Catching up with cercospora

Already causing widespread problems on the Continent with resistance to standard sugar beet fungicides, yield robbing disease cercospora has gained momentum in UK beet crops over the past two seasons. **Dominic Kilburn** reports on this increasing threat as well as the potential availability of a product to help with its control.

While rust remains the greatest disease threat to sugar beet yields in the UK each season, a significant increase in the amount of cercospora found in crops in both 2016 and 2017 is a cause for concern. Up until now, it was thought that key broad-spectrum fungicides applied to sugar beet were sufficient in keeping the disease in check, but with favourable weather patterns over the past two years the disease has been seen across widespread areas of the beet growing region.

"Weather patterns are certainly driving cercospora in this country," says BBRO head of science, Dr Mark Stevens (right), who acknowledges that growers and advisers are more aware of it now, and know better what they are looking for. "In 2016 we had perfect warm and wet conditions for cercospora development in East Anglia and we saw the same in 2017 when the disease was first noted in June. By early autumn it could be found in many fields growing sugar beet," he said.

"Also, spores can survive over-winter on field trash and so it's very important that growers limit risks as much as possible," he advises.

Dr Stevens says that there is concern currently about the resistance status of cercospora to strobilurin chemistry, which makes up a key part of broad-spectrum fungicide products used in the UK. He points out that resistance to strobilurins is widespread on the Continent and similar resistant strains of cercospora were found in the UK in 2016.

"There is widespread resistance on mainland Europe which is why we are keeping a close eye on what's happening there, so it may be the case that products that currently work well on key beet diseases in the UK are struggling with cercospora over here.

"Growers are certainly surprised to find disease in crops after their usual fungicide applications," he adds.

There is concern currently about the resistance status of cercospora to strobilurin chemistry.

Multi-sites

"This is where a multi-site fungicide like mancozeb may play an important part in sugar beet fungicide strategies in the future," continues Dr Stevens. "It's used widely in other parts of the world and, on reflection of the 2017 season, we are going to have to look at other ways to tackle this disease."

According to Dr Stevens, the BBRO has set up a resistance monitoring project with ADAS to see what levels of fungicide resistance are being found in sugar beet diseases – not just cercospora but other important diseases to the crop such as powdery mildew and rusts. "There shouldn't be resistance with these but it's worth

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South West suffers from cercospora

Over the past two years significant levels of cercospora have been found in beet crops grown for fodder and energy in the South West of the country.

In addition, 2017 trials in that region have confirmed cercospora resistance to strobilurin chemistry, one of the key actives used in sugar, fodder and energy beet fungicide programmes.

Just as their sugar beet growing counterparts do in the East, South West growers of fodder and energy crops tackle the main beet-related diseases of powdery mildew and rust with the standard available products, says Agrii regional technical adviser, Will Foss (right) . "We have good products containing strobilurins and triazoles which most of the time deal with the main diseases, but in 2016 cercospora appeared and as a result of poor control in commercial crops we took samples for testing and confirmed the presence of resistance to strobilurins," he says.

"This means that we are more reliant on the triazole component and are likely to need more applications of triazoles per season to keep crops cleaner for longer," he adds.

Mr Foss believes that the 'system' of growing fodder and energy crops is part of the problem, pointing out that these "low input-perceived" crops often stay in the ground later than sugar beet – lifted according to when livestock or energy plant feed is required. This can sometimes mean that new crop is planted alongside un-harvested old crop, which in turn can facilitate disease carryover. Short rotations will also increase the disease risk.

"It's possible that cercospora has also adapted to the cooler conditions of the UK compared with those found on the Continent, and the climatic conditions in the South West are certainly conducive to its development," he says.

"And perhaps the agronomy messages in the South West haven't entirely been picked up as yet by comparison to sugar beet growers, who have BBRO data and advice readily available and factors such as crop hygiene, clamp storage and a more robust approach to disease control.

"Fodder and energy crop growers unaware of the problems associated with cercospora may be typically relying on one fungicide per season, while those who understand it are applying four or five sprays or more – exactly as they are doing on the Continent in order to control resistant cercospora," he stresses.

According to Mr Foss, Agrii trials in 2017 have included multi-site fungicide mancozeb in a sequence of treatments featuring Opera (epoxiconazole + pyraclostrobin) and Escolta (cyproconazole + trifloxystrobin), and results to date show that it has added to the level of cercospora control.

