

Sky-high resistance

Technical Insiders View

In a group jam-packed with new options, Limagrain's latest offering claims the title of the best septoria resistance within the UK Flour Millers (UKFM) Group 3 category. *CPM* reviews LG Astronomer.

By Charlotte Cunningham

The reasons why certain varieties are selected over others are changing.

Limagrain recently carried out a survey which revealed that 67% of respondents put more of an emphasis on overall security (disease, resistance, standing power, yield consistency) when it comes to selecting a wheat variety than they did five years ago.

On the other hand, just 8% said they have a greater focus on higher yielding varieties.

So it seems gone are the days of picking something purely based on yield potential, replaced instead by a real hunger across the industry for a resilient, consistent and robust variety... not much to ask for, right?

Limagrain believes it has a real tangible solution to tick growers' multiple boxes with its latest offering LG Astronomer — a high yielding soft Group 3 wheat, wrapped up in a pretty robust package.

Spawning from a (Cougar x Leeds) x Britannia parentage, what's most likely

to make Astronomer stand out from its competitors is a really robust disease profile, explains wheat breeder Phil Tailby. "These parents combine the best of all worlds in a resilient, secure package."

As well as a unique combination of 9s for both yellow and brown rust, Astronomer scores best in class for septoria resistance, with a score of 7.4. "Septoria resistance comes from all three varieties, but in particular Cougar, and many varieties now feature Cougar in their parentage due to this superior resistance."

Molecular strategies

That said, with so many seed houses making use of Cougar's resistant lines, it could raise questions over the longevity of such resistance. "Relying on a single gene is a risky approach, but a lot of knowledge has been gained over the years and now we use molecular strategies to actively combine multiple resistances together to protect the individual lines.

"The focus for the future is looking at overall resilience, and this includes protecting the resistance we have, as well as bringing through new lines that don't come at the cost of yield."

According to arable technical manager, Ron Granger, this inherent resistance shines through in Astronomer's yield — namely, the untreated performance. "Compared with both our own recommended varieties and the other key commercial listings, Astronomer comes out on top with 86% of controls. To put this into perspective, KWS Barrel was the leading biscuit variety for a number of years, and was a very good option, but its

untreated yield now sits around 71%, showing the superior performance growers can expect to get from Astronomer."

In terms of treated yields, at 101, it's not the highest on the table but is still good, and boasts a score of 102 in the East, putting Astronomer on par with its fellow Limagrain stable mates in that region, adds Ron.

To assess geographic performance, in 2019 the team at

Limagrain assessed the yield potential at four sites in the South East, as well as in Scotland — where Astronomer could likely find a home due to its distilling status. "In a testing season, Astronomer was up there with one of the best."

In terms of rotational position, Ron says Astronomer seems to be a good second wheat, as well as a first. "From the data we have so far, I wouldn't say it's outstanding as a second wheat — compared with something like LG Prince — but it has potential."

Looking at soil type for best performance, Ron reckons the variety is swaying towards doing slightly better on medium-to-heavy soils, though this is based on limited data due to the difficulty with trials last year during the COVID-19 pandemic. "It doesn't seem to like drought situations which are often associated with lighter soils, so in my view, to get the best from it, Astronomer wants to be drilled on the heavier soil types with moisture retention."

This limited data has also impacted being able to draw conclusions on where Astronomer falls best within the 'normal' autumn sowing window, but so far, it seems to be doing well in the early slot (before 25 Sept), explains Ron. "AHDB RL data so far suggests yields of 105% when planted in this early window. The variety has the right combination of agronomics that allows it to

“The septoria score in particular gives Astronomer a real edge.”



Astronomer's parentage combines the best of all worlds, says Phil Tailby.

do well, even in an earlier slot.”

Quality indicators are also likely to attract growers, adds Ron. “It has a good Hagberg, but the outstanding feature is its specific weight (77.8kg/hl) which is the best in the group. It’s one of the key attributes growers are looking for on farm, so Astronomer really boosts the current offerings.”

Agronomy wise, Astronomer is stiff-strawed — which compensates for its slightly taller nature — and has orange wheat blossom midge resistance which has become



Astronomer came out on top in Agrii’s variety sustainability ratings, says Colin Lloyd.

somewhat of a ‘must-have’ in the Group 3 category, he adds.

Astronomer’s slight downfall is its mildew score (4), but Ron reckons this is easily controllable with existing chemistry. However, this will require monitoring on some soil types, he warns.

Slightly different

Agrii’s Colin Lloyd has been looking at varieties in a slightly different way, giving them ‘variety sustainability’ ratings rather than scoring on specific characteristics. “The ethos behind this is to help growers choose varieties that offer them the greatest agronomic strength with the least production risk and environmental impact.”

This is no criticism of the RL, stresses Colin, with Agrii looking at performance under commercial farming regimes rather than primarily genetic potential.

“Our List compliments the RL with disease ratings that take account of possible breakdowns in resistance at relatively few sites that can easily be lost in multi-site and multi-year averages.

“We deliberately include trial sites and treatments designed to put varieties under the greatest possible lodging pressure. Plus, we also have the only available scientific



Ron Granger says Astronomer’s inherent disease resistance shines through in its untreated yields.

assessments of grassweed competitiveness from our Stow Longa variety screening. And, we add to the breeders’ latest safe sowing date information on the RL with latest optimum sowing dates from our own evaluations.”

