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Crop Doctor

Full of promise

After two springs which followed extremely wet winters, crops in 2022 are looking promising coming out of a much kinder winter. CPM joins the Bayer Crop Doctor team to get a feel for likely disease pressures before fungicide programmes get underway.

By Lucy de la Pasture

In a world that’s currently topsy turvy, the sight of wheat plants basking in early spring sunshine and rippling in the breeze, readying themselves for an imminent switch into stem extension, is somewhat reassuring. Even so, the exact beat of the rhythm of the 2022 season isn’t yet set and that will dictate disease pressure — crops look full of promise but it’s in the hands of Mother Nature.

Nearing the end of March, the Crop Doctors took their annual tour, taking in Bayer trial sites in Herefordshire and Lincolnshire and farms in Oxfordshire and Yorkshire. The aim is to get a measure of how different varieties are faring in the different regions and to establish the baseline for disease just before fungicides programmes kick off.

Great Tew Estate, Oxfordshire

First stop was Great Tew Estate, where Colin Woodward welcomes ADAS’ Jonathan Blake and Bayer’s Ben Giles for a whistle stop tour. Standing in a field of SY Insitor, a Group 4 winter wheat, Colin says that yellow rust has begun to appear in the past few days but it’s still pretty hard to find. But it’s a different matter for septoria which is commonplace on the lower leaves — including on the third last to emerge, he says.

Jonathan notes that the yellow rust he’s found looks very brown. “It’s hanging in there and with a warm week forecast it’ll be perfect conditions for yellow rust — so it may explode,” he says ominously.

Colin reckons the recent overnight frosts have helped hold infection back, but a rust treatment is looking increasingly justified at the T0 timing, he says.

So how close to T0 is the crop? On closer inspection the consensus seems to be that stem extension is likely to be underway in about a week’s time (last week of March/beginning April) but it proves impossible to determine the exact growth stage by trying to dissect the stem.

“The ear is firmly rooted to the base of the stem, so it’s not at GS30 yet,” adds Ben.

Compared with the October-drilled Skyscraper and KWS Extase Colin showed the group earlier, Jonathan notes the Insitor appears behind. “The Skyscraper is very upright and leafy, with the septoria clearly on the second last leaf to emerge,” he says.

The two fields of Extase are first and

second wheats, drilled in mid-October. “There’s less septoria in the Extase but more than in previous years,” adds Jonathan.

Ben points out that its septoria resistance rating has fallen to 7.2 in the AHDB Recommended List’s one-year figures.

That’s perhaps not unexpected, comments Jonathan. “Extase is now widely grown which means we’re selecting for the septoria isolates which are most virulent on that variety.”

Last season, Extase proved responsive to fungicide programmes in spite of its high septoria resistance, says Ben. “We had appalling levels of sunlight during grain fill, so fungicides helped keep the crop greener for longer which equates to higher yields.”

Colin plans to look after his crops this year, a decision made easier by the keen market for wheat. “Any spend on fungicide should be easily recouped,” he adds.

One crop where plenty of fungicide ▶



Colin Woodward and Jonathan Blake take a closer look at SY Insitor at the Great Tew Estate.



Hybrid winter barley SY Kingsbarn is exhibiting a mixed infection of net blotch, rhynchosporium and brown rust.

► may well be needed is his SY Kingbarn hybrid winter barley. Jonathan says it has to be one of the most disease susceptible varieties grown and calling in Colin's field, he quickly finds leaves with a combined infection of net blotch, rhynchosporium and brown rust.

Colin winks at Ben, saying, "At least we have Ascra (bixafen+ fluopyram+ prothioconazole) now," alluding to its recent approval for barley crops. Jonathan pips in to add that Ascra seems to bring more on net blotch, whereas Siltra (bixafen+ prothioconazole) is still good on ryncho and rusts.

September-drilled and ahead of the wheat, the winter barley's ready for a T0 of tebuconazole plus a PGR, says Colin. He'll be keeping a close eye on the disease levels in the winter wheat but plans to use tebuconazole, with the addition of azoxystrobin where yellow rust is active, and for the remainder it'll be standard PGR and trace elements. "I may try some Iodus (laminarin) on some fields this spring," he adds.

