

# Blackgrass under pressure



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## Technical Partners in Performance

In recent years, Cambs grower Paul Drinkwater has been one of many in the area who have struggled to keep blackgrass in check in some fields. CPM visits and joins the Task Force engaged to help him put a plan in place.

By Tom Allen-Stevens

Looking across Paul Drinkwater’s field of Skyfall winter wheat, you can’t deny it’s on track to yield, but there are some worrying patches of blackgrass.

“I guess I’ve been managing the seed return but not stopping it,” he says. “The thing is, I go to all the open days and hear about all manner of good systems for sorting out your blackgrass. But it’s easy to end up with no system at all, because you worry that if you start mixing and matching these ideas it’s a recipe for disaster.”

The 30ha field at Abbots Ripton, near Huntingdon, Cambs, forms part of 3500ha managed by Paul for Abbots Ripton Farming Company and Lavenham Farms. The soil

type across this block is a consistent Hanslope series boulder clay — easily capable of yielding 12t/ha of wheat, but equally prone to harbouring a heavy blackgrass burden.

“I have photos going back over 40 years, and the blackgrass hasn’t moved. It’s just the severity of the weed patches that’s grown or reduced over that time,” says Paul.

“But chemistry’s always kept it in check. When I came into farming, that was when isoproturon (IPU) arrived — it was marvellous stuff, and herbicides just moved on from there. Atlantis (iodosulfuron+ mesosulfuron) was so effective you didn’t even have to think about blackgrass management.”

### Gradually crept up

Tests have shown his blackgrass now has high levels of target site resistance, however. “It’s gradually crept up on us, and we’ve had successes as well as bad failures. But if Bayer was to come out with a new herbicide, I know we’d make it almost ineffective in around five years. So we’ve gone back to proper farming — making good use of the rotation and drilling dates while relying less on chemistry.”

It’s a good start, but Paul himself recognises it’s a long way from an integrated strategy that will keep the grassweed

sustainably under control. So his is one of two farms that have become the focus of Bayer’s Blackgrass Task Force. Joining him is Ben Coombs, Bayer herbicide campaign manager, NIAB TAG’s John Cussans and Philip Wright of Wright Resolutions. The aim is to provide some recommendations, specific to the field situation, which will help manage its blackgrass burden.

“It’s pretty well understood now how to drastically reduce blackgrass, and there’s a whole stack of trials that can give you a ‘recipe’ for sorting out a problem,” says Ben. “But the challenge lies in translating that into a successful on-farm strategy — few commercial farms have a blackgrass team to run a trial.”

So a suitable approach is one that can apply trials-based advice on a field scale, ►



Tests have revealed the blackgrass has high target site resistance and there are patches in the field where the population is worryingly high.

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Paul Drinkwater (far left) is getting expert advice from Bayer's Blackgrass Task Force: Philip Wright (inside left), John Cussans (inside right), and Ben Coombs (far right).

► he says, in a way that can be practically managed and monitored over a number of seasons. "The key principles for the Task Force are that we'll come to recommendations, rather than obligations, with the farmer making the decisions. These focus fields are commercial — we're not trying to turn them into a trials site. But this is a team effort — everyone contributes to an approach, which we're hoping will suit all."

The Task Force has chosen Stephen Moss' 5for5 approach as the framework (see diagram top right). This initiative aims to encourage growers to adopt five different control strategies, only one of which is based on herbicides, and maintain a planned, integrated approach at the individual field level for at least five years.

The field in question is 30ha that came out of oilseed rape into wheat, drilled on 24 Oct at 400 seeds/m<sup>2</sup>, reports Paul. "It's not one of our worst for blackgrass, but we didn't get good control with the Kerb (propyzamide) in the OSR two years ago, and the resulting seed return was a bit of a wake-up call."

Last autumn's stale seedbed was followed with a pre-emergence stack of 0.6 l/ha of Liberator (flufenacet+ diflufenican), 4 l/ha of Defy (prosulfocarb), with 0.12 l/ha of Hurricane to bring up the DFF. "The Avadex (trilalate) was delayed, applied just as the crop emerged on 14 Nov. But we got a good result from 0.33 l/ha

Monolith (mesosulfuron+ propoxycarbazone) applied at the beginning of Feb."

So what are the recommendations from Bayer's Blackgrass Task Force?

## Stop seeding

Paul may be pleased with what the chemistry's achieved, but it's not good enough for John, who's been studying the plant and head count assessments (see panel right). "There's an average of five plants/m<sup>2</sup> which can be a problem. That's certainly the case in the patches with more than 10 plants/m<sup>2</sup>," he says.

"What's interesting about the counts is the varying number of heads per plant — a large number of plants doesn't always equate to a high population of blackgrass heads. But at an average across the field of 47 heads/m<sup>2</sup>, there will be a large seed burden to manage."

There are still options to prevent seed shedding this year — it's not too late to spray out patches or rogue, or even take the field as wholecrop for an anaerobic digester, for example. But Paul dismisses these suggestions.

"If I was to patch spray, I would have done so back in Feb before I'd spent too much on the crop. What's more, this is a decent crop — the yield may be knocked back by a tonne or two in the patches, but these areas are still set to bring in 8-10t/ha, which I won't get if I spray them out. As for roguing, there are few fields in Cambs with a burden at

## The 5for5 approach for beating blackgrass



Source: Stephen Moss Consulting and Tom Allen-Stevens, 2017.

roguable levels, and this certainly isn't one of them."

The Task Force agrees that commercially the best option at this stage is to let the seed fall and deal with it after harvest, although spraying off bad areas should be considered in following crops.

