Patience prevails

> *"Whether drilling early or not this season, the most important aspect is ensuring a healthy, well-established and competitive crop."*

Understanding that consistency year-on-year is the cornerstone of effective grassweed control is helping one mixed farmer to manage resistant ryegrass populations, despite testing seasonal set-backs. *CPM* finds out how he remains focused on the end goal.

By Janine Adamson

Five years ago, mixed farmer Rob Barlow and his father Peter took on an additional 160ha of rented land to bolster their farming operation at the Crown's Bingham Estate in Nottinghamshire. As they were passed the baton of guardianship, it soon became apparent that traditional farming techniques had facilitated a ryegrass proliferation.

But armed with an integrated approach including both cultural and chemical controls, populations have dramatically decreased during the subsequent years despite the weather not always being on side. As focus turns to drilling the coming season's crops, Rob says they'll continue with this mindset regardless of recent set-backs.

"The weather really hasn't played ball at all this past year with some areas under water for a considerable length of time," he says. "Until then, our ryegrass control had been looking very promising despite some high pressure areas, but we find consistency is key as well as not over thinking things."

Management constraints

This is because the land lies on the edge of the River Trent which means soil types range from heavy loam to gravel, with some prone to flooding, meaning that not all management techniques are appropriate. As a result, Rob explains that it's more about making the most of what they can do, rather than what they can't.

"We don't direct drill due to the silt content in our soils so aim to be min-till with rotational use of the plough where necessary which seems to work well. We drill reasonably late from 25 September onwards, although can't risk delaying it as much as others might due to the catchy weather," he says.

"It's keeping things simple but timing is very much key – optimising spray windows and our application techniques."

ADAS weed scientist, Dr Sarah Cook, says such discipline is critical in managing ryegrass which is fast becoming a widespread problem. "In ways it's the new blackgrass but is a far worse weed – ryegrass generates more seed and is more competitive. The most effective way to manage it is through prevention in the first place – don't let it get onto farm.

"Like blackgrass, ryegrass travels in the usual ways – with straws and manures, via machinery and on the wheels of vehicles, and of course through home-saved seed," she advises.

"An additional means of transmission we're finding is with cover or companion crops which are increasing in popularity due to SFI. These are difficult to clean and are less regulated than cash crop seed," she stresses.

Then if in the case of Rob, ryegrass is indeed present or an inherited problem, avoiding further transmission is vital, adds Sarah. "You must prevent it from moving field to field and then between farms by exercising good hygiene measures. Control-wise, the same cultural methods for blackgrass apply to ryegrass such

When Rob Barlow (R) and his father Peter (L) took on 160ha of rented land it soon became apparent that traditional farming techniques had facilitated a ryegrass proliferation.

According to ADAS' Sarah Cook, ryegrass is the new blackgrass but a far worse weed – generating more seed, while being more competitive.

Because the farm's standard herbicide programme wasn't working on the new rented land, ryegrass samples were sent to ADAS for resistance testing.

as delayed drilling, for example."

However, because of the greater levels of spring germination in ryegrass, this means more attention is required when it comes to the management of spring crops. "Historically, there's been less focus on herbicide use in spring crops, particularly when stale seedbeds are successful. But where ryegrass is present, using a good pre-em will still be necessary," she suggests.

At Rob's farm, due to the soil type, much of the land isn't suitable for conventional spring crop options, although maize is grown as a break crop which is used as feedstock for a local anerobic digester. For a while this has included sowing a Westerwolds ley prior to the maize, however Rob says timings are becoming increasingly pressed to make this work.

On areas where ryegrass is particularly prolific, a five-year grass break is being used to avoid disturbing dormant weed seed, which complements the feeding requirements of the livestock.

With the farm successfully maximising its cultural options, Rob says it was time to re-evaluate the chemistry being used. "We'd conventionally opt for a flufenacet+ diflufenican plus pendimethalin mix at pre-em followed by a post-em pinoxaden in the spring. However, this didn't seem to be as effective on the new ground with high ryegrass pressure and we wanted to find out why," he explains.

