

*“Chasing infection out of a crop is much harder and more costly than keeping a crop clean.”*

JOHN MILES

# What does the yellow rust population change mean for T0s?

Historically, it's been perceived that T0 offers the smallest yield contribution of all the fungicide timings, but could new rust strains and lush crops change the balance this season? *CPM* opens up the discussion.

By Rob Jones and Janine Adamson

In recent seasons, challenging weather in March and April combined with a general trend of growing varieties more resistant to yellow rust and septoria, has shifted fungicide spend away from T0 in favour of T1 and T2.

But could this be about to change? According to analysis compiled by Agrii, the breakdown of the Yr15 yellow rust resistance gene and its prevalence in AHDB Recommended List varieties means that almost half of the current UK wheat area is planted with a variety scored 4 or less for yellow rust.

John Miles, seed technical manager at Agrii, highlights that the breakdown of varieties to yellow rust wasn't necessarily apparent on farm last

year, primarily because conditions weren't ideal for the disease. However, the risk remains real.

“It's been a few years since we've seen a severe yellow rust threat, which happens when we have significant yellow rust pressure across a large wheat area,” he continues.

“Going back in time, some people might remember Slejpner breaking down to yellow rust in the 1980s; more will recall a similar event with Robigus and Solstice in the 1990s.

“The issue was that they were widely grown varieties – when Robigus broke down, it was grown in one in every three wheat fields across the country. This Yr15 breakdown is as significant as any of those previous occasions.”

Some of the most widely grown varieties this year such as LG Beowulf, KWS Dawsum, KWS Scope, and Champion (DSV), are rated 4 or lower, according to Agrii's variety ratings trial work, he adds. This equates



## Historical learnings

Agrii's John Miles highlights that when Robigus broke down, it was grown in one in every three wheat fields across the country.

► to 40% of the UK wheat area.

"It's 10 years since we had Torch, Kinetic and Reflection breakdown to yellow rust. There are a lot of people who'll have entered the industry since who haven't experienced managing large acreages of rust-susceptible varieties.

"What we learned back then was that the cheapest way to manage yellow rust is to stay in front of it; chasing infection out of a crop is much harder and more costly than keeping a crop clean. Couple that with chemistry loss, such as epoxiconazole, and our tools are more limited than before.

"Subsequently, much hinges on the cold winter weather and how early spring comes. Yellow rust loves mild, bright days with a decent dew to provide leaf moisture," highlights John.

However, it's not just rust that farmers have to be conscious of. Earlier plantings and mild autumn conditions have led to thick, lush crops – while this is great for building yield potential, it also provides septoria an ideal environment to spread through the base of plants.

Where crops have been sown before the second week of October, RL resistance ratings will be affected, raises Jodie Littleford, Agrii's technical manager for combinable crop trials.

In fact, AHDB-funded research led by ADAS indicates that a variety's



#### T0 benefits

In trials, whether it was a septoria or yellow rust season, there's been a benefit in disease control and yield from adding a T0, highlights Agrii's Jodie Littleford.

## A perspective on T0

Heading into spring, agronomist Ben Allard says crops look full of potential following favourable autumn growing conditions

**A**gronomist at Pearce Seeds, Ben Allard, says crops in his area were drilled slightly ahead of usual in autumn, as well as wheat tending to be planted earlier than the national average anyway.

Working with growers across Dorset, Wiltshire, Gloucestershire and parts of Hampshire, he adds that despite this, weed control has been good. And, although national focus appears to be on yellow rust, his main concern remains getting a handle of septoria.

"We're growing a wide range of varieties, mostly Oxford (DSV), KWS Palladium, KWS Extase, and a lot of LG Typhoon. Across this mix, some will be susceptible to the Yr15 breakdown and others won't.

"Because of our conditions and yellow rust being mostly isolated to parts of Hampshire and Wiltshire, I'm not expecting to see much of the disease. We'll have to see what the season throws at us."

A few years ago, Ben trialled plant health elicitor Iodus (laminarin) in early-season disease control programmes. He points out that this led him to using the product across most of his wheat crops.

