Cereal crop agronomy

Shift in approach

For this month's topical cereal disease and agronomy feature, *CPM* reviews insights from AHDB's re-run Early Bird Survey coupled with added reflections from agronomists and farmers.

By Janine Adamson

One thing's for certain — this year is far from a case of 'rinse and repeat'. It could be argued that most people working in the crop production industry have had to reassess their approach to business.

For one, in recognition of an extremely challenging autumn, AHDB chose to re-run the Early Bird Survey (EBS) which aims to assess national cropping intentions. Whereas the November iteration of the EBS had already suggested less winter cropping for Harvest 2024, continued inclement weather through winter has exacerbated the declines considerably.

AHDB's head of farming systems & agronomy, Oliver Johnson, says although the EBS shows a clear intention to plant more spring crops, seed prices and limited availability means reality paints a different picture. "Additionally, the continued wet weather means fields haven't dried out in time to drill — it's been the second wettest August-February period since 1837."

Arable fallow hike

Interestingly, he says, the survey shows a sharp rise in arable fallow — up almost 80% on last year. "This could be down to growers switching to agri-environment schemes such as SFI. Although, Defra's latest update means new applicants can only put 25% of their land into six of the SFI actions which take land out of food production."

These actions are IPM2 flower-rich grass margins, AHL1 pollen and nectar flower mix, AHL2 winter bird food, AHL3 grassy field corners, IGL1 taking improved grassland field corners out of management, and IGL2 winter bird food on improved grassland.

Defra says the six actions were always intended to be implemented on smaller areas of the farm and is something the new measures will protect, with remaining SFI actions uncapped.

Furthermore, the EBS suggests that the UK wheat area is expected to fall 15% year-on-year to 1.463M hectares — the smallest area since 2020, with the East Midlands and Yorkshire and the Humber worst affected.

> *"Crops which looked poor a month ago appear much better after a dose of nitrogen and sulphur."*

"Having released further insight following the EBS in the Plant Health Survey, what's concerning is around 40% of the current winter wheat hectarage has been scored poor to very poor. We're seeing a lot of yellowing in crops due to nutrient deficiencies caused by excessive leaching and low microbial activity as a result of the unseasonably high rainfall and poor rooting. This will become a further challenge if the weather suddenly dries up," says Oliver.

Additionally, the total barley area is estimated to rise more than 8% to 1.236M hectares. Oliver says this is due to a reduction in winter barley plantings being offset by higher spring barley intentions. ▸

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After one of the wettest winters on record, early drilled cereals are already showing significant disease pressure and will need a carefully considered programme of fungicides to ensure they go on to achieve their true yield and quality potential.

Protection, not cure

The critical factor in providing adequate protection from cereal diseases is to ensure that a suitable fungicide programme starts as early as possible, preferably before infections take hold.

With several fungicides showing signs of reduced efficacy due to disease, it is important to limit the exposure of at-risk active ingredients. This can be achieved by using a range of fungicides throughout the season, and by using different active ingredients with alternative modes of action.

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- Extends green leaf area duration and boosts yields: every £1 spent on ARIZONA® will provide a £4 return on investment.
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T1 is the priority timing for the control of septoria in wheat: using ARIZONA® at this timing will provide a positive yield response and reliable return on investment. A second application at T2 will further enhance disease control and protect partner chemistries.

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In barley, ARIZONA® should be included at T2, especially where ramularia control is required. ARIZONA® can also be used at T1 when it protects against rhynchosporium, or at T0 if earlier protection is required. To achieve the best control of both diseases, ARIZONA should be included at T1 and T2.

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- Ramularia: T2 1.0 - 1.5L/ha
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Max. 3.0L product/crop

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Oliver Johnson says the Early Bird Survey shows a sharp rise in arable fallow – up almost 80% on last year.