These ratings became available for the first time last year, and Colin says that Astronomer was the variety that came out on top.

“Interestingly, while of course Astronomer is a solid group 3 variety, it is worth bearing in mind that it is a really good option as a feed wheat. Forget its group status, it will work for growers without constraints on whether they usually grow soft or hard Group 4 varieties. ▶

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► “If growers are looking for a low risk, flexible variety — which also boasts a premium potential — then Astronomer will deliver exactly that.”

So what does the seed trade think?

COFCO seed manager, Russell Frost, says that although the Group 3 category is full of new options, it's that disease resistance that makes Astronomer stand out. “The septoria score in particular gives Astronomer

a real edge.”

Another thing that stood out for Russell was its early drilling potential. “I've got a horrible feeling that more and more growers are going to want to get on earlier this year after two difficult autumns, and Astronomer will allow growers to do just that if necessary.

“On top of this, the high untreated yield adds to the flexibility of the variety and is particularly helpful if

What's in a name?

When it comes to finding its place in the market, Limagrain's Tom Barker reckons the options are endless for Astronomer. “Traditional Group 3 growers will know that their wheats are used for a number of processes including baked products, cereal, distilling, biofuel and export. However, those who tend to stick to the left-hand side of the table could also benefit from growing a resilient variety, like Astronomer.”

Interestingly, the LG wheat growers survey showed that 56% of growers are growing Group 1, 2 or 3 wheats primarily for feed, with the main reason for this — as opposed to growing a Group 4 — was due to the agronomic package of the varieties.

“One of the things I've learnt about Group 3 varieties is that they're considerably easier for farmers to hit the right specification,” says Tom. “If you look at the full specification Group 1s, you're aiming for around 13% protein, 76kg/hl and 250 Hagberg — which is a pretty tall order, and most of the time if farms are going to struggle in one of those areas it's going to be protein.

“It's well documented that the higher the yields get, the more and more nitrogen you have to feed it and unless you're in the right part of the country, it can be really difficult to hit that protein requirement — and I think this is where Group 3s can be really beneficial.”

With Group 3s, end-users generally don't want a high protein variety, he explains. “They are usually looking for a specification



somewhere between 10.5-11% for protein, 72-75kg/hl specific weight — depending on the contract — and a Hagberg of anywhere between 100-225). So in terms of growers hitting that Group 3 spec it's an awful lot easier and doesn't require a lot of extra nitrogen.”

In 2020, of the 4747 samples tested for the AHDB Cereal Quality Survey, only 32% met full spec milling for nabim Group 1 (now known as UK Flour Millers, or UKFM Group 1) compared with 66% for Group 3 — meaning an awful lot of Group 1 wouldn't have made specification, but would probably still have cost the grower in terms of inputs, says Tom.

“The year before, 42% met full spec milling for nabim Group 1, but 68% did for Group 3.

“Because Astronomer has this all-round package that we think growers want, the message from me is that in Astronomer, we have a really robust variety, it's great for feed, but you're also going to get a premium for Group 3 and there's a good chance you're going to get it because the spec is much easier to hit.”

LG Astronomer at a glance

Yield (% treated controls)

UK treated	101
East region	102
UK untreated	86

Disease

Mildew	4
Yellow rust	9
Brown rust	9
<i>Septoria tritici</i>	7.4
OWBM	R

Agromony

Lodging (% +PGR)	8
Lodging (% -PGR)	[7]
Height (cm)	88
Ripening days (+/- Skyfall)	+1
Specific weight (kg/hl)	77.8
Protein content (%)	11.9
Hagberg falling number	238

Source: AHDB Recommended List Winter wheat 2021/22 [] = limited data



Julius Deane reckons a continued interest in home-baking, triggered by the recent lockdowns, could cause soft wheat demand to increase.

for our normal biscuit flour, but to see something in the Group 3 category with such a good specific weight is really pleasing."

During the first lockdown in 2020, many supermarkets ran out of flour due to an uptake in home baking, and if this continues post-pandemic, Julius reckons it could further increase the demand for biscuit wheats. "The majority of the extra flour sold was plain/self-raising for biscuits and cakes, meaning the biggest market uplift we saw last year was for soft wheats.

If this becomes a long-term hobby for people, it could see demand surge further." ■

unpredictable weather hampers disease control."

And from a milling perspective, Julius Deane — wheat director at Carr's Flour — says having a good bold grain that millers can get as much flour out of as possible is key. "Here, we're looking at specific weight, and Astronomer has been consistently good in this department.

"It's not always crucial to have high Hagberg and high protein

In-field performance

A combination of good yields and robust resistance are key priorities for Lincs grower, David Hoyles, who is growing 32ha of Astronomer this year. "LG varieties have always suited our soil/rotation and we often try and pick out varieties that are at the better end of the resistance spectrum. We can normally grow quite luscious, thick crops, so what we really want is that inherent genetic resistance."

David drilled the crop on 13 Oct, into fairly wet conditions. But despite the poorer start, all looks promising so far. "One field went in after potatoes and the other after kale. Usually, we'd aim to drill earlier than this, but the late



harvest meant we were just grabbing acres where we could.

"However, the crop has come on well so far — especially considering the cold winter we've had. It has tillered nicely, and I think it has really good potential.

"The field of Astronomer that went in after kale has been entered into YEN, so I'm really looking forward to getting that detailed analysis at harvest."



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