"What gave us the confidence to make it a staple T0 product was its longevity – it gives protective activity against septoria for 6-8 weeks.

"For the past few years, the weather window for applying T0s has been so tight that we haven't been able to get them on. When we could apply them, things were delayed, which then forced us to go earlier if there was an appropriate window."

According to Ben, his aim is to use laminarin in a similar manner to a vaccine. "The 6-8 week activity gives us a much greater range of timings from pre-T0 to after T0, when we can apply it and still get good activity."

With various plant protection options available to get septoria under control at T0, he comments



#### Eliciting results

Agronomist Ben Allard trialled plant health elicitor Iodus (laminarin) in early-season disease control programmes; he now uses the product across most of his wheat crops.

that he uses laminarin in addition to the products he might recommend for yellow rust, helping to enable premium chemistry to be used at T1 and T2. "Iodus has its own purpose and it strengthens the rest of the programme," he comments.

The ability to slot laminarin into other early-season tank mixes has often been the deciding factor, suggests Ben. "We're applying a lot of Atlantis (mesosulfuron+ iodosulfuron) type products from mid-February to mid-March. Laminarin's ability to be incorporated into these tank mixes has come in handy, as has its compatibility with trace elements.

"This is because farmers don't want to be going through a crop with multiple passes for different tank mixes, they want to get it all done in one hit," he concludes.

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RL septoria rating decreases by 0.6 when drilled early. With most popular varieties scoring between 6 and 7 for septoria, early planting means they behave more like those considered susceptible to the disease, she adds.

In other work conducted by Agrii, the yield benefit of T0 has been evaluated. With data accrued since 2000, this suggests applying a T0 fungicide delivers an average 0.41t/ha yield benefit, but this fluctuates dramatically from season to season.

"In trials, whether it was a septoria or yellow rust season, we've seen a benefit in disease control and yield from adding a T0," says Jodie. "This can be as much as 1t/ha, but even in the lowest disease year, a T0 added 0.15t/ha. At the current wheat price, this still delivers a return to the grower."

In yellow rust-specific situations during the past three years, the average yield return has been slightly higher at 0.65t/ha, she comments. "So when you factor in the Yr15 shift going into

this season, it highlights how critical T0 is going to be to keep ahead of the disease and mitigate yield losses."

Jodie believes that there's still useful chemistry to use at T0. "For yellow rust, we have mixed triazole products like Sakura (bromuconazole+ tebuconazole), which provides fast activity. There's also folpet to get septoria programmes off to a good start."

Strobilurins could factor in at T0 for rust control, but with only two applications allowed per season, Jodie suggests using one at T0 could limit product options for the subsequent timings.

"Conditions have been relatively mild so far this season, and brown rust remains active at around 7°C, so we really require some hard frosts to reduce inoculum and avoid an early epidemic as experienced in spring 2024.

"With sensitivity shifts reducing the efficacy of SDHI actives like benzovindiflupyr, strobilurins are

an even more important chemistry group to tackle the disease later in the season," she adds.

Plant health elicitors such as Innocul8 also factor into considerations at T0, raises Jodie. Although they aren't fungicides, applying an elicitor early in the season can help to boost the plant's own natural defences, especially against septoria.

"We've seen Innocul8 deliver a very consistent yield benefit over several years with different levels of disease infection. It's a plant health product so supports disease control programmes; in the absence of disease, you still get a yield benefit from its biostimulant effects," she explains.

Jodie expects thorough crop walking in March will be even more crucial than usual this season for agronomists and farmers to ascertain the levels of disease present. This is especially true for yellow rust, which tends to develop in foci rather than across a field, she adds. ●

## Debating the season ahead

As grain prices remain far from favourable, many growers are approaching crop management with caution this spring

**W**ithout a crystal ball it's difficult to predict what crops will require this spring in terms of disease control. However, one concern remains consistent – every penny of investment has to count.

