

Spotting trouble ahead

Sugar beet diseases

The arrival of a new disease challenge in sugar beet has highlighted a gap in variety disease resistance information and has caused a rethink of fungicide strategies. CPM finds out more about the cercospora and how to control it.

By Rob Jones

Until 2020, apart from a few isolated incidents of cercospora (*Cercospora beticola*) on the Suffolk coast, disease control in the UK sugar beet crop centred around powdery mildew (*Erysiphe betae*) and rust (*Uromyces beticola*), with rust the dominant disease in recent years.

And then in 2020 everything changed, recalls Darryl Shales, Hutchinsons' root products technical manager. "Plants already weakened by virus yellows became heavily infected with cercospora, causing a dramatic effect on the foliage and hence yields. This wasn't only due to the weather conditions that summer — with hot days/nights and thunderstorms causing plenty of leaf wetness and humidity conducive to cercospora infection — but also the chemistry that we'd relied on for several years only being partially effective against the disease."

Since then, cercospora has become the number one disease in most sugar

beet growing areas and is generally resistant to strobilurins and shows some insensitivity to triazoles, highlights Darryl. "The chemistry used in 2020 was solely strobilurin and triazole-based, and generally applied at the onset of disease. Normally this is around mid- to the end of July and fungicide application is repeated in a month or so for later lifted crops. Crops destined for lifting after Christmas would probably receive a third fungicide treatment."

Perfect conditions

It was a programme designed to control rust and mildew, says Darryl. "But towards the end of August fungicides were running out of steam and coupled with very wet, hot days and nights, it created conditions perfect for the development of cercospora. It was a perfect storm that allowed cercospora to run rife.

"To add to the challenge, there was very little information around variety resistance to the disease as, unlike for rust and mildew, there was no information in the BBRO Recommended List."

Darryl points out that in the rest of the world, cercospora has been enemy number one for a long time and a completely different strategy has been adopted to control it. Non strobilurin-based fungicides are applied much more frequently, with up to seven applications being made in

some seasons.

However, the chemistry being used is based on contacts such as mancozeb which is not approved for use on sugar beet in the UK and other classes of fungicides which are no longer available within the UK or Europe, he explains. "Triazoles are also alternated to reduce the build-up of insensitive isolates in-season. And in parts of Europe, copper-based fungicides have been given emergency approvals for use in sugar beet specifically for cercospora control."

As well as a different approach to fungicides, in other parts of the world more is known about the disease and varietal resistance to the disease is better — for example, the availability of a cercospora ▶

“ While rust and mildew are pretty obvious, cercospora can be confused with other leaf spots. ”



Cercospora has become the number one disease in most sugar beet growing areas and is generally resistant to strobilurins and shows some insensitivity to triazoles.



Good resistance genetics and changing weather patterns have meant that powdery mildew isn't the threat it once was.

► tolerance trait in the KWS CR+ range of varieties, with decision support systems to guide the timing of fungicide input widely adopted.

"To sum up, cercospora is in an increasingly challenging cycle with less chemistry available, pressure on the fungicides leading to less effective control, build-up of disease inoculum in the background and so it goes on.

"That, coupled with the increasing temperature we seem to be experiencing in the UK, means we're now at a higher risk of cercospora, depending on the weather," he says.

To meet this challenge head on a number of things have changed, including an awareness of the potential for a cercospora infection, explains Darryl.

"BBRO launched a warning system in 2021, based on models used in other countries such as the USA and Spain where cercospora risk is very high, to flag when an infection period is likely. It's based on the interaction of temperature and humidity and estimates a daily infection value (DIV)," he explains.

The warning system enables growers and agronomists to maintain a sufficient level of fungicide in the leaf when the weather is suitable for infection and the risk is high. Research has suggested that crops are at particular risk when the interval between applications is too long and the fungicide has run out of steam in high pressure situations.

Variety resistance

The lack of knowledge about variety resistance has also been addressed, with cercospora ratings now included in the BBRO RL. "Although the variation around the mean in the 2023 RL of 6.9 doesn't vary as much as the ratings for mildew and rust, it does provide some indication of varietal susceptibility," says Darryl.

