

“When you add more herbicides, there is a law of diminishing returns.”

Technical Grassweed control

Having a clear plan is important in getting the balance right when it comes to dealing with blackgrass and BYDV control in the autumn. *CPM* asks Bayer how the loss of Deter may influence spray decisions.

By Rob Jones

Delayed drilling and a robust pre-emergence stack have become the foundation of grassweed control in wheat. But changes in the availability and efficacy of key active ingredients mean that this season growers have more issues to consider when planning their programme.

The biggest change is the loss of neonicotinoid seed treatments for cereals, such as Redigo Deter (clothianidin+ prothioconazole). Although not directly weed control products, these seed dressings allowed farmers to focus on weed control because aphid vectors of Barley Yellow Dwarf Virus (BYDV) and slugs were controlled.

BYDV control without Deter may mean that one or more insecticide applications are needed during the autumn, depending on drilling date and temperatures. Some growers may be tempted to combine herbicide and insecticide applications, but the optimum timings for both are unlikely to match, according to Bayer's Ben Giles.

"These jobs probably don't coincide with each other, particularly at the

A numbers game

peri-emergence timing," he says. "Forcing them together will probably mean both poorer weed and aphid control, so growers are advised to apply each product separately to make sure application is at the right time."

A T-Sum calculator is an important tool for determining when to spray for aphids, he highlights. The threshold for insecticide application is calculated as 170 cumulative day degrees starting from when the crop emerges.

BYDV control

"At the pre-em timing it's obviously too early to spray for aphids. Two to three weeks later, when residual tops-up are commonly applied, it's also likely to be too early for BYDV control, unless there is exceptionally warm weather, but this is less common in late drilled crops."

Drilling wheat from mid-Oct onwards to control blackgrass is also beneficial for aphid control because temperatures are likely to be lower, so it takes much longer to reach the T-Sum threshold when aphids should be addressed using an insecticide. This means drilling later reduces the need to spray to control aphids as well as all the weed control benefits.

But late drilling shouldn't be considered a cure for aphid control, according to Rothamsted entomologist Dr Stephen Foster. "Late drilling does help, but I'd say it reduces pressure on pyrethroids rather than offer an overall control method.

"Repeated sprays with pyrethroids puts greater selection pressure on aphids and I expect to see control-busting resistance develop in at least one, and perhaps all, of the main aphid vectors of BYDV if we rely solely on pyrethroids for control in the

coming years," he says.

The grain aphid already has moderate resistance, and this could also develop in bird cherry-oat aphid and rose grain aphid. The full implications of losing Deter may only become apparent in a number of seasons because BYDV levels could build up, he comments.

"Aphid and virus control is a numbers game. As the number of infected crops increase, the more chance of further infection."

One instance where aphid and weed control may coincide is when an autumn post-emergence application of Atlantis (mesosulfuron+ iodosulfuron) is being considered. All the usual caveats apply around application timing for the herbicide and insecticide, but it could be an opportunity to reduce workloads, says Ben.

The second piece of news that will affect autumn herbicide planning is that resistance testing by Bayer identified the mechanism responsible for reduced sensitivity to



Gordon Anderson-Taylor points out that the best time for BYDV control is unlikely to coincide with most grassweed herbicides.

flufenacet in blackgrass, which also has an effect on the level of control provided by two other key pre-emergence actives, pendimethalin and prosulfocarb.

“The most important thing to note going into this autumn is that the blackgrass control programme doesn’t change,” says Bayer’s Dr Gordon Anderson-Taylor. “In our resistance testing we look for the most difficult populations so that we can see differences, but these plants won’t be present on every farm. In most situations a reasonable level of control of difficult populations can still be achieved with a good programme.”

The outcome of the research was that the reduced sensitivity is caused by enhanced metabolic resistance. Tests on single actives showed reductions in performance but when mixtures and co-formulations were tested, levels of control were much better.

“Liberator (flufenacet+ diflufenican) is the foundation of many programme and the diflufenican is not affected by reduced sensitivity. Also, blackgrass programmes usually contain several products whose combined affect is a high level of control,” says Gordon.

For farmers with large blackgrass populations, he cautions against relying on herbicides alone to solve the problem. “Most growers are already using a range of products to control blackgrass, so I don’t think they will get a big uplift in control by adding even more herbicide components. The focus has to be getting the best efficacy from the actives they’re already using in combination with reducing weed populations using cultural controls before drilling.”

This view is shared by John Cussans of NIAB who has done some cost-benefit analysis of herbicide applications. “We examined efficacy versus costs of herbicides and when you add more herbicides into the programme, there is a law of diminishing returns. Once you get to around £120/ha of herbicide spend, the benefit from adding more into the programme is quite small and probably isn’t justified,” he says.

Extra products offer a few percent more control, but the money may be better spent somewhere else to improve blackgrass control. For example, drainage, patch management or higher seed rates all could give better value for blackgrass control than a bigger herbicide stack, he believes.

In addition, John is mindful that there are other issues to consider as more products are added into the herbicide programme. These include crop effects, long-term resistance and regulatory issues, so there

are sound agronomic, financial and political reasons to look at the full range of weed control options.

The most important cultural control is late drilling, highlights Gordon. “Drilling later is essential for controlling blackgrass in wheat. Typically, that means mid-Oct but it has to be after the main flush of blackgrass which does vary from year-to-year, so monitoring fields is vital. Following delayed drilling, herbicides have a much smaller weed population to work on which helps reduce blackgrass numbers to manageable levels.”

Backing up delayed drilling with a timely pre-em herbicide is also important, adds Gordon. Trials work shows that the best and most consistent control is achieved by applying pre-em within 48 hours of drilling. Soil moisture is also critical, but as most wheat in difficult grassweed situations is



Research has found flufenacet control can be reduced in some blackgrass populations with enhanced metabolic resistance, says John Cussans.

now drilled later, during Oct, there’s usually sufficient moisture in the ground, he concludes. ■

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