Like others, he is hopeful that mancozeb receives registration for use on beet crops for the coming season as a further option to keep cercospora out of crops.

"There are still a lot of unanswered questions regarding cercospora but my advice to growers ahead of this season would be to start off by selecting a variety that has been less affected by the disease. Varieties are not assessed for their susceptibility to cercospora as yet, so use any anecdotal evidence from other growers in the area or your agronomist regarding any varietal resistance that may have been seen, and use that information as much as possible.

"Growers concerned about disease issues with their fodder or energy crops should get advice from an experienced agronomist with knowledge of beet husbandry."

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us checking to see if there has been any shift in the sensitivity to fungicide activity," he points out.

"Rust is still the most important disease for sugar beet crops in UK conditions but we will need to do more about cercospora, and we are also seeing increased signs of stemphylium which, like cercospora, can reduce yield by as much as 40 per cent as has been seen in Holland.

"In Germany and Austria, for example, growers are having to use as many as eight fungicide applications to keep on top of it," he adds.

"Growers must always consider good farm hygiene, the right fungicide approach and varietal resistance as part of their sugar beet strategy, but anyone with concerns about disease in their crops over this past season, should get in touch with the BBRO," concludes Dr Stevens.

An increasing concern

AICC and Apex agronomist Tim Martin advises across sugar beet crops in west Norfolk and west Suffolk, and reckons cercospora is of increasing concern in his area, and other parts of the beet growing region.

"We've been aware of cercospora for many years but, until relatively recently, it was just bits and pieces that appeared in crops as conditions rarely allowed its development," he explains.

However, with warmer and wetter seasons, that all seems to have changed, he points out.

"When temperatures in June spike to around 25ºC and above, plus the added humidity caused by rainfall, that seems to be a catalyst for the spread of cercospora.

"It might just be one reason for its development, but it's certainly a factor and we've also seen that happen when crops are irrigated," he commented.

According to Mr Martin, the big concern for the industry is the current reliance on triazole and strobilurin fungicides to tackle all of the key diseases in sugar beet, including cercospora. "As it stands, we don't have any other options and we know that on the Continent cercospora has become resistant to this chemistry.

"This is a high risk situation because if cercospora becomes really established in the UK we will need a total re-think in terms of how to control it," he warns.

"The introduction of a multi-site product like mancozeb for use in sugar beet could be crucial and it will be interesting to see how it performs if it gets registration.

"For now, though, we have to make best use of what we have with existing chemistry and pay close attention to application timing in relation to disease pressure in crops, rather than by calendar date.

"Perhaps for too long we've got into the habit of using the same fungicide programmes set to deal with mildew and rust, and now we may well have look at considerable changes," he says.

A cercospora cure?

Already used in wheat as a partner to azoles, strobilurins and SDHI fungicides, crop protection company, UPL Ltd, is hoping to have sugar beet on its Unizeb Gold label for the coming season. Containing mancozeb, the company reckons that by including Unizeb Gold in sugar beet fungicide applications, it will be beneficial as part of an anti-resistance strategy in a mix with standard products, while also providing additional activity against cercospora.

"There is increasing interest in mancozeb," says UPL's technical support manager UK & Ireland, Pamela Chambers (left), who has been over-seeing sugar beet trials work with the active.

"Purely a contact product, mancozeb is a multi-site fungicide like folpet and chlorothalonil, with no known resistance after many years use around the world, and therefore we believe it can help to prolong the longevity of the standard sugar beet fungicides applied in the UK, which are all single-site products and at greater risk to resistance, as well as provide its own useful activity in disease protection," she explains.

Trials in 2017 at Stetchworth, Cambridgeshire included a UPL coded product containing mancozeb used at four different rates (see graph over page). Applied at a 1.5-litres/ha rate, the UPL coded product performed similarly to the industry standard fungicide, but at the 2–3-litre/ha rates less infection was observed with the coded product.

"This product is still in development but it is hoped that Unizeb Gold (a 500g ai/litre

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mancozeb formulation) will obtain approval for use in sugar beet in 2018. Advice will be to use this in tank mix with other actives already approved for use on sugar beet," says Ms Chambers.

"Unfortunately the trial was aborted due to violet root rot being present so final assessments and yield data was not possible," she adds.

Further work is planned for 2018 and encouraging results have been obtained from the Continent.

