Better the devil you know?

OSR survey

Though oilseed rape has been plagued with challenges during recent years, for many it still remains the most viable break crop to include in a rotation. But are there opportunities to enhance performance? *CPM* finds out more.

By Charlotte Cunningham

Oilseed rape growers have had it tough during recent years, with loss of key chemistry and damage from cabbage stem flea beetle among some of the challenges causing devastating losses up and down the country. However, despite the complexities, a large number of growers still believe there remains value and potential for OSR in their farm's future.

This is according to the results of a recent *CPM*/NPZ UK (formerly LSPB) survey which looked at the challenges and future prospects for the crop.

While CSFB was perhaps unsurprisingly flagged as the biggest threat to OSR, followed by disease, the severity of difficulties with growing the crop is often dependent on region, explains NPZ UK's Chris Guest. "The majority of survey participants are farming in the East of England, East Midlands and Yorkshire and the Humber, which will all have different threat levels and challenges."

It's also a tale of two halves when it comes to cropping area with 32% of growers noting that they're growing the same amount of OSR this season as they did last year. This is in contrast to 30% who said they've planted a lot less this season.

Troublesome regions

"Those areas where growers are veering towards growing less OSR are naturally the regions which suffered most in the past growing year with damage from issues like CSFB — Yorkshire and the Humber and Lincolnshire we know in particular seem to have taken the brunt," says Chris. "The East, however, hasn't suffered as greatly which is why we're seeing such a contrasting standpoint when it comes to growing the crop — and actually in this area I imagine there are a few farmers wishing they'd planted more this year in hindsight, given the challenging autumn/winter, and in general it looks very well in this region."

Delving deeper into the figures, with regards to CSFB damage levels, 46% of growers said they've experienced a little loss this season, while 21% have had considerable damage and 17% complete crop failure.

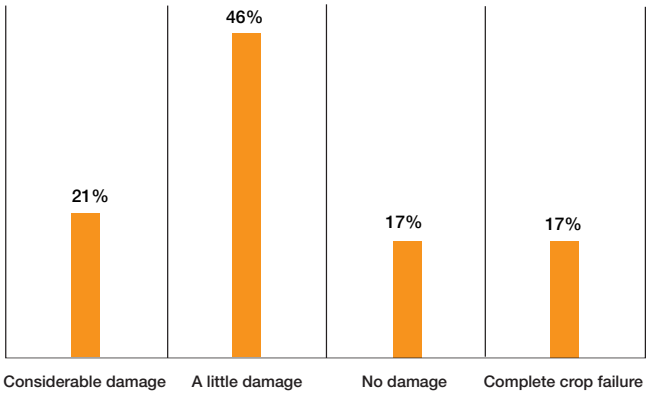
Among those who've experienced losses during recent years is James Thompson. Farming 196ha in Lincolnshire, OSR remains a core part of the rotation for James — despite its challenges — and accounts for 42ha of the total arable land. "We typically run a five-crop rotation of wheat, malting barley, OSR, maize and legume fallows," he explains. "We also carry out OSR trials on farm, testing out some of the latest varieties."

To say the crop has been tricky over recent years would be an understatement, says James. "We've had to change the way in which we grow and manage OSR on an almost annual basis for the past five years.

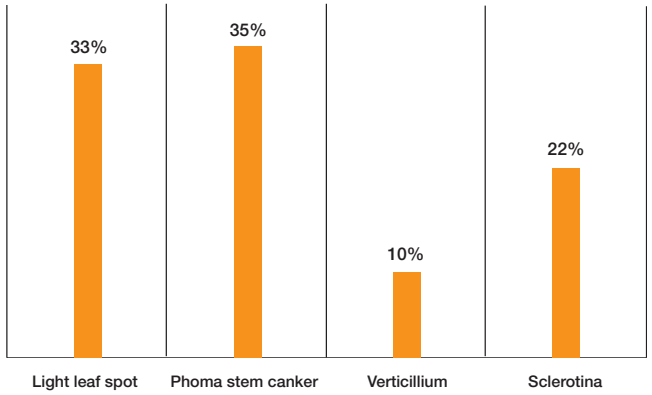
"We have a slight advantage because of our elevation, so we have slightly less beetle pressure. However, because the damage can be so severe, we've switched to a low-cost model for establishing the crop which includes leaving stubbles high and planting companion crops. Until the point that we confirm we have a viable crop, we put very little on it."

As a result of the ongoing challenge with cabbage stem flea beetle, largely as a result of the neonicotinoid ban, many growers (60%) have shifted forward drilling ▸

Have you experienced losses in this season's crop due to cabbage stem flea beetle?



