

“The more reliant we are on chemistry, the faster it will erode – don’t wait to act.”

# Weeds dictate disease decisions

## Technical Cereal diseases survey

Drilling date and variety choice are two of the most important decisions growers make each year. But is enough consideration given to the interaction between them? *CPM* delves deeper into exactly what choices farmers are making in search of optimum crop performance.

By Charlotte Cunningham

**In recent years, with blackgrass control becoming ever more challenging, there has been a trend towards delaying drilling as an effective cultural measure for tackling weeds. But just how far has that trend spread, and what does it mean for the agronomy of the crop as a whole, especially disease control? Are varietal disease resistance ratings being used effectively and agronomy adjusted according to drilling dates?**

With the popularity of later drilling in mind, it comes as no surprise that in a survey carried out by *CPM* and Bayer that 71% of wheat growers are drilling crops later than they were 10 years ago. Going into further detail, 44% of growers revealed that they drill

most of their wheat between 1 and 15 Oct, with a further 34% drilling even later, between 16 and 30 Oct.

### Shift in tactics

In contrast, only 17% of growers are utilising the traditional drilling window (16-30 September) demonstrating the shift in tactics in recent years. “In my experience, there certainly is an increasing shift towards later drilling, largely on the back of blackgrass pressures,” explains Maddy Vaughan, independent agronomist at Indigro. “Most growers are now plagued by grassweed problems and the cost of chemistry is on the rise — as well as the increasing threat of resistance — which is worsened by early drilling.”

The blackgrass problem has now become so severe that only growers on lighter land seem to be able to get away with earlier drilling, she adds.

While blackgrass control is one of the main drivers behind growers moving to later drilling (62%), the survey showed that 14% of growers include a later sowing date as part of their septoria management strategy.

According to Dr Neil Paveley, director of crop protection at ADAS, there are other benefits of delayed drilling that should be exploited. “The shift towards October drilling is, in a way, bad news because growers have clearly been driven to it by mounting blackgrass pressures. Often, with later drilling, there is a reduction in yield, therefore, we need to look at where the benefits are.

“In trials we have carried out, shifting to early/mid-Oct drilling dates can give the equivalent of a whole extra point on the septoria variety resistance rating scale — something which is a growing area of concern for farmers.”

The extent of these concerns was highlighted in the survey. While yield is still king, with 73% of growers noting it as a key consideration when it comes to variety choice, almost half (49%) also said that septoria resistance is crucial. “Septoria is without doubt one of the biggest yield robbing diseases out there,” says Maddy. “In a wet spring the severity is worsened as ▶



Varietal resilience and delayed drilling slow the development of the disease and effectively extend the spraying window, says Bayer's Sam Harvey



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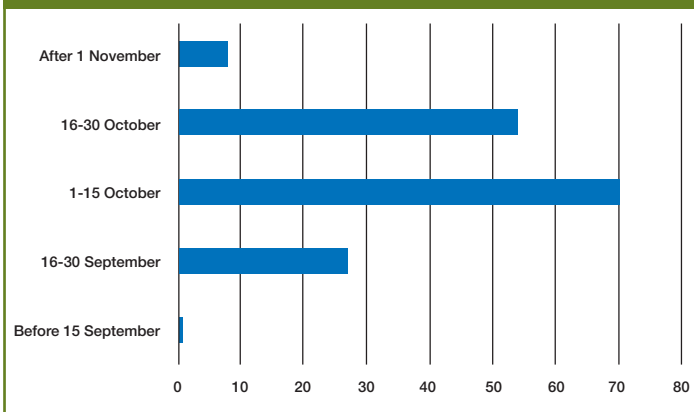
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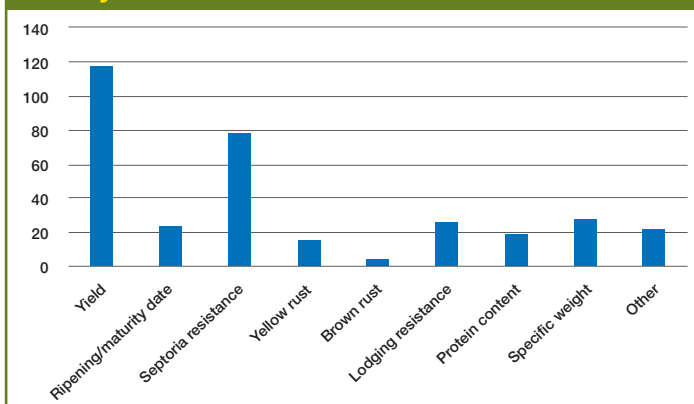
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# Cereal diseases survey

## When did you drill the majority of your wheat area?



## What are the two most important factors in variety choice?



► rain splash causes the disease to spread up the plant, which can massively affect yield.”