As far as fertiliser plans go, Colin is planning to apply 180kgN/ha to most of his wheat, which is a drop of 30kgN/ha compared with the rate he'd normally apply. Part of the reason for knocking back is so he can carry some fertiliser stocks to next season, he says.

Callow, Herefordshire

Plots at the Callow trial site were drilled 16 October and the stand isn't as thick as at Great Tew, observes Jonathan Blake. "Plants are too small for dissection and are tillering profusely. If anything it's a little bit behind," he says.

A more thorough look at the plots reveals disease levels at the Herefordshire site are low, with no yellow rust to be found. "The outstanding impression I have after looking at the plots is that septoria is unusually low for this site, which is the furthest west the Crop Doctor team visits."

It's the usual suspects that top the list for disease on the lower leaves, with the more susceptible KWS Barrel, Elicit and Skyscraper all having septoria visible on the most recent leaves to emerge. Extase and Graham have septoria lesions at the base of the canopy. Theodore stands out as being particularly healthy, says Jonathan. "Though septoria is present enough to be a threat," he comments.

Local independent agronomist and AICC member David Lines adds that it's early days yet for Callow. "September drilled crops in the area have more septoria than we're seeing here, and that's in varieties with relatively high septoria resistance, such as Extase, Graham and Siskin," he says.

Bayer's Gareth Bubb adds that at least there's a fighting chance of keeping the septoria down on the lower leaves. "Where susceptible varieties are sown early in the West then it's putting too much pressure on the chemistry to try and reliably control septoria," he says.

The conversation moves on to discuss T0 and Gareth says some crops of Extase in the region have just received a T0 and PGR because it's more forward than the majority of varieties. David says that he's going through his Extase with a PGR but isn't applying an early fungicide, though he says he would have put some CTL on if it was still available. He is however looking to apply some Iodus at T0 on some early direct-drilled crops.

Yellow rust is widely considered to be the justification for a T0 fungicide these days and Gareth highlights that the AHDB rating can't be used as a guide when plants are still in the juvenile stage. "You can't predict exactly when adult plant resistance will kick in so if yellow rust is present then tebuconazole is required at T0. When we lose teb, like with CTL, it'll become a much more difficult decision whether to put a fungicide in the tank at T0 as a preventative," he says.

Mildew is very common out in the field, says David. "The frosts we're having will take care of it and I'm not planning on applying a mildewicide. With early drilled Wolverine and Extase then eyespot is something to look out for, though ever since we've had prothioconazole, it

hasn't really been something to worry much about."

Long Sutton, Lincolnshire

Two days later the Crop Doctor team headed to Long Sutton in Lincolnshire to view the Bayer trial site at David Hoyles' farm. Jonathan's immediate reaction was that the plots looked 10 days more forward than the Callow and he didn't have to walk far to find higher levels of septoria than at its sister site in the West.

It's not unusual for David's crops to look leafy and well, in part because he has a policy to get nitrogen on early. "We can travel on the silts here relatively early without risk of leaching. We applied 25kgN/ha with some sulphur in the first week of February, followed by 70kgN/ha with a further dose of sulphur in the first week of March."

David plans his final split of N for early April, which will make a total of 180kgN/ha. "This field follows potatoes and the soil mineral nitrogen wasn't as high as I thought it may be. But we're not cutting back on N this year."

In contrast, the heavier silty clay soils in Herefordshire have only just dried out enough to travel on, says Jonathan, with the Callow trials site receiving its first N application the week of the Crop Doctor visit.

"It may be why the Callow looks backwards compared with the field we're in now and also why we're seeing more septoria here at the moment," he adds.

Comparing different varieties, it comes apparent that the growth habit also plays a significant part in the amount of septoria present at this time in the crop's growth. ►



Varieties at the Callow trial site are looking 7-10 days behind the other sites visited, though it's probably due to ground conditions only just allowing N to be applied.

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The Crop Doctor team at David Hoyles' farm at Long Sutton in Lincolnshire – (from left to right) James Wilkins, David Hoyles, Henry Richardson and Fiona Burnett.