What do you perceive as the greatest disease threat for your OSR crop?



▸ dates in a bid to get crops up and away to avoid the worst of the damage. "The push to learlier sowing is certainly levident with a large proportion of growers — more than half — stating that they're tending to get OSR in the ground pre-20 August," points out Chris.

James is one of those farmers who's pushed forward drilling dates and says he drills as early in August as possible just to get crops up and away. "If the previous crop allows, I drill at the start of August. But more importantly, I always make sure we avoid drilling the last 10 days of the month as we've found that tends to coincide with the epicentre of CSFB infestations. If we're not able to drill before then, we tend to go between 4-15 September."

But could earlier drilling date be stunting yield potential? Chris reckons so. "Something we're seeing and being asked a lot about at the moment, is why OSR yields are lower than they were 10 years ago despite the genetic progress we've made during that time period. But with this move to earlier drilling I think it's important to keep in mind that many people are now drilling commercial crops almost a month earlier than done in variety trials, which will undoubtedly affect performance.

"Crops are now in the ground for longer and this is often leading to plants being too developed pre-winter, which research has shown to have a direct impact on yield as so much of the yield potential is set before stem elongation, and obviously earlier sown crops are generally more prone to risk from disease."

Perhaps rather interestingly, 45% of growers said they would consider a later sowing date in September if there was data or research to support the benefit – so what does the data say?

As reported in the February edition of *CPM*, the value of later sowing has been the focus of research carried out at the University of Applied Sciences in Kiel, Germany, headed up by Dr Ute Kropf.

Ute has been looking at the relationship between reduced yields and climatic changes during recent years and believes the dip in OSR performance comes as a result of the difference in winter vegetation levels.

Delving into more detail of the science behind this, rising temperatures since 2014 has meant the dormancy for OSR period has been as short as 4-5 weeks, whereas previously this would usually be around 2-3 months. This means that crops keep growing for much longer during the autumn and winter and get going again much quicker in the spring.

Changing climate

Ute explains the reason this is relevant for yield is because it's determined early on in the crop's life cycle and with the back end of the year now tending to be warmer than usual, this yield is now being set in the winter rather than the spring.

This impacts yield potential due to accumulated thermal temperature and the role this plays in crop development. To explain the physiology principles behind this, each pair of leaves requires between 120-150°C of thermal heat plus 150°C for emergence, meaning about 600°C is required to get to the six-leaf stage.

At this point in the growth cycle, OSR moves into bud differentiation, which continues until the plants reach the beginning of stem elongation at around the 10-12-leaf stage.

When the total thermal temperature reaches around 1200°C, the plant reaches maximum bud density. After this point, the plant starts to reduce weak side tillers and flower buds to get enough food for stem elongation — which begins after this point — and growth in spring.

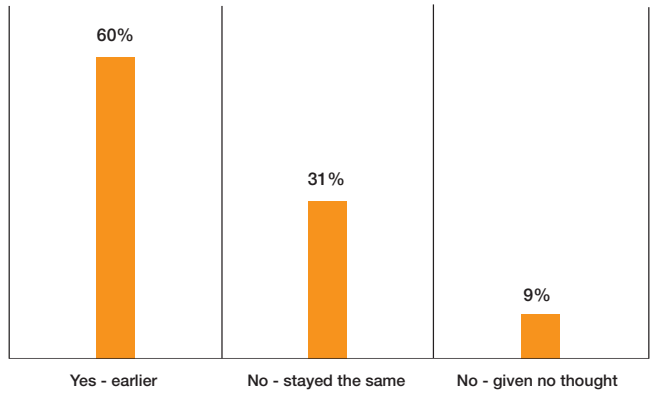
The move to earlier drilling means crops are now in the ground for longer and this is often leading to plants being too developed pre-winter, which research has shown to have a direct impact on yield, explains Chris Guest.

Applying the physiology to the data, during the traditional, colder winters, crops would have typically reached this stage at around mid-late March. However now, this is happening a whole two months earlier in January — with some of the early sown OSR elongating as early as November/December.