Working alongside independent agronomist Graham Partington, the decision was made to send weed samples off to ADAS for resistance testing. Unsurprisingly, the results indicated RR resistance for flufenacet (62% control) / pinoxaden (64% control) / pendimethalin (80% control) and RRR resistance to mesosulfuron+ iodosulfuron (37% control).

This meant the farm's go-to programme simply couldn't overcome the resistant ryegrass population present. Reflecting on this, Sarah says ADAS has been receiving greater numbers of ryegrass samples for testing recently. "Resistance tends to be more aggressive in ryegrass than blackgrass due to the sheer quantity of seed – the weed can take on resistance much faster and there's a greater chance of genetic changes," she explains.

On-farm trial

With the results confirming initial suspicions and having seen the launch of a new mode of action in the form of Luxinum Plus (Luximo/cinmethylin), Rob was happy to accept the offer of an on-farm trial from BASF's agronomy manager, Colin Mountford-Smith.

The work, which focused on winter wheat with high ryegrass pressure, involved comparing an area treated with 0.7 l/ha Luxinum Plus and 2.0 l/ha Stomp Aqua (pendimethalin) at pre-emergence, with untreated. A further treatment of the farm standard (flufenacet+ diflufenican plus pendimethalin) was also assessed. Both treated areas were followed up with a spring post-em application of 0.8 l/ha pinoxaden.

Colin says when the weed plant counts were undertaken the following May, the untreated plot had more than 670 ryegrass heads/m^2 whereas the Luxinum-based treatment had just 89 heads/m^2. "This shows a high level of control and demonstrates why Luximo is such an effective building block of ryegrass management strategies. The farm standard actually had the highest count at 736 heads/m^2, but that's likely to be seed-bank related."

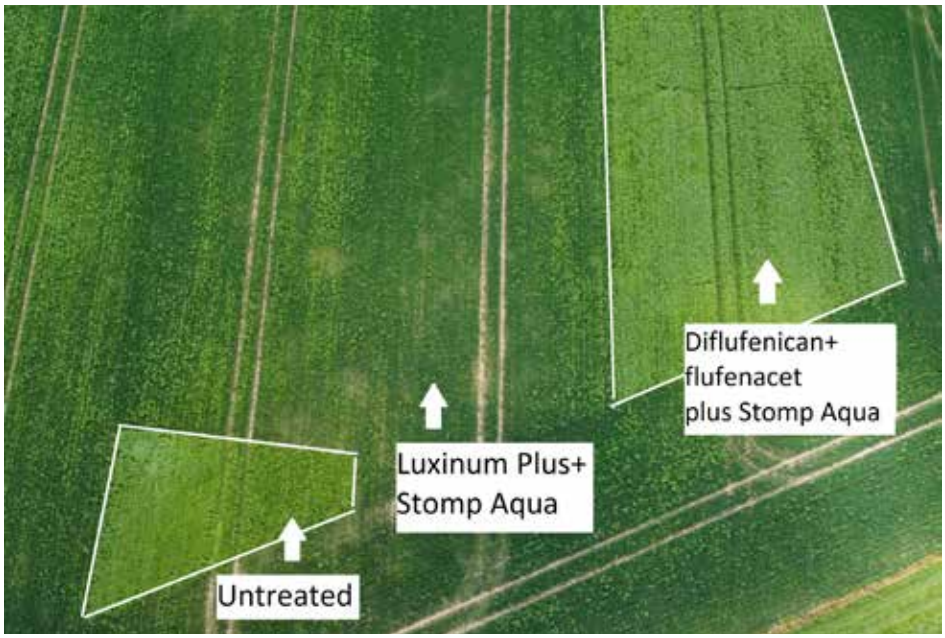
According to Colin, inheriting such a significant grassweed problem on rented land means seed return has to be strictly managed each year. "If we can achieve 95%+ control from each application of Luximo, this will begin to deplete that historical seed-bank," he stresses.