"If we don't start considering multi-site fungicides in the mix then we will end up with resistance to cercospora similar to that which is being found in Holland and other countries," Ms Chambers warns.

"If we want longevity of existing beet fungicides, then it's vital to include mancozeb when we can.

"Rust is also a very important disease in the crop and we have found that it is providing some protection against that too, as well as bringing the benefit of anti-resistance.

"It has a place in several tank mixes," she concludes.

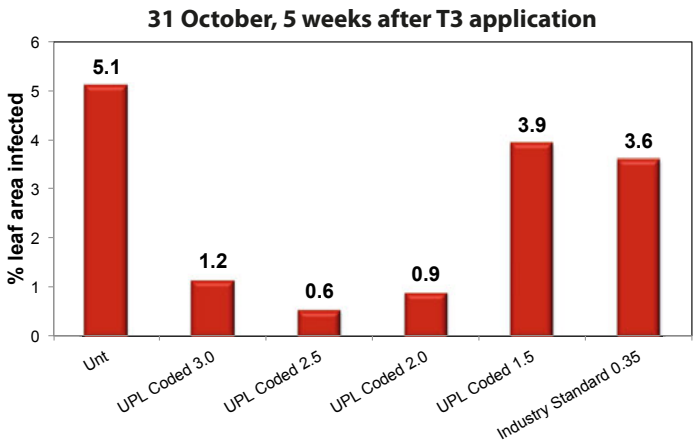
Managing director of sugar beet breeder SESVanderHave UK, Ian Munnery (left), says that while there may be a link between the spread of cercospora in the UK and fungicide resistance, he believes that too few, poorly timed fungicide sprays during the course of a season is also a part of the problem.

A month earlier

"2017 saw disease appear almost a month earlier than usual, but few adapted their spray programmes or were prevented by the weather. It also sounds as though resistance issues are brewing but farmers need to be smarter and more dynamic in their approach to agronomy and better monitor what is happening to their crops during the season," he suggests.

"We have seen cercospora resistance building in Holland, and it is clear we need to be prepared for a similar threat – better to learn from others' mistakes," he adds.

Cercospora on sugar beet 2017
Stetchworth, Suffolk



Sprays applied on 24 July, 24 August and 25 September

Source:- Dewar Crop Protection

Mr Munnery also encourages contractors to resist the temptation to maintain high throughputs from job to job by using low water volumes.

"A big and uneven canopy, as we saw in 2017, requires a higher water volume for good coverage of the bigger plants, and if this isn't taking place then it could be a contributory factor to the spread of disease.

"Good weed control is also important for good disease control as weeds can act as spreaders for disease," he continues. "Weed and disease control shouldn't be seen in isolation," he adds.

According to Mr Munnery, SESVanderHave currently has cercospora tolerant sugar beet material in trials. ■

Consider weed control strategies with early beet drilling

Future concerns over virus yellows and the desire to raise average yields across the industry means growers are being asked to drill the crop as soon as weather conditions allow. This raises the importance of variety choice in the early-sown timing, but also weed control strategies.

Speaking at a BBRO grower meeting last month, BBRO head of science, Dr Mark Stevens explained that crops will need to be sown earlier on average if the future threat posed by virus yellows was to be minimised.

"Regardless of what happens to neonicotinoid seed treatments, variety tolerance to virus yellows will become a greater part of the solution; this however, is 5–10 years away. In the meantime, growers should sow the crop as soon as possible to enable the plant to reach the 12-leaf stage before aphid emergence," he said.

Seed treatments typically confer up to 14 weeks protection from aphids (depending on conditions) after which the plant develops adult plant resistance. But it usually takes up to 12 weeks for the crop to reach this stage.

Bringing drilling date forward presents obvious logistical challenges, but there are other considerations, such as variety choice and herbicide strategy that also need to be balanced, says Bayer technical manager for Norfolk, Jack Hill.

"A variety's bolting capacity at the early sown timing needs to be considered and the same regard should be given to crop safety when deciding herbicide strategies," he says. "If the crop is to get off to a good start weed control needs to be early. Bayer supports the use of Betanal maxxPro (desmedipham + ethofumesate + lenacil + phenmedipham) with Goltix (metamitron) at the early timing because it offers good efficacy and has a good crop safety profile at a time when crop potential is easily checked," he says. ■