Battling barley disease

> *"We have a real jewel in our crown with F500."*

Barley disease control survey

The loss of chlorothalonil has arguably opened the door for a shift in tactics in the way that growers approach barley disease control. But what are the best options in a new era of crop protection products? *CPM* finds out more.

By Charlotte Cunningham

When managed correctly, barley can be a high-yielding, profitable foundation of arable rotations.

And it's not just quantity that presents an opportunity to cash in on returns — quality grain and straw can be equally as valuable to growers, with a recent survey carried out by *CPM*/BASF highlighting that rotational value, straw production and financial return are indeed seen as key reasons for growing the crop.

"Barley is sometimes given a little bit less focus when compared with wheat, but it can be a really valuable part of the rotation," says BASF's Louis Wells. "From a rotational perspective, it can be useful for managing problem weeds like blackgrass, but it's also a very versatile crop which can fit lots of different requirements and markets. There's also the potential to get a really good financial return when managed well and given the focus it deserves."

For Cornish grower Mike Hambly, the crop is an essential part of his rotation. "We grow winter barley for three main reasons. Firstly, we're growing it as a feedstock for our beef herd, and secondly because it provides a good, early entry for oilseed rape. As well as this, having an earlier crop helps spread the risk at harvest as we're prone to a lot of rain here in the South West. The third reason is that the straw value provides a welcome addition to our margins, so protecting straw quality is very important to us."

However, among other factors, the presence of disease has the potential to significantly impact on the bountiful potential of barley, warns Louis.

A well-thought-out fungicide programme is at the core of good disease control, but since the loss of key products — like chlorothalonil — the approach for many growers will have no doubt changed, he adds.

So what's the best way to keep on top of barley diseases on farm?

Most challenging

The survey asked growers to rank how challenging a number of key barley diseases are for them on a scale of 1-5 — with five representing a very challenging disease and a score of one meaning this particular disease isn't a challenge at all. From this, the top three most challenging diseases were revealed as rhynchosporium, net blotch and ramularia.

Unsurprisingly, on a farm which receives over 1500mm of rainfall a year, Mike adds that rhynchosporium and ramularia are also his biggest challenges. "We haven't really had any issues with net blotch so far, but we're very aware of how nasty a bout of this disease can be."

When considering disease, first and foremost it's important to factor in variety, believes David Leahy, business development manager at BASF. "With regards to rhynchosporium and net blotch there are varietal ratings on this, but they are predominately both 'wet-weather' diseases and often require careful management, especially at the T1 timing.

"Most growers across the UK and Ireland will be well aware of how devastating rhynchosporium can be, but net blotch is perhaps something that's gone under the radar recently.

"Predominately this is likely to be due to the effectiveness of chemistry and the level of control we were achieving, but the disease profile has shifted over the past few years and it's becoming a lot more difficult to keep under control, particularly with the increased prominence of strains like F129L."

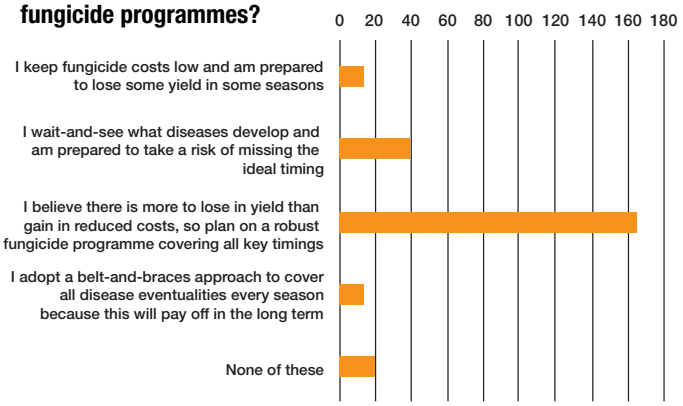
Shifting focus to ramularia, David adds that every single variety of barley will succumb to ramularia if the conditions allow as resistance doesn't feature here. "At present, there is no varietal resistance when it comes to ramularia. It's a stress induced disease that is then predisposed if conditions allow (wet and bright weather) late in the season.

"Stress management over the course of the season is key to managing Ramularia. We cannot control the weather, but we can ▸

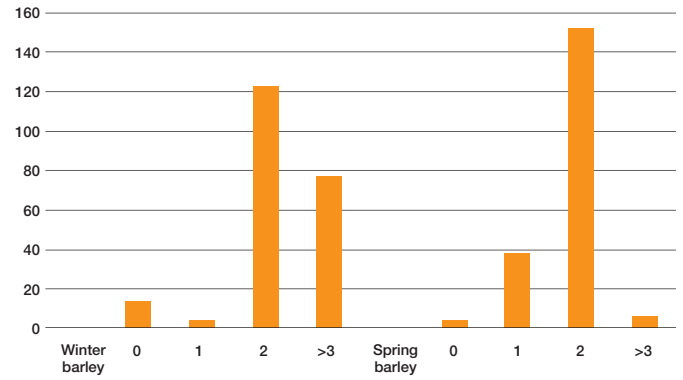
Barley is sometimes seen as a 'second-best' crop compared with wheat, but it can be a really valuable part of the rotation, says Louis Wells.