## Cultivations

Traditionally Paul has used a

Grégoire Besson Discordon to prepare the ground, plunging down to 200mm with a chisel tine that boiled the soil, allied to relatively deep working discs which increased the mixing through the profile — totally the wrong thing to do in a bad blackgrass situation, according to Philip. "That gets a one or two out of ten. The aim should be to stop the soil horizons mixing

## Abbots Ripton blackgrass plant and head counts



Source: Bayer, 2019. Each bar in the chart corresponds to an assessment point in the field. The darker the colour of the markers, the higher the number.

together,” he says.

Now the chisel tines have been replaced by Paul with Tillso Sabre tines, that lift the soil, but keep the lower horizons intact. “That’s more like a five out of ten, but the discs are still going deeper than they have to at 100-120mm.”

His preferred tool is the farm’s Knight Triple Press or Horsch Joker. “With a good operator, you can move just the top 50-75mm and achieve a good tilth — an eight out of ten. A top score would be achieved if a consistent shallow surface action could be limited to 50mm. Any areas that require deeper lifting can be pulled through afterwards, being careful not to turn the soil.”

But an inspection of the site reveals deep lifting probably won’t be necessary. “Essentially it’s in good nick — the weather over the past 12-18 months has been ideal for these Hanslope soils to self-structure, with the wetting and drying doing a far better job than any shape of metal. We should be careful to look after the structure we have.” This attention starts at harvest, he adds, while the weather will always play its part too.

Moving to minimum disturbance is something Paul’s gradually warming to. “We’re so used to shifting plenty of soil it’s ingrained. But doing as little as we can get away with and spraying off the chitted blackgrass just once before drilling is what we now favour. I like to get cultivations done early because you don’t know what the weather will bring.”

Here John sounds a note of caution. “Sometimes the best course of action after harvest is just to leave the surface untouched, especially if it’s dry. Much of the blackgrass seed just dies on the surface or is predated, although it’s difficult to tell as you can’t see it.”

He agrees with Philip that shallow cultivations keep the blackgrass in the surface where it can be controlled. “Only cultivate when there’s enough moisture to make a good seedbed, and if making more than one pass, a sound principle is to reduce intensity,” he advises.

## Sowing date

Paul’s decided to put the field into spring barley. “We used to think these soils wouldn’t grow the crop, but proved that’s not the case. It means we’ll be in no hurry to cultivate and can leave it until Sept or Oct if we get another dry summer.”

The farm has a choice of three 6m drills — a Väderstad Rapid, a Pöttinger Terrasem and a Horsch Sprinter. “The key aspect with

spring drilling is minimum disturbance — you don’t want to wake the blackgrass,” says Philip.

“So probably the Rapid with the toolbar lifted out would be best. If you want tines, the Sprinter, replacing the Duett coulters with minimum disturbance banding openers.” These are due to be replaced with Borgault VOS openers.

## Competition

There’s a plan to drill a 36m wide strip of cover crops, covering around 4ha of the field. This is to see if it has any effect on improving the competitiveness of the following spring barley crop. “I’ve read all sorts of claims for cover crops and never been convinced, but now I’ve a good reason to give them a try,” says Paul.

Phacelia, black oats and vetch are planned for the mix, drilled soon after harvest, unless it’s too dry. Philip has concerns for the cover, however. “Although the roots will do some good, covering these soils with a thick canopy over the winter won’t help them self-structure, so keep an eye on how the crop grows. If it’s vigorous, spray it off around Christmas or consider mob-grazing with sheep.”

John agrees. “A cover crop is a fantastic way to get a spring crop off to a good start with minimum disturbance, provided you get the technique and management right.”

## Herbicides

Shoot samples of blackgrass have been taken to test for herbicide resistance, which have confirmed a high level of both ACCase and ALS target site resistance and a low level of ALS metabolic resistance, notes Ben.

“The tests indicate a reasonable proportion



*The Hanslope series soils are in good shape and have self-structured, so the emphasis is to preserve this.*

of susceptible individuals in the population, however, which may explain why Paul is still getting an adequate level of control with Monolith. The important thing, though, is to prevent surviving plants going to seed as that’s how resistance builds.”

Paul plans to knock out any blackgrass that emerges over the autumn and winter with just one robust application of glyphosate before drilling. With fewer options when it comes to chemistry for a spring crop, compared with one established in the autumn, this will be followed with a 0.3 l/ha pre-em base of Liberator. Small plots with other herbicides stacked on top are going to be trialled within the field.

“There is an optimum level of herbicide with spring barley,” notes John. “Put on too much and it hits the crop, which can then do more harm than good in terms of competition. The trials will help us determine that balance.”

Paul’s more concerned about moisture levels. “The danger with a spring crop is when it goes dry after drilling. But we have a plan set up and it’s a question of following through with the components, keeping it flexible enough to adapt to whatever challenges the season may throw at us.” ■

## Partners in Performance

Partners in Performance is the result of a long-standing collaboration between Bayer and a group of progressive growers.

It started in 2011 with split-field comparisons of the Xpro range of fungicides, and over time has developed into a much wider set of field-scale trials. Each year the farmers meet to discuss results, listen to guest speakers and debate winter wheat management issues.

Bayer’s Blackgrass Task Force project is the latest initiative under the Partners in Performance umbrella, taking two fields with differing blackgrass challenges and working with a team of experts to manage the field over a longer-term period. The objective is to

see whether industry research can successfully be applied to a commercial field.

For arable farmers to continue to be profitable with support payments forecast to reduce, tackling challenges, such as blackgrass, requires the whole industry to work together to share and implement the latest research and thinking, exchange ideas and experiences.

Partners in Performance aims to bring farmers and specialists together to develop solutions to improve crop performance and investment return.