"In the case of where a five-year grass ley break is being used, using Luximo this year will be an effective way of mopping up any leftover weeds after that dormant period, for example."

Rob agrees that visually-speaking, it was clear how effective the product can be. "You could see how well it had worked in the autumn – it was difficult to find any remaining ryegrass plants.

"The only reason why we didn't achieve optimum control overall was the spring

BASF's Colin Mountford-Smith instigated an on-farm trial to understand the performance of Luximo in a resistant ryegrass situation.



When weed plant counts were undertaken in May, the untreated plot had more than 670 ryegrass heads/m² whereas the Luxinum-based treatment had just 89 heads/m².

flush everyone experienced last year. That aside, we'll definitely use Luximo this coming autumn as part of our clean-up tactics to try and get back on-top of things."

Colin commends Rob's persistency. "The past 12-months have disrupted many people's plans and rotations have had to be tweaked accordingly. What's become evident is that even with excellent efficacy from Luximo, it isn't an overnight fix for high pressure situations. It's part of a long-term strategy offering an improvement over time when used alongside relevant cultural techniques.

"Although the trial at Rob's couldn't be repeated last year due to the weather, we're hoping to undertake the work again so we can build the data set further," he adds.

On the back of a difficult year, Rob, like many, is facing financial pressure with a growing incentive to return to more profitable wheat crops as soon as possible. He says this is one of the reasons why this year's set back has been so keenly felt.

"I was looking forward to discovering what impact the combination of IPM, planned cultivations and Luximo would have had. It's not only put the trial out of sync but has had consequences for the farm's economics. It's very disappointing."

Even so, Rob feels he's using all of the viable options available for his farm and soil types. "The only potential option left is to bring Avadex (tri-allate) into the mix, however, that comes with cost implications," he adds.

Colin supports this concept: "BASF has trial data which shows a timely application of Avadex granules prior to a pre-em of Luximo plus pendimethalin, gives around 10% additional control.

"It's a programme that we support as a manufacturer in high pressure situations, along with an alternative approach of adding the liquid formulation, Avadex Factor in the tank with Luximo at pre-em."

According to Sarah, many growers may throw the weed control rule book out of the window this autumn following two testing years. "Whether individuals drill early or not this season, the most important aspect is ensuring a healthy, well-established and competitive crop. This could mean a higher seed rate in some instances.

"Then, aiming for a timely pre-em application of effective chemistry will be the best starting point," she stresses.

It's hoped the same on-farm trial of Luximum will be repeated again this coming season.

Colin agrees that for those who don't want to risk waiting, more attention to detail will be required including ensuring a pre-em is applied within 48-hours of drilling. "Even so, it's likely that those with a historical grassweed problem will know to avoid drilling early. Experience shows early drilling sets back grassweed control, equally, data suggests that delaying, even by just a few days, can make a tangible difference.

"We've seen some growers explore using Luximo at peri-em or early post-em and although this can be successful, there's usually a drop off in control. The most effective use of the chemistry is at pre-em followed by a timely post-em top-up of an active such as flufenacet, in high pressure scenarios," he advises.

According to Colin, this is due to Luximo being root acting, although the product also exhibits activity on seed too. "Rather than penetration through foliar tissue, Luximo disrupts the root meristem to prevent elongation and cell division. This is why pre-em application is so critical," he concludes. ■

Real Results

BASF's Real Results Circle is a UK-wide agricultural network now in its eighth year. The initiative is focused on bringing together growers, industry experts and BASF to create a more resilient farming system that's sustainable for farm business profit, for the people we feed and for the planet we live on.

Working alongside *CPM*, BASF explores related topics such as resilient disease control, environmental stewardship and return on investment. Discussions centre around Real Results Circle farmers and associated experts from the wider industry.

By coming together to openly discuss and therefore face challenges as one, we can find out what really works and help to shape the future of UK agriculture.

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