Barley disease control survey

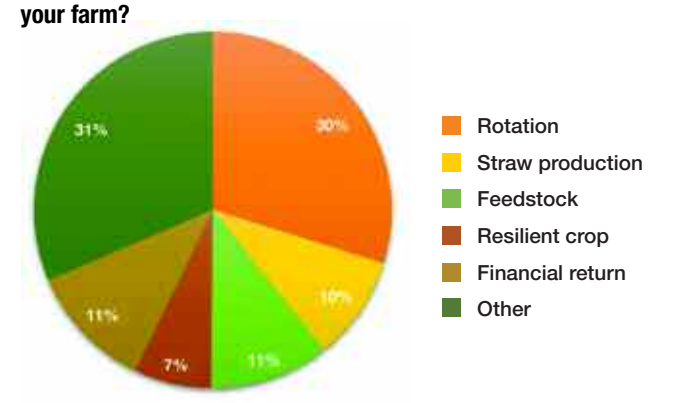
What would best describe your attitude to risk regarding barley fungicide programmes?



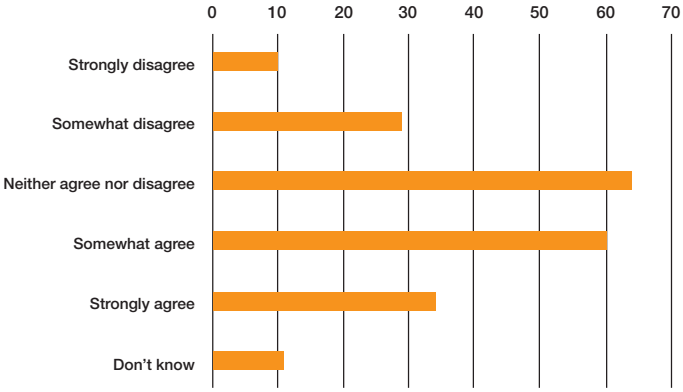
How many fungicide applications do you typically make in barley?



What are your most important reasons for growing barley on your farm?



The barley crop would benefit from having non-prothioconazole based solution available?



▸ control how we manage stress. Stress factors include primary diseases like rhynchosporium and net blotch, nutritional deficiencies, applications of certain PGRs in cold weather, excessively hot tank mixes etc.

"Chlorothalonil handled it very well, but in an era without it, growers ought to be thinking about managing ramularia from a stress perspective across the whole season, complemented with alternative products.

"Ramularia tends to be a late season disease, but it should be in the back of growers heads from the word go. Stress management is key."

Looking at the conditions thus far this season, crops largely went into the ground in good conditions and, so the focus over the coming months should be on protecting that potential, believes Louis.

David concurs: "We do have exceptionally well-established winter barley crops at present which are very dense, and there are a number of crops out there harbouring quite a high level of disease, purely and simply down to how forward they are and how mild and favourable conditions have been over the past couple of months.

"Perhaps more so this autumn, compared with previous ones, the fact we're looking at such full, strong barley crops at this time of year is certainly a precursor for potential disease entry if it's not managed correctly to protect those early tillers — heightening the importance of a robust T1 in 2022."

When it comes to control and risk management, 66% of growers said they believe there's more to lose in yield than gain in reduced costs, so they plan on a robust fungicide programme covering all key timings.

In contrast, just 14% said they adopt a belt-and-braces approach to cover all seasons and a further 6% revealed that they're prepared to lose yield in some seasons in a bid to keep fungicide costs low.

"It's really reassuring to see so many growers understand the importance of the investment in a good strategy to protect and build yield," says Louis. "When we look to our neighbours in Ireland, for example, this investment and attention to detail is widely attributed as the secret to achieving consistently high yielding, high-quality barley crops.

"Of course, to protect that chemistry, growers should be optimising products at the right timing and using different modes of action."

Mike adds that, due to his high levels of rainfall, he's very risk averse and plans a fairly robust three-spray programme. "I've always seen T1 as the most important timing for our barley as we want to ensure we're giving it a good foundation."

Exploring further the importance of timings, the majority of both winter and spring barley growers make two applications (56% and 76%, respectively), while 35% said they make more than three applications in winter barley.

"T1 is all about tiller retention and yield building," says David. "This is such an important timing when it comes to managing a barley crop. There was a time where barley may have only received one fungicide application but certainly now, T1 and T2 both carry the same weight.

"At T2, it's all about ramularia management and late season disease control — essentially, bringing the crop home."

Product-wise, barley fungicides haven't escaped the pressure of reduced efficacy and increasingly tight regulation, and as a result many are now switching up their approach and looking at alternative and new chemistry, he believes.

"At that T2 timing, we're now seeing a greater uptake of products like Revystar XE (mefentrifluconazole+ fluxapyroxad) which is a very good solution from a ramularia perspective. But across both timings, stress management is essential," notes David. ▸

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Barley disease control survey

Xemium offers 'market-leading' rhynchosporium control, says David Leahy.

