need to make the most of all the available defences against Barley Yellow Dwarf Virus (BYDV) from the coming season, stresses Agrii regional technical adviser, Will Foss.

As well as having to do without the seed treatment many have relied upon to minimise early aphid-borne infections, he points out that risk levels from the disease are higher than ever.

Not only are the autumn's becoming longer and milder, grass margins and catch and cover crops are acting as important reservoirs of infection, and the 'silent' BYDV carrier, maize is being grown far more widely in close proximity to cereals for AD.

"We've found BYDV even in late-drilled wheat crops treated with Deter this spring," reported Mr Foss. "This isn't surprising as we're often seeing aphids active in January and February these days; especially in close proximity to grass margins.

"BYDV is most damaging to plants affected in the early stages of growth. It affects wheat and oats as much as barley. Yield losses can be as high as 2.5 t/ha. And they are made worse by weather, nutritional and other pest and disease stresses.

"Unlike cabbage stem flea beetle, we have yet to see significant levels of pyrethroid resistance in the grain and bird/cherry aphids responsible for BYDV spread. However, the contact-only action of pyrethroids and their limited persistence makes spray timing and targeting crucial to success. It also puts the onus on the best possible use of non-chemical controls alongside the most careful spraying."

Reducing the migration of winged aphids into crops is the first essential in this respect. While there is little that can be done about grass margins, Will Foss considers it vital to destroy the green bridge of stubbles or catch and cover crops well ahead of sowing.

As aphids can infect by root feeding in the soil as well as above the surface, he recommends drilling at least five weeks after cultivation and only once stubble or cover growth has died back sufficiently well from glyphosate treatment to eliminate this food source. He notes that direct drilling into long stubbles has also been shown to disrupt the visual clues used by aphids to identify crops.

Later drilling is a key element in his strategy here to avoid the peak of winged aphid migration into autumn-drilled crops, in particular, and slow the development and spread of the second generation progeny responsible for the lion's share of the damage due to their numbers.

"A single winged aphid will typically produce 80 offspring which go on produce 80 each – or 6400 in total," Will Foss explained. "What's more, those carrying the virus prefer to feed on plants uninfected by it and those not carrying it prefer infected plants, thereby acquiring the infection. This makes for very rapid spread wherever conditions are warm enough. So it's not surprising that sowing a week later can reduce BYDV infections by 50%.

"Just like modern black-grass management, I would base what and when I sow in the autumn by individual field risk level, the highest risk areas being drilled as late as possible.

"While this eliminates most barleys which tend to suffer more from later-drilling than wheat, the arrival of the first two BYDV-tolerant varieties this autumn is very timely."

Only available in six row barleys, Agrii trials show they are marked less affected by the virus than others, with Rafaela the stand-out choice. It has proved highly competitive against black-grass at Stow Longa, delivering yields on a par with hybrids from late-September drilling and losing none of its performance from drilling a month later, in marked contrast to other varieties.

"As seed is likely to be limited in this first season, I'd be prioritising Rafaela for high risk fields or headlands – especially where LERAPS restrict insecticide spraying," advised Mr Foss.

Alongside these cultural controls and first class micro and macro-nutrition for the healthiest possible crops, he insists the most timely pyrethroid spraying will be essential. To ensure this he recommends using the special BYDV Alert app available through Agrii agronomists and the Rhiza digital service – both for pre-season planning and in-season monitoring.

Using the well-proven 170 day degree T-Sum model and local weather station records, this reliably predicts the emergence of the damaging second aphid generation from actual farm drilling and spray dates. Which means growers can time their sprays for the greatest value and the least environmental impact.

At the same time, he insists the best pyrethroid actives and formulations should be used at full rates to give the greatest knock-down and leeway in persistence, together with the least effect on non- targets. Experience with other crops suggests the right adjuvant choice can improve both aphid and BYDV control , he adds.

“Some growers have never had to manage BYDV without an effective seed treatment,” Will Foss concluded. “For many this will require a strategic management change – thinking ahead to what might happen and planning to deal with it through a better understanding of both the threat and controls available.”