Hutchinsons' Carrie Marshall says financial modelling undertaken by the company indicates a substantial increase in overheads plus a dramatic reduction in subsidies such as BPS and SFI. "For our model farm in 2026, it's a break-even situation, while last year, there was a surplus of £198/ha. The results are stark."

She adds that factors such as wage inflation, hikes in red diesel prices, and an increase in the Bank of England base rate are all contributing to the rise in on-farm overheads. "The most resilient farmers survive by having a true handle of their financial situation.

"This includes exploiting funding opportunities, spreading risk, growing a diverse range of crops to target different markets, and embracing data and technology. Not only does this maximise every hectare, but it also results in greater productivity and a sense of fulfilment," she explains.

As for crop management, Hutchinsons' David Howard



### Making smart choices

If funds are tight this season, Hutchinsons' David Howard advises examining timings to use fungicides as strategically as possible.



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► points out that it's also a challenging situation this season. "Despite recent new product launches, there are generally fewer fungicide modes of action available which results in a lack of activity and reduced curativity," he says.

"We're also seeing over-exposure of specific varieties leading to issues with resistance, such as the breakdown of the YR15 gene. Then, the changing climate is altering the severity of disease due to lifecycle shifts, which make predicting pressure much more difficult."

According to David, prior to the January cold snap, agronomists

were reporting significant levels of yellow rust in certain crops.

"The new yellow rust race is highly aggressive with a 'fitness' advantage; growers must be aware if they have one of the most affected varieties in the ground.

"Equally, conventional 'T' timings will be protracted if crops have been drilled early, with rust cycles hitting between each application. This is because T timings were created with septoria control in mind," he raises.

Moving to a proactive stance, David says early management is critical for rust control, and if pressure continues, a T1.5

application should be considered.

"Keep gaps between sprays tighter and avoid overloading with early nitrogen. Spreading and mixing modes of action to target where they're most effective will help to utilise longevity where it counts most.

"However, if funds are tight, examine timings and use fungicides as strategically as possible – make smart choices and read risk correctly. You can't afford to undercut crop management and compromise yield, as that's crucial this year."

Cian Flavin is farm manager of the 1200ha Farleigh Wallop Estate in Hampshire. Growing all premium crops including milling wheat, HEAR oilseed rape and malting barley, he says regardless of the season, his approach centres around working closely with the estate's agronomists.

"Together we calculate our cost of production and as such, have already planned our budgeted spend for the entire rotation, to ensure we keep benchmarking against the top 25% AHDB farms. We scrutinise the farming business hard and don't subsidise it from our diversification activities," he comments.

Following a 'kind' autumn, Cian adds that it's been a pleasure to farm during the past six months. "Moving into Christmas we were very happy with where crops were at; forward crops don't fear us. Now it's about assessing whether a T0 is required, and only if applicable, to ensure we retain value.

"Given our geography and the rainfall we tend to have, our main target will be septoria control. With the chemistry currently available, we don't perceive yellow rust as a particular risk," he explains.

Over at the Lockerley Estate and Preston Farms, Craig Livingstone manages 2300ha of cropped area across two sites, with a rotation including winter wheat, peas, beans, oats, OSR and spring barley. Similar to Cian, he says no 'free money' runs through the business, therefore its arable performance is highly critiqued.

To do this, Craig also benchmarks against AHDB's

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top 25% [of farms], while targeting premium regenerative markets to bolster base prices. “48% of the crops that left our farm last year went into premium contracts, with our highest margin crop being winter oats.”

He says he utilises an IPM approach of growing the right plants in the right place. “It’s all about optimisation of every input that we use. For this season,

the reality is crops were drilled slightly earlier and for us, that will come at a cost, in possible PGR use and/or disease pressure.

“However, the farms are both looking well - crops have root structures at depth, naturally cultivating the soil and exchanging nutrients. Traditionally, we’ve not used a T0, although it all depends on the crop status as we move through the spring,” he concludes.



#### Breaking even

According to Hutchinsons’ Carrie Marshall, wage inflation, hikes in red diesel prices, and an increase in the Bank of England base rate are all contributing to the rise in on-farm overheads.

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