▸ The incorporation of Revysol in the programme is something Mike has been experimenting with. "Product-wise, I've traditionally used Siltra (bixafen+ prothioconazole) at T1 and T2 and before the revocation of chlorothalonil, I was using that for ramularia too.

"A few years ago, I visited an Irish trial site whose challenges closely mimicked what we were experiencing in Cornwall. They were seeing good results with Revystar so we trialled this last year as part of BASF's Real Results Circle and the BASF programme (using Revystar at T2) out-yielded my fungicide programme, adding just over 0.5t/ha yield-wise.

"Disease pressure last year was low, even for us, but we put on Revystar XE at T2 and it really did seem to help boost the crop."

When it comes to choosing a barley fungicide, the majority of growers stated that disease control efficacy is their most important technical expectation — but it isn't the only expectation…

A further 19% said straw brackling reduction is very important for them, while resistance management and greening effect are top of the priority list for 15% and 11% of growers, respectively.

As well as these expectations, there are a number of external factors which influence fungicide choice, with cost/return on investment, advisor recommendation and own experience on-farm topping the list of most influential.

"When it comes to choosing and using a product, it's not just about efficacy and it's good to see resistance management is a key priority for growers too," says Louis. "It's important to look after products to maintain efficacy for decades to come.

"We also know straw quality is important for a lot of barley growers, and this has been shown in the response too, so I think it's important that any new products take all of these factors into consideration."

This spring, BASF is adding to the offerings available to barley growers with the launch of its new product, Tevos (fluxapyroxad+ pyraclostrobin).

From a resistance management perspective, David believes that growers are more conscious than ever of using prothioconazole-based products multiple times across the programme.

As well as the forementioned priorities, the survey also revealed that 45% of growers somewhat or strongly agreed that the barley crop would benefit from having a non-prothioconazole-based solution available — and Tevos aims to provide just that.

Tevos is a barley offering, for use across both winter and spring crops as well as other cereals, including oats, rye and triticale. "BASF has historically worked hard to produce some really great modes of action, and Tevos harnesses two of these with Xemium (fluxapyroxad) for rhynchosporium and rust control, plus F500 (pyraclostrobin) to keep net blotch and brown rust at bay," explains Louis.

"Both actives offer really robust control of these diseases and also supports other factors and benefits like straw brackling reduction — it goes beyond just disease control."

David picks up the conversation and states that Xemium, in particular, offers 'market-leading' rhynchosporium control "It's the highest performing active ingredient on the disease, as demonstrated in the AHDB dose-response curves.

"But equally, we have a real jewel in our crown with F500 which offers excellent net blotch control. F129L is now the dominant net blotch strain in the UK and we know pyraclostrobin is the strongest performing active on this disease by a long way.

"It (pyraclostrobin) also has very strong physiological benefits on a crop and certainly from a stress management perspective, having an active which contributes in that fashion too is very exciting."

In terms of its positioning within a programme, Louis says BASF sees Tevos as its T1 product. "We'd then encourage growers to bring in products like Revystar XE at T2, with growers like Mike seeing the clear benefits."

While David anticipates there's likely to be some mixing of products like Tevos and prothioconazole-based types, he stresses that the actives in Tevos are capable of doing a lot of 'heavy lifting' — giving growers more flexibility with their product choice. "That's not to say prothioconazole isn't still performing well on barley — it is. But in order for that to continue, it has to be used in a sustainable way, which includes the use of other products.

"We're really excited about this product. In simple terms, it offers market-leading disease control and also gives growers, agronomists and advisors a level of flexibility which I'd argue they wouldn't have had in the past."

David touches back on Louis' earlier point and concludes that, historically, barley has been viewed as a poor relation of wheat and it may not have received the attention it deserved. "But certainly, what we've learnt in Ireland over the past decade is that if barley is invested in, with a high attention to detail, then it can be a very rewarding crop.

"That's not down to just disease management, that's an accumulation of everything including nutrition, drilling timings, seed rate, varieties etc. But from a disease perspective, it's good to see there's certainly a value being realised of the rewards investing in a crop can bring." ■

Winner announcement

Congratulations to our winner Alexander Borthwick from Lincolnshire who responded to the CPM/BASF survey on barley disease control and has won the fabulous prize of a 256GB 11" iPad Pro — worth £849.

Alexander responded to the survey and completed the tie-breaker question, which asked respondents to talk about a mistake which they've learnt from (in terms of their barley disease control strategy) and detail what they would have done differently, given the opportunity.

His answer was: "In 2017 we made the mistake of not worrying about ramularia and got a horrible shock when the crop went from being green to senesced in the space of two weeks, grain being shrivelled and yield seriously compromised. Since then, we have held ramularia as serious a disease as net blotch and rhynchosporium and have treated the crop with ramularia in mind, latterly with CTL while it was available and currently with Revystar. Although ramularia isn't a problem every year, the extent it went through the crop was eye-opening."

The answer demonstrated a clear understanding of the challenges unexpected onsets of barley diseases can bring and how he's now adapted his approach with this in mind, which impressed the judges.

To take part in the next survey, make sure we have the correct details for you by emailing *angus@cpm-magazine.co.uk*