According to Neil, septoria traditionally would have come further down the list in terms of

importance. However, the issues with strobilurin resistance in the early 2000s has driven a change in mindset. “The increased awareness of strobilurin resistance led to a lot of

discussion about Septoria due to the reduced fungicide efficacy.”

Fewer farmers were concerned about problems like yellow and brown rust, and this could largely be due to the availability of effective chemistry to tackle these issues, adds Maddy.

## Yield potential

The question is, when it comes to selecting varieties, should growers be opting for yield over resistance levels? “The ability to deliver yield potential is what really matters in terms of variety choice,” explains Neil. “Traditionally, if a variety gave a 1% better yield potential but was more at risk of septoria then we took the risk — yield potential was everything.”

“Now, we’re faced with the challenge of reduced performance from fungicides, which makes it more challenging to deliver yield potential in high disease seasons, so there is a fine balance to be found.”

With this in mind, variety choice is an essential tool in the armoury when it comes to protecting crops from the disease, he adds. “If we look



*Often, with later drilling, there is a reduction in yield, therefore, we need to look at where the benefits are, explains Neil Paveley.*

to the problem of blackgrass control, the severity of chemical resistance has forced growers into changing their strategy. If we act now and adapt before (septoria) resistance becomes a major problem then we can protect the existing chemistry.

“The more we are reliant on chemistry, the faster it will erode — don’t wait to act.”

Despite this evident concern, many growers still sway towards varieties that have a higher septoria risk. According to Sam Harvey, commercial technical manager at Bayer, while the survey is only a guide, as data was gathered by drilling

## Sussing out septoria

Trials at Bayer’s Callow site have shown how varietal resistance and drilling date impact septoria severity. The company has been using DNA amplification to measure latent disease in leaf two in plots of KWS Siskin, KWS Trinity and Revelation.

As the latent phase of the disease can be anywhere between 14 and 28 days, Bayer considers this to be vital research. “Although leaves can appear green to the eye, inside, mycelia could be spreading and helping create the next generation of infectious spores,” explains Sam. “Only by looking inside the plant can you truly get a picture of how the disease is developing.”

A clear finding of the research is just how much difference drilling date makes to Septoria pressure, even with a resilient variety like KWS Siskin. Despite its resistance rating of 6.7, significant differences were recorded from plots

drilled on 28 Sept last season compared with those drilled just 10 days later. “Even though the plots were drilled just 10 days apart, there was a 10-fold increase in septoria DNA from the Sept drilled plots,” says Sam.

“Clearly these crops had been exposed to the disease for longer but they also had more leaf area. Canopy humidity and leaf contact could also be a factor. You couldn’t see a difference in the crop — it was only when we measured the DNA levels that the difference became apparent.”

The research also highlighted the value of variety resistance. The DNA levels recorded in KWS Trinity at GS32 were only seen in KWS Siskin 10 days post T2 spraying. Clearly, a number of factors influence Septoria pressure — such as drilling date, winter weather and rain events — but these differences were consistent over two seasons.

According to Sam, the real benefits of

cultural strategies come to the fore when things go awry. “With our maritime climate, spray delays are a fact of life. Alongside our drilling data and variety trials, we treated some plots 10 days after the optimal T1 and T2 timings to replicate rain interruptions. The plots with the highest levels of disease were those that featured an early drilled, susceptible variety which had been further compromised by delayed application.”

Even potent products like Aviator (prothioconazole + bixafen) and Aspra (prothioconazole + bixafen + fluopyram) will not fully recover a situation where the disease is well established, adds Sam. “Varietal resilience and delayed drilling slow the development of the disease and effectively extend the spraying window. This allows applications to be prioritised across the entire wheat area to assist timing accuracy.”

date ranges and percentage area sown, it shows that some growers are still prepared to grow susceptible septoria varieties and sow them early.

"I think what is most interesting for me is when we break down percentage area sown by Sept, the first and second half of Oct and in Nov, the results showed that 16% of growers had drilled most of their area by 30 Sept," he says. "When you separate this by varieties rated 6.0 and below or 6.1 and above (for Septoria resistance), the percentage of area sown are similar — 21% and 25% respectively."

A good example of this is RGT Gravity. "The high yielding wheat is relatively vulnerable to Septoria (scoring 5.2) and many don't consider it a good variety for early sowing," notes Sam. "Yet the survey suggests that as much

of this went into the ground ahead of Oct as was planted in the second half of that month."