► SRUC's Prof Fiona Burnett inspects a plot of Extase, rated 7.3 for septoria resistance on the RL — based on the one-year data — a drop from 7.8 on the three-year figure. "It's really vigorous but there are loads of pycnidia."

Stepping into the much 'dirtier' variety Barrel, it looks a lot cleaner than expected, she notes. So what's going on? Fiona reckons that the amount of septoria in the Extase doesn't mean there's an issue with its resistance.

"I put it down to the fact that the Extase is so forward early in the season — it's akin to getting more septoria when a variety is drilled early — so it has more to do with its development stage. On the flip side, Barrel is much more prostrate and plants are more sparse, leaving the crop open so there's less septoria right now."

James adds that because Extase is quite upright, the lower leaves are rubbing on the higher leaves, helping to spread septoria up the leaf layers.

Mildew is also a common sight at Long Sutton. "It's a disease that goes with a mild winter and thick crops," says Fiona.

David agrees. "Even with our later drilled fields last autumn, a mild December meant crops emerged within three weeks. All the crops look really well and are showing potential in what was a more normal autumn/winter than we've experienced for a couple of years."

Yellow rust is somewhat conspicuous by its absence, says Bayer's James Wilkins. "There was some yellow rust in early February but it's disappeared and low night temperatures are helping to subdue any pressure at the moment."

Fiona's eagle eye found yellow rust in Skyfall but James says it's pretty hard to

find at the moment. Fiona adds: "But it has that humid feel of a yellow rust infection that's about to take off."

Jonathan also spotted yellow rust in KWS Zyatt, not an unexpected find, and some brown rust in Crusoe — which was something he hadn't anticipated seeing this early in the season.

David's all geared up to start T0 applications on his more forward commercial crops this week (penultimate week in March), with more likely to follow next week.

"If yellow rust is active then we'll add some tebuconazole but our T0 strategy will be based on either Firefly (prothioconazole+ fluoxastrobin) or straight folpet — depending on drilling date, variety and disease pressure — all plus micronutrients and PGR.

"All our fungicide applications are prescriptive and tailored to the variety's strengths and weaknesses. But I think there's scope to cut back our fungicide input on some varieties," he adds.

That's an approach James is on board with. "You have to assess the crop and treat for what you see."

Skyscraper has been one of the standout varieties in David's commercial cropping — both for its yield and its disease ratings. It also came out well in Bayer trials, adds James.

At this stage in the day, it's Theodore that looks a cut above in terms of disease resistance at both the Bayer trials site. "It makes Extase look a little dirty," comments Jonathan.

Another eyecatcher is KWS Dawsum, which Jonathan describes as another Costello but with an improved yield. David grew the variety commercially last year

and reports it was his second-best yielder at 11t/ha, just behind Graham at 11.5t/ha.

"Even in the low sunlight we had during grain fill last year, Dawsum had a specific weight of 78 where most varieties were around 72 on this farm. It certainly does what it says on the tin," he says.

Sowerby, Yorkshire

The Crop Doctor tour also stopped off at Bayer's Tom Sowerby family farm, Cocked Hat Farm at Sowerby near Thirsk. Tony Sowerby is part of Bayer's National Snapshot initiative and is tracking septoria and yellow rust infection through the season in Graham and Glean.

Both were drilled in mid-October and inspections by Tom and Fiona held a few surprises.

Despite its better rating, Graham is carrying a bit more septoria than Glean which was something of a surprise as the Graham is on lighter ground.