▸ "Winter barley is estimated at 355,000ha, a 22% drop from 2023 and a much steeper reduction than the 7% year-on-year fall predicted in November's survey. In terms of quality, similar to wheat, we're looking at around 40% of crops being scored poor to very poor in the field. This decline is likely a combination of difficult drilling conditions in the autumn coupled with a reduction in the oilseed rape area for which the early harvest of winter barley helps to facilitate," he explains.

"This year's OSR harvest is set to be among the lowest since the crop was first introduced to the UK in the 1980s, with many growers struggling to weigh up the modest price against the headache of managing cabbage stem flea beetle.

"In contrast, spring barley planting intentions are up 29% year-on-year to an estimated 881,000ha," adds Oliver.

One crop which has garnered interest is oats. The EBS shows that overall, the total UK area is estimated to rise by 26% to 209,000ha. Again, a fall in winter oat plantings is more than offset by a rise in spring oat planting intentions.

Overall, because the EBS is a national average which takes into account crops which are relatively unaffected by the difficult conditions, Oliver says it's important to note that for those in the midlands especially, it's an incredibly challenging season.

Association for Independent Crop Consultants (AICC) member and Ceres Rural agronomist in the Shrewsbury region, Will Spurdens, spoke to *CPM* in the March issue (page 8). Now, around a month later, he says of the crops which he anticipated would be drilled during the past few weeks, only a small proportion have been planted.

"We predicted an unsettled March but I don't think we expected the conditions to be quite as they have been. As a result, we're adjusting rotations as we come to the end of the drilling window for spring crops such as beans."

He adds he's unsurprised by the EBS results of a sharp increase in arable fallow. ▸

French grassweed insight

According to Bayer, farmers across the channel are facing similar grassweed problems to the UK. Where Italian ryegrass causes difficulties in French cereal crops nationwide, blackgrass is a problem in more northerly regions, where climatic conditions and cropping are similar to the UK.

Cultural control strategies, herbicides and resistance follow a similar pattern to the problems faced in the UK, says Bayer's Amandine Berthoud. "ALS chemistry is affected by resistance but our monitoring shows that the level of resistance is in fact lower than the perception."

Randomised sampling of fields across the country have found that 30% had ALS resistance but the rest didn't. Nevertheless, Amandine says farmers have shifted focus for weed control from spring to autumn and use stacks of actives at pre-em and early post-em in a similar way to the UK.

Drilling later is another important tool for French weed control where the benchmark late drilling date is 30 October — 10-15 days later than the UK. In trials and on farm, the benefits are clear but according to Amandine, the threat of rain always weighs heavy.

"Autumn 2023 was very difficult in France because of rain. I expect many will react by drilling early next autumn, which isn't ideal for weed control but understandable. We know that however important weed control is, it's not the only thing that matters on farm. That's why we have a series of trials to show the benefits of better weed control for yield and the seedbank."

'Culture Champs' is a long-term trial series which explores integrated weed management. Research takes place on farms in different regions of France and shows the benefit of delayed drilling and other cultural approaches. Cultivation and harrowing are also used at various stages to provide mechanical weed control along with herbicides.

"In five years, we reduced ryegrass plant numbers from 450/m2 to 15/m2. The rotation was wheat, followed by sunflowers, wheat, maize and then wheat. The most important cultural controls were stale seedbeds, delaying wheat drilling until late October/early November, and cover crops," she says.

"The benefit of the delaying drilling was huge — in year one it reduced ryegrass numbers from 450 to 160/m^2. In year three, the next wheat crop, it cut numbers from 185 to 15. By year five, we'd managed to lower the background level of ryegrass and delayed drilling reduced plant counts from 35 to 15m^2."

But, Amandine offers a note of caution — without proper controls, weed numbers can rapidly build again. "Every plant controlled before it sheds seed makes a difference to the situation next season. Backing up successful cultural control with effective chemistry cuts seed return to low enough levels for sustainable control.