According to Maddy, while growers are utilising more resistant varieties, the adoption of later drilling could be a reason for justifying less robust varieties. "Yield is still a major characteristic for growers, and while disease is also important, many are using later drilling to mitigate against the risk of infection, meaning less resistant varieties are still an option."

For those growers who are optimising later drilling, one of the key things is to choose vigorous varieties as these will tiller well and have a better establishment in the autumn, she adds.

While delayed drilling has ample benefits in terms of weed and disease control, there is an undoubtable trade-off with yield. Despite blackgrass and Septoria pressures, 59% of growers said that, in future, they may have to

drill more of their wheat before mid-Oct to try to preserve yield potential. "From a yield point of view, there is a good argument for drilling crops in Sept," says Neil. "However, this increases the risk of septoria."

Maddy agrees. "In the future, we hope that more varieties will come onto the market that have stronger resistance levels so farmers don't have to make that choice between improved disease control or higher yields."

While only 13% of growers stated pest management as a reason to drill later, looking ahead, Maddy believes this could be a more important reason to optimise a later window. "With the news that we are going to lose neonicotinoids, drilling at a later date will coincide with a lower aphid population as migration will have already occurred, meaning growers won't need to go over crops more than once in order to prevent Barley Yellow Dwarf Virus."

For those in problem areas where yield penalties are a real problem due to issues like blackgrass, it may be worth thinking about the rotation and considering the cost of growing wheat against — for example — a spring crop due to the herbicide spend, she adds. "It is important to remember though, that drilling later means more effective pre-emergence



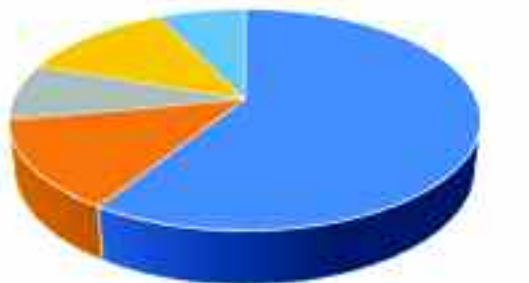
*Most growers are now plagued by grassweed problems and the cost of chemistry is on the rise, says Maddy Vaughan.*

herbicide usage as well as the potential to reduce herbicide spending."

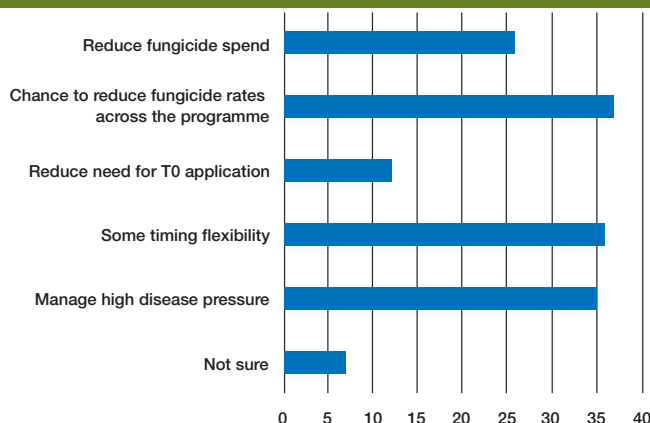
What's more, 83% of growers also expressed concerns over stagnating wheat yields in the future. "This is a massive concern from an economic and global food security perspective," warns Neil. "The UK is capable of producing very high wheat yields and we need to be doing so."

Organisations such as the Yield Enhancement Network have members producing double the national yield, and so learning from fellow farmers is the key to keeping wheat yields high, he adds. "People tend to look to scientists for the solution, but really, we should be looking to ourselves and to agronomy — look at the tools we have already got and consider how we could do better." ■

## What are the reasons behind drilling later?



## How do you benefit most from varietal resistance?



## Winner announcement

Congratulations to our five lucky winners, Steven Graves, Essex; David Fuller, Berwickshire; Robert Shepherd, North Yorks; Alex Pope, Lancs and Nick Rowsell, Hants who responded to the CPM/Bayer survey on varieties and drilling dates and have each won the fabulous prize of an Amazon Echo.

All five CPM readers responded to the survey and completed the tie-breaker question, stating which one week of the year they'd choose to drill their wheat crop and why. All five answers opted for earlier timings (late Sept/early Oct)

in terms of their ideal sowing window, however, their choices displayed a healthy dose of pragmatism coupled with some sound agronomic reasoning, which impressed the judges.

The aim of the survey was to explore the relationship between variety choice and drilling date and how growers can use them to minimise the risk of cereal disease infestations. To take part in the next survey, make sure we have your correct details by emailing [angus@cpm-magazine.co.uk](mailto:angus@cpm-magazine.co.uk)