So where does that leave managing foliar disease in 2023? "We have a lot more information available to us now than we did historically. However, this is only useful if acted upon, so it's important that everyone involved in the decision making on the farm has access to it.

"Signing up to the BBRO newsletter and alerts is vitally important. Don't just leave it to the agronomist as they may be on holiday and in beach mode," he quips. "August, which is when we had the problem in 2020, is a very busy period of work so attention is not always on the beet crop.

"Removing all forms of potential inoculum is very important, beet tops and spoil heaps may still be a risk factor. With the busy spring and summer, this may not have happened."

Darryl suggests genning up on disease identification too. "While rust and mildew are pretty obvious, cercospora can be confused with other leaf spots. Look for circular spots,

3-5mm in diameter with tan-grey coloured centres with a reddish-brown border. Spots grow and coalesce causing severe leaf loss."

When it comes to fungicide strategy, there's a newly approved fungicide to consider. Revystar (mefentrifluconazole+ fluxapyroxad) can now be used in sugar beet and Darryl says it will have the strongest activity against cercospora currently available.

"Other fungicide products for use in sugar beet include those containing difenoconazole + azoxystrobin, flutriafol, sulphur, and prothioconazole + fluopyram, which can only be applied from 1 September.

"For rust and mildew, the standard practice of applying a broad-spectrum product at the first signs of disease or when reported locally should still be sufficient. Trials have shown that even in the absence of disease, all crops benefit from at least one broad spectrum fungicide, with a yield lift of around 5% due to the leaf greening effect they have." ■



Previously the target of most fungicide programmes, rust remains an important disease in sugar beet.

Valuable crop in a heavy land rotation

Sugar beet plays an important part in the rotation because it provides consistent yields and is a genuine break crop, according to fourth generation farmer Peter Mahony.

"We grow sugar beet because it's a spring-sown crop that contributes to weed control, particularly blackgrass which can be problematic as our soils are mainly heavy clay."

Peter's variety of choice over the past three years has been BTS 1915, which he likes because it 'ticks the box on consistent yield'. "It fits well with our system, despite the variety being susceptible to bolting. As we're growing the crop in heavy soils, we don't usually drill until the second half of March."

Sugar beet usually follows winter wheat at the Bury St Edmonds-based farm and Peter's strategy is to plough in the autumn, burn off volunteers with glyphosate, repeat this again in the spring and create a seedbed with a good tilth.

His five-year average yield is 73t/ha, he reveals, remarking that this is a good result given the heavy soils the crop is grown in. However, last year yields were lower due to the drought and beet moth issues.

Peter's mindful of some of the inherent challenges to getting the most from sugar beet crops on his land. Lifting sugar beet can cause soil compaction which needs remedial work

before the next crop goes in and he points out that the harvester, which weighs 40t, plus the tractor and trailer are all on the field at the wrong time of year.

"We normally try to have just two or three lifts, and then go into spring barley. However, last year we managed to lift in mid-October, which worked well."

One of the reasons behind this early lifting was because there was an attack of beet moth; last year also saw challenges from heat, drought and aphids. "With BTS varieties, and particularly BTS 1915, we're able to achieve consistent yields. This means we know what we are going to get, even when prices are not so good."

Resilient varieties you can depend on whatever the season



Our varieties undergo 10 years of UK testing before 3 years of Animal and Plant Health Agency Variety trials for UK and Northern Ireland to confirm value for cultivation and use.

With more extreme weather and regional variation choose robust, resilient varieties for 2024 sowing. All varieties are rhizomania tolerant, and in addition **Jackdaw** is tolerant to Beet Cyst Nematode and **Osprey** to the more aggressive AYPR rhizomania. All are available with our own proven pellet technology and quality.

Wren, Adder, Osprey and Tawny are also on the BBRO Recommended List.



SES VANDERHAVE UK LTD
Heath Farm, Plottergate Road,
Wellingore, Lincoln LN5 0DW
T: 01522-442000
follow us on   

#TogetherWeGrow