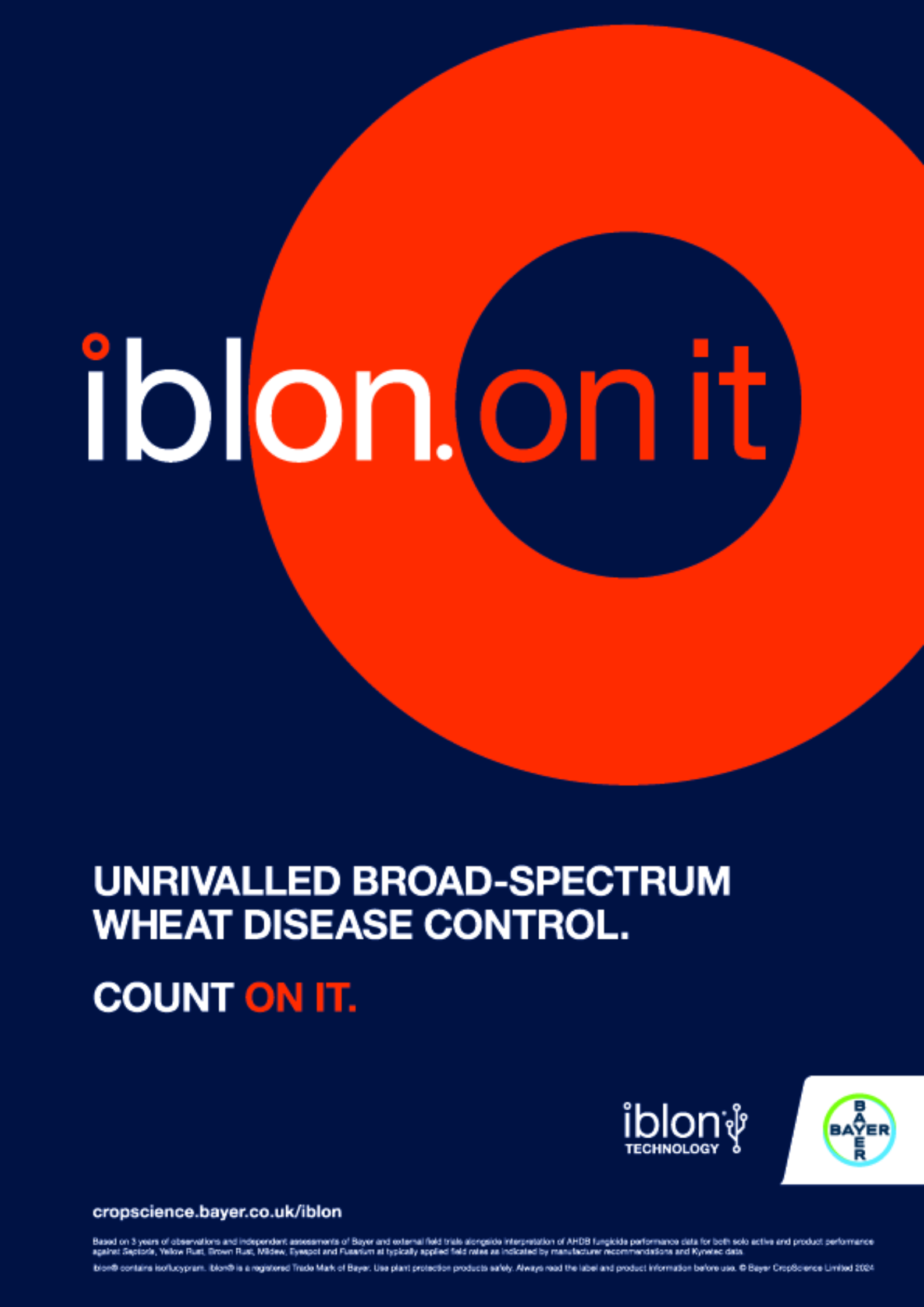
"Trials show a full programme with a pre-em followed by a post-em of mesosulfuron+ iodosulfuron+ thiencarbazone gives the best overall control. In general, we find that delaying drilling supports the efficacy of pre-emergence herbicides and we see very good levels of control," says Amandine.

'Culture Champs' is a long-term trial series which explores integrated weed management – the benefits of delayed drilling and other cultural approaches.

