

“It’s better to reduce rates rather than cut an application timing altogether.”

Protecting precious yield

Mastering spring barley

High cereal prices, forecasts for tight global supplies and eye watering nitrogen prices mean optimising spring barley yields are more important than ever this year. *CPM* explores how a robust fungicide programme can be worth every penny.

By *Melanie Jenkins*

The open autumn of 2021 means there’s likely to be less spring barley in the ground than in previous years, with AHDB’s early bird survey estimating that plantings are down 8% on 2021 at 687,000ha.

Though disease management is a fundamental aspect of any spring barley crop, this year’s high prices and turmoil in the global markets means that protecting yield is more important than it’s been for quite a long time, says James Southgate of Prime Agriculture.

“With commodity prices where they are and where they’re looking likely to be going forward, all cereal grains are worth a lot of money — whether for feed or malting — so there’s a greater justification for a higher spend on fungicides,” he explains.

“Although applications should still be tailored to variety, drilling date and location, it could be remiss to take risks with fungicide applications when the return on investment is so good this year. There’s

a very small yield increase required to cover the cost of a robust fungicide programme compared with a weak one when prices are where they currently are.”

Return on investment

Even in more stable times there’s a good return on investment with fungicide applications, agrees Syngenta’s Joe Bagshaw. “With a currently conservative grain price of £250/t, crops only need a 0.2t/ha yield response over untreated to cover a £50/ha spend on fungicides. And other than in 2018, most crops have achieved well above this over the past five years.”

And as well as maximising yield, those growing for the malting market will want to ensure good grain quality, he adds.

So what diseases should be focused on? Net blotch can be an issue, particularly in earlier drilled spring barley and a fungicide spray at T0 may be required to tackle it, says James.

When it comes to mildew it’s not always the early drilled crops that are worst affected, he says. “Weather can have a big impact as it can induce stress in the crop, making it more susceptible to mildew.”

Wet weather can also result in outbreaks of rhynchosporium, with pressure usually higher in the West and North, more so than in the East, he continues.

Brown rust is another big consideration in spring barley and is more of an eastern disease, says James. “Though it can be an issue in western areas, it’s less prevalent in Scotland.”

Ramularia is probably the biggest potential yield robber of all and has caused the greatest losses in recent

years, so should be taken seriously, he points out. “There’s some regionality in infections — which tend to be worse in the North and Scotland — but that’s not to say it can’t rip through crops elsewhere.

“It’s been about three years since we experienced really high pressure from ramularia,” he says. “We’ve not had much over the past couple of seasons, but it’s been there in the background and if we get levels like we had three years ago again, there could be pretty significant yield losses and problems with screenings.”

One of the biggest issues with ramularia, other than that it can exist asymptotically in crops, is the lack of effective curative chemistry to tackle it, continues James. “We only have protective chemistry, so it must be thought about early.

“Ramularia is one of the trickiest diseases as we don’t really know when it ▶



Even in more stable times, fungicide applications offer good return on investment, says Joe Bagshaw.

Keep nitrogen out of the clouds by keeping it in the crop

DEFRA recently announced new standards to mitigate ammonia emissions. From 2024, farmers in England can only use unprotected urea from 15/01 to 31/03, and protected urea fertilisers throughout the rest of the year.



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Mastering spring barley



Though disease management is a fundamental for any spring barley crop, this year's high prices mean protecting yield is more important than ever.

► will be triggered or when early or late infections are likely to become symptomatic. And we have no chemistry sets at all that will work in a curative situation.”

Looking at the previous history of ramularia on farm can indicate the likelihood of it being present again, says Joe. “It’s something to be careful of. You can DNA sample your crop but this is relatively expensive. So the best way to keep it out is to keep your crop stress-free and healthy, making sure it’s not deficient in any micronutrients.

“Those targeting malting specification will want to make sure nitrogen doesn’t become limited as any stress can increase ramularia levels,” he warns.

But it’s not just against ramularia that fungicides work better protectively. “All fungicides work better in a preventative rather than curative situation,” explains James. “That’s not to say you should always spray before you see any disease in a crop, and very few spring barley crops will receive a T0 application.”

Joe advises being aware of the disease risks based on rotation and integrating cultural control methods as well as thinking about varietal susceptibility. “Generally, most spring barley varieties are rated as good against mildew and, because it has such a short growing season, it’s not generally an issue. But controlling it should be considered if the crop has been drilled early and the disease is present.

“Products such as Talius (proquinazid) can be used against mildew, or if crops get net blotch early doors you can use

Kayak (cyprodinil),” adds Joe.

Earlier drilled crops that have suffered unfavourable weather conditions are more likely to need targeted chemistry as these could be more susceptible to net blotch or carry higher levels of mildew infection, explains James. “If you see these in the crop and it’s still a long way before the T1 timing, then a T0 fungicide is justified.”

Historically, when spring barley has been drilled in late March and April, a lot of crops only get one fungicide application, he says. “But I don’t see that being very likely this year, given the typically earlier drilling dates and the high value of the crop.”

Fungicide strategy

Spring barley’s short growing season and the way it can romp through its growth stages can make fungicide timings tricky, but Joe believes it’s worth taking a programmed approach. “It’s better to reduce rates rather than cut an application timing altogether — especially if you’re aiming for a quality end-market. Then it’s vital to do two fungicide applications.”

At T1, growers should be looking to apply a preventative spray to make sure they don’t let disease into their crop, advises James. “If you don’t apply at T1 any infections will bubble along and once the canopy gets bigger removing disease is much trickier. This could mean you have to apply higher dose rates, spend more and you could still see reduced yields.”