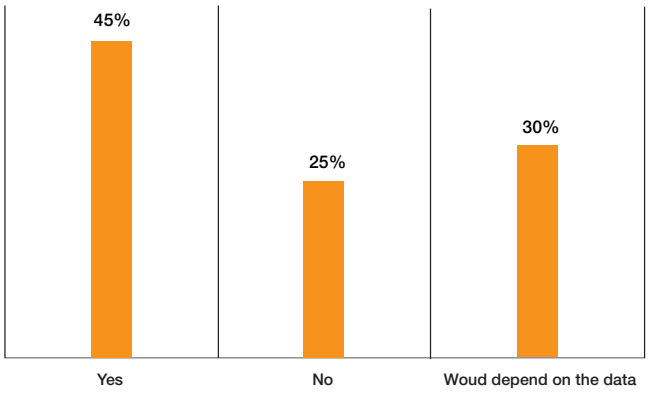
The impact of this is that crops have a shorter differentiation period and begin stem elongation with maximum bud density having already been reached due to the higher temperatures. What's more, buds are being formed in poorer conditions than they would be if they were forming in the spring, and all of this has a direct impact on yield.

Pete Berry, head of crop physiology at ADAS, has also been looking at the value of later sowing. "This is something we've been looking at and yes, there's a good opportunity to sow later into September where appropriate. If we look at some of the farmers in the Yield Enhancement Network as an example, one of the top three yields last year was from a late

Thinking back to drilling, has the ban on neonicotinoids impacted your drilling dates?



If data/research supported it, would you consider a later sowing date in September?



September sown crop.

"That said, later drilling does come with risk. This includes potentially poor establishment if the weather turns and potentially a less pigeon-proof crop over winter if plants are small. Though early drilling is a more popular option, I think there's potentially a hidden cost to it in terms of in reduced yields, which we've seen over recent years.

"Earlier drilling can also lead to all sorts of other additional management issues such as over-large canopies which require regulating, lodging, etc. Essentially, both sowing time options have pros and cons so it's a case of weighing up the balance and risk level on individual farms."

Chris adds: "We're not saying delaying drilling is the silver bullet, but there seems to be some merit, where appropriate, to consider this."

Though he's a self-confessed advocate of earlier drilling, James believes that if the science points towards yield benefits by targeting a later window, then it's worth paying attention to. "Having grown OSR for 20 years, the climate has definitely impacted crop performance and yield. If there's more information out there about how we can optimise growing what's already a tricky crop, then we'd be crazy not to take notice and consider implementing it within the management plans."

For those looking to pursue the potential in drilling later, careful variety choice will be a fundamental part of the success strategy, adds Chris.

Pete agrees: "We've seen hybrids in particular seem to do better when sown later and in slightly more challenging weather conditions. But the basic principles still apply when it comes to later drilling in terms of making sure you have a good seed-to-soil contact."

PGR applications — or lack there of — could also be playing a role in reduced performance, believes Chris, with the survey highlighting a lack of autumn applications. "PGRs can be a really useful tool to help slow down crop development if it's a particularly warm autumn or winter."

Pete adds: "It's a popular technique on the continent, where they're using autumn PGRs to make sure the growing point stays below the soil surface and is less vulnerable to frosts over winter. Obviously it's not such a risk here, but it can be.

Slowing development

"But as Chris says, there's also the possibility to use them where crop canopies are developing quickly, which helps with such an increase in thermal temperature sum in the autumn due to the challenging climate. From a lodging perspective, this is most effective when followed up with a spring PGR too."

For best effect, Pete advises applying autumn PGRs early on in the season. "The principle behind this is slowing the growth down early on rather than letting the crop get too ahead. If you wait too long, it'll be too late to have an effect."

While the majority of growers said they are exploring other crops to replace OSR, Pete stresses that alternative break crops also have their challenges. "CSFB is still a massive threat, and there are no reliable solutions to control it at the moment. It's also spread its geography and now more western and northern regions are being impacted when they perhaps previously weren't. That said, OSR is still one of the best break crops for gross margin and it's hard to ignore that."

Chris concludes: "There's definitely still a place for OSR

Pete Berry says that one of the top three yields from the OSR YEN last year was from a late September sown crop.

— we believe that and so do growers as shown in the survey. However, we acknowledge it's a difficult crop. Therefore, incorporating tools such as resilient hybrid varieties, changing drilling dates and utilising PGRs could really help growers to get the best out of what remains an incredibly valuable break crop." ■

Winner announcement

Congratulations to prize winner Richard Budd from Kent who responded to the *CPM*/NPZ UK survey and provided insight on the future for OSR. Richard won a Schoffel coat worth more than £350.

He answered the tie-breaker question of "The one thing breeders or the wider industry could do to improve the future prospects of UK oilseed rape is…"

With: "Concentrate on breeding crops suited to late drilling windows with high vigour."

To engage with future surveys, visit the *CPM* website and sign up to the newsletter.