"Timing is important for the post-em because it's more effective against smaller weeds. Once again, delayed drilling helps because there's less time and cooler weather for weeds to develop before the post-em."

In the Culture Champs programme, the cost was evaluated as a percentage of the value of the final yield. It found that overall, following up with a post-em doesn't greatly increase net yield but does reduce head counts and subsequent seed numbers. In an integrated programme, the post-em is part of long-term planning to minimise weed pressure in future seasons, explains Amandine.

"Unfortunately, we haven't found any easy way to control weeds here in France that farmers in other countries can copy. But I think we're improving how we integrate controls together and planning effectively for the long-term."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David Hoyles is doing a four-way split of nitrogen through a 'little and often' approach, rather than his conventional three-way.

▸ "If you can afford to not crop at all and go for an SFI option, arable fallow or temporary grassland, it could prove a valuable reset.

"That's because some of the very late winter wheat plantings aren't doing much and will certainly be compromised in terms of yield potential. Weighing those up versus a reset, you may be better off long-term having not forced a crop in. Plus there's the non-yield benefits such as preserving soil health and structure," he says.

Will encourages a positive mindset: "Although infrequent, we are seeing some drilling windows. Also, crops which looked poor a month ago appear much better after a dose of nitrogen and sulphur, which bodes well for recovery."

He's also buoyed by the seemingly low septoria pressure. "It is there across my area, but definitely not at the levels which you'd expect given conditions. Equally, we're still yet to see yellow rust, although there's a touch of mildew in some varieties," he comments.

One of Will's farmers is Hamish Stewart, farms director at the Earl of Plymouth Estate which is split across Shropshire and Oxfordshire. Juggling the two sites has its challenges, not least due to the variability in soil types (from light-medium in Shropshire to heavy in Oxfordshire) and consistent poor weather.

"It's wet in both geographies — we didn't manage to drill winter barley as a result and I stand by that decision, it wouldn't have fared well. Winter wheats are variable with earlier crops looking solid, however we did lose some in Shropshire due to waterlogging and slug pressure," he says.

But overall, Hamish says the farm has a good portfolio of clean wheats, mainly thanks to considered variety selection. "We choose varieties based on their disease profiles, which has certainly proven helpful this year in terms of following input costs," he explains. "We'll manage our expectations, be realistic and adjust spend accordingly."

So far, he hasn't used a fungicide at T0, which would usually be tebuconazole, and although the saving won't be that huge, he's looking at return on investment rather than the straight cost. "I'm prioritising yield-building leaves and will boost up later at T1 or T2 if required," he says.

Rotation preservation

Hamish adds that he's taking things day by day in a bid to stick with plan A, mainly to avoid significant long-term impacts on his cropping rotation. "We've learnt from experience that it takes a while to square a rotation back up after overly juggling crops around. In that respect it's important to think beyond this year," he stresses.

At the time of writing (end of March), the crops left to drill include spring beans, borage, poppies, lupins, spring oats and spring barley. Hamish says that in Oxford, it's unlikely the spring beans will get drilled due to high blackgrass pressure. "But by having a diverse range of spring crop species it spreads the workload and most critically, the risk."

He adds that what has been clear this year is the importance of nitrogen. "You can see which crops haven't received any. We've pushed on and I believe that's been the right thing to do."

Long-Sutton-based David Hoyles says despite some of his crops looking backward, his plan is to still go for it. With drilling dates ranging from late September to late December, it's the lightest of his silty soils

Hamish Stewart says careful variety selection has paid off in terms of achieving a clean portfolio of winter wheat so far.

Of the crops which Will Spurdens anticipated would be drilled during the past few weeks, he says only a small proportion have been planted.

which look the worst due to slumping and water retention. "It's a mixed bag and will be interesting to see what we can achieve come harvest," he comments.

Whereas usually, David Hoyles would aim to prioritise backward looking crops, this year he's focusing on the areas with more potential and optimising nutrition. "The potential is there and we have adequate plant numbers.