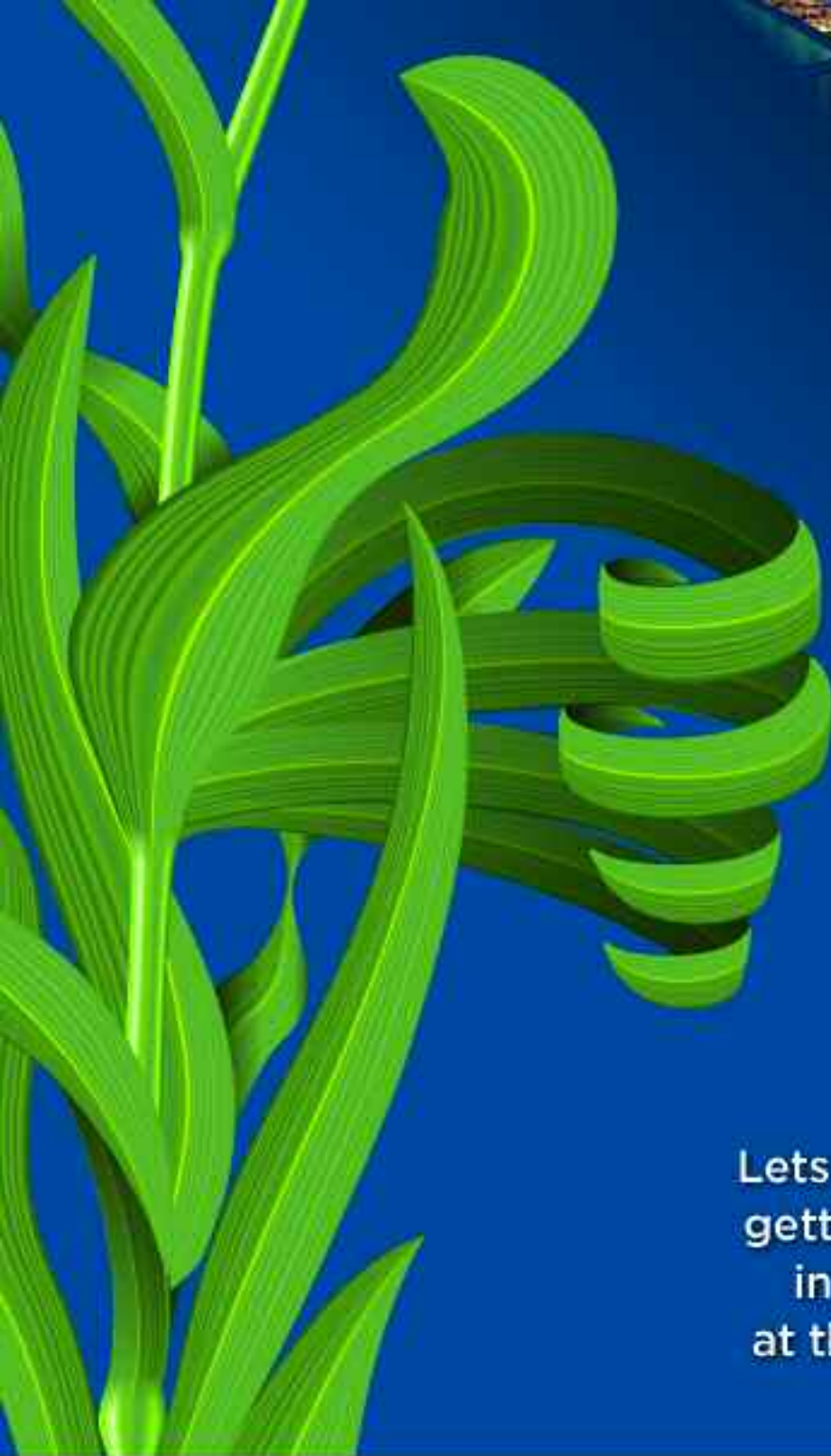
Like the other sites, both crops were still to 'lift away', notes Fiona, and she attributes the higher septoria levels in Graham to its development in spring, in a similar way to the Extase at Long Sutton. "Septoria is more visible in the Graham, but it's one to get going quickly in the spring which might explain this."

It's reflected in the CropCheck scores — the newest leaf of Glean carried DNA/mg of 0.400, a little way below that of Graham at 1.470, giving them CropCheck scores of 93 and 96 respectively, late-stage infection.

Fiona expects varietal resilience to reveal itself later in the season and reiterates that disease severity ahead of GS32 is more down to drilling date and crop development. ■



Even KWS Extase has easy to find septoria on the lower leaves of the canopy at both Bayer trial sites and at Great Tew (pictured).



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