Typically, in low pressure situations an application of prothioconazole may be all that’s required at T1, he explains. “But there’s potential to add in a strobilurin or an SDHI in higher disease pressured situations depending on the combination of diseases present.

“With prothioconazole as a base, you’re covering the main diseases — protecting from brown rust, mildew, net blotch and rhynchosporium. It’ll also have some, if pretty limited, effect on ramularia.”

Ramularia is triggered to become symptomatic by stress in the plant, which can be caused by cold and dry conditions, says James. “In these situations, there could be a benefit from adding folpet at T1 as it’s been shown to give good levels of protection against ramularia.”

Depending on when crops were drilled, the gap between T1 and T2 applications could be quite long. In situations where the time between fungicide applications is protracted and folpet is only planned at T2, then it could be too late to provide



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adequate protection, warns James.

He suggests that in these instances it’s worth looking at applying folpet at a halfway timing, between T1 and T2 — GS37-39 — to boost protection against ramularia. “This will allow you to take T2 slightly later, from the start to the end of ear emergence, which gives the ears protection and will also help to cover fusarium if conditions turn wet.”

In winter barley T1 is the more important fungicide spray, but in spring barley T2 has now become more important because it offers the best chance to control ramularia, says Joe. “It might be a case of using a reduced spray at T1 and using your better product at T2.

“And for those going for a one hit approach, ensure you do have a good SDHI, triazole and multi-site in there —



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such as folpet — to hit ramularia. Ramularia needs a different approach to other diseases and a multi-site has proven to be a worthy addition,” he advises.

“At T2 it’s then a case of using a prothioconazole base with an SDHI to cover the main foliar diseases, while getting good persistency and keeping the crops green for as long as you can,” says James.

A stacked programmed approach is best, believes Joe. “I’d advocate folpet at T2 in any programme to add insurance and Proline (prothioconazole) will still do something against ramularia.

“Generally, Elatus Era (benzovindiflupyr+ prothioconazole) at T2, applied with folpet, will cover the awns and protect the top leaves, stem and ear. Dose rates are flexible depending on disease pressure. Although Elatus Era can be a good fit at T1, it’s usually better aimed at the T2 timing,” he adds.

Later sown crops are also likely to need a good PGR programme as they try to



Rhynchosporium is favoured by damp conditions and can be a yield robber in some seasons.

compensate and catch up their growth, increasing biomass quickly with extending day length, explains James. “Some crops that are slightly more backwards may also need careful management as they can ‘bounce back’ with tall, weak stems and lodged crops cost yield.

Preventing lodging

“Using chlormequat or trinexapac-ethyl at GS31 — T1 timing — combined with a fungicide will leave an option for Terpal (mepiquat chloride+ 2-chloroethylphosphonic acid) at GS37-GS39, which could be applied together with folpet,” he adds.

“Look at varietal lodging ratings and adapt your programme to your local situation and the weather, as that’ll play a big part in lodging risk.”

A decent PGR can also help at harvest, says Joe. “It’ll help strengthen the cell walls in the stem and prevent brackling. The ears hold up and off the ground so they can go through the combine header and don’t just snap off.”

Later and prolonged crop greening can also help to reduce brackling, which can be a particular issue if the crop has disease, says James. “Foliar disease leads to premature senescence, resulting in a weaker plant with more brackling.”

That’s where Elatus Era gives added value, he says. Trials have shown that Elatus Era can increase green leaf retention and help reduce brackling by improving plant health and upper stem strength when applied at T2, explains Joe.

Optimising nutrition can also play a significant role in crop health and its ability



Ramularia needs a different approach to other diseases and a multi-site has proven to be a worthy addition to fungicide programmes.

to deal with disease, says James. “With such a short growing period, spring barley has a requirement for nutrients very quickly. If the weather is nice and warm, plants will have good access to soil nutrients but in drier conditions, it’s advisable to think about an early manganese application on some soil types.”

Along with this, it doesn’t matter if spring barley is going for feed or malting, getting nitrogen on relatively early can mitigate issues from dry periods, he adds.

“On lighter land especially, access to required nutrients at early stages is important and having the healthiest plant possible will help use the plant’s inherent genetics to reduce disease,” explains James. “In turn this will mean lower pressure and potentially less requirements for chemistry.” ■

Mastering spring barley

Spring barley is the UK’s most popular spring combinable crop, with the intended area in 2022 far exceeding the area of winter barley already in the ground. It’s hardly surprising because, get it right and spring barley can deliver a pretty decent gross margin. While there are masters of spring barley, who have learnt their art from years of experience, there are also apprentices — more recently acquainted with the crop and its intricacies.

To help navigate the potential pitfalls of spring barley growing, CPM has teamed with Syngenta to draw on its experience from varieties through to crop protection. Looking at the whole picture, this series of three articles will investigate growing for the market; early agronomy to set the crop up to make the best of its short growing season; and how best to

keep diseases at bay.

With yield and quality well worth protecting this season, Syngenta fungicides allow multiple damaging barley diseases to be targeted. Combining the reassurance of prothioconazole with the long-lasting protection of the SDHI, benzovindiflupyr, Elatus Era has label approval against net blotch, brown rust and rhynchosporium. In ramularia trials, adding folpet to Elatus Era at T2 boosted yield by 0.28t/ha. Adding folpet at T1 and T2 gave an extra 0.45t/ha.