"Variable rate nitrogen will help to avoid wastage, although I'm conscious to top up soil nitrogen reserves so it may result in the same spend overall. I'm anticipating savings on fungicide applications due to thin, open crops not requiring a T0, but equally, we're likely to spend more on micronutrition and foliar feeds to boost rooting," he says.

David Hoyles has also made the decision to do a four-way split of nitrogen through a 'little and often' approach, rather than his conventional three-way. "We went for an early nitrogen application of 30-40kgN/ha at the end of January because we were concerned about nitrogen deficit in the soil. This was then followed during a dry spell in February with 60kgN/ha, and then a third split in March.

"We've increased the amount of applications to avoid heavy travel on the soil but also because the crops are backwards and I feel a more regular approach is appropriate."

David Hoyles notes that when it comes to disease, he'll have to protect backward crops with few tillers due to there being a lot of septoria present and some yellow rust. But on the crops with most potential, he's avoided fungicide at T0 and instead ▸

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invested in Sycon — a phosphite-based biostimulant, applied alongside a micronutrition blend (magnesium, manganese, zinc, boron).

He's also prioritising growth regulation due to a reoccurring problem with lodging. "I'll go robust with the PGR because we don't use the straw — it's chopped and incorporated — so I'd rather divert energy elsewhere in the crop. I'll go for 1.0 l/ha of chlormequat then 0.1-0.15 l/ha of Moddus (trinexapac-ethyl)," explains David Hoyles.

Of course, all of his plans depend on whether conditions play ball. "But equally, we're lucky with how mild the winter has been. Soil temperatures were 8°C in February, so those backward crops have continued to grow which has helped us no end," he says.

Looking ahead, Hutchinsons' David Howard agrees with David Hoyles' approach of going for it. He acknowledges it may be tempting to cut costs where potential is compromised, but urges caution.

"Of all the main fungicides, T2 is the one you don't want to mess about with, because it's too important. The top two leaves contribute 60-65% of yield, so we have to treat according to disease pressure, not crop potential. If you don't, the yield — whether that's 10t/ha or 6t/ha — simply won't be there," stresses David Howard.

Maturity ratings

Because varieties respond differently to stress events, often following with rapid growth, he advises growers to consider AHDB Recommended List maturity ratings when planning treatments, as differences could be more pronounced this season.

"Flag leaf emergence could be relatively early in some situations, or delayed in others, so monitor leaf emergence carefully especially as backward wheats may race through growth stages to make up for lost time."

An all-rounder for septoria and rust control is isoflucypram, which Hutchinsons says performed well against both diseases in trials last season.

Spray timing should be based on the areas of a field with the greatest proportion of higher yield potential, says David Howard.

Although T2 is generally applied growth stage 37-39, where growth varies within the same field, David Howard recognises it will be impossible to treat everything at exactly the right time. As a result, he says spray timing should be based on the areas of field with the greatest proportion of higher yield potential.

"Where there's a large area to cover, generally it's better to treat slightly earlier (GS37) than wait too long for everything to catch up and let disease get a foothold on exposed flag leaves," he adds.

In many situations, Septoria will be the focus at T2, and David Howard says products based on fenpicoxamid, or fluxapyroxad+ mefentrifluconazole, generally offer the strongest protectant and curative activity, although higher rates should be used curatively.

While both options are effective against septoria, they may require additional support if rust pressure is high, he notes. "Benzovindiflupyr remains the strongest active against yellow and brown rust, so will be a worthwhile addition in susceptible varieties or high-risk crops."

Whereas a good all-rounder for septoria and rust control is the new active isoflucypram, which performed well against both diseases in Hutchinsons' trials last season, adds David Howard.

Finally, where varieties have gained rapid growth, he stresses brackling risk could be higher in soft, fleshy stems, so including a growth regulator such as ethephon at T2 could be beneficial. "We've found ethephon to be particularly good at managing late, structurally weak, rapid growth in both wheat and barley," concludes David Howard. ■