

# Clap for a thunderbolt

“High yield potential hybrids do still need the right inputs to get the best out of them.”

## Insider's View

**Thunderbolts and lightning, very, very exciting to see. Turn your eyes to the sky to take a closer look at Syngenta's new hybrid barley's performance. CPM looks between the clouds to find out if SY Thunderbolt really is magnifico.**

**By Melanie Jenkins**

**Storming to the top of the AHDB Recommended List for winter barley, SY Thunderbolt is the six-row feed variety that's attracting attention — in part due to its yield, coming in at 107% of control varieties.**

It's a long road breeding a new variety, but Thunderbolt stood out as having a wide range of attributes in Syngenta's breeding lines, explains the company's Sarah Hughes.

“The key with Thunderbolt is its yield,” she says. In three out of the past four years of official trials it's come out on top, and in 2020 it was still third highest in the yield rankings.

“Hybrids do tend to be in the top three or four yield slots and Thunderbolt has consistently been up there, proving it has

a very stable yield. And that's what really appealed when we decided to bring it forward.”

Frontier has had Thunderbolt in its own trials for the past few years and has gained a very positive impression of it. “We've seen Thunderbolt in AHDB trials and its performance has been backed up by similarly impressive results in our own trials across the country,” explains the company's Jim Knight.

### Top performer

“It was the top performer at the Bleasby site in Lincolnshire and the second highest at the Haywold site in East Yorkshire last year, which mirrors absolutely what we've seen on the RL. It has the yield potential to outperform everything else.”

Duncan Durno of Openfield agrees Thunderbolt's yield is top end. “Its specific weight is good — at 70.5kg/hl — which also helps it on a bit,” he says.

Consistency is another trait of hybrids that Sarah feels is very valuable to growers, especially with the increasing unpredictability of seasons. “Some varieties can perform amazingly one year and then the next don't do as well, but hybrids are consistent by nature.”

According to Ben Urquhart of Syngenta, Thunderbolt's cross-season performance in RL and National List trials is a good sign. “Its consistency in trials is a really nice indication that Thunderbolt's not a one-hit-wonder.”

Not only has Thunderbolt shown it can consistently yield year-on-year, but across regions. “It performs very well in the West — yielding 108.2% — which we think is linked to its resistance against wet weather diseases,” explains Sarah.

Thunderbolt scores an 8 for resistance to mildew and 6s for both net blotch and rhynchosporium. “All the diseases which love the wet and the warm,” says Sarah. “To add to this, it's also demonstrated a high untreated yield. We feel, as seed breeders, that disease resistance is of the utmost importance to farmers. So providing a good disease resistance package gives them flexibility.

“Although we wouldn't recommend ▶



*Thunderbolt has performed particularly well on heavier land, according to Sarah Hughes.*



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*Thunderbolt has a strong disease package but also responds really well to fungicide applications.*

► dropping a fungicide, its disease resistance will give around a week of flexibility with spray timings. Whereas, if a variety has low resistance, missing those spray windows can mean a missed chance to get ahead of the disease and it could then impact yield.”

Improved disease resistance is continually being bred into varieties, explains Sarah. “This is one reason why moving on to new varieties can be so valuable.”

And although many growers now adopt varieties with better disease resistance packages as part of their integrated pest management strategies, it’s possible legislation may also soon be encouraging adoption of these types, she suggests. “In France, the push legislatively is towards organic crop production. In the UK it’s still very flexible, but in the future we may well see restrictions get tighter.”

Even though Thunderbolt has a very good disease resistance package on paper, it’s still very receptive to fungicides, says Jim. “It’s one of the best hybrid barleys, but we know brown rust is a problem for hybrids and we did see this in Thunderbolt last year. It’s too early to score the 2022 crop, but I’d say it sits in the middle of the pack for performance against brown rust.

“But the interesting thing is Thunderbolt’s response to fungicides,” he says. “At Frontier’s Bleasby site, we trialled fungicide treated crops against untreated ones — both with full

PGR programmes — and found that there was a significant yield increase of 1.5t/ha when a fungicide was applied.”

And this was even more noticeable at a trial held at Haywold, which was a combined trial with and without fungicides and PGRs, says Jim. “The difference was even more pronounced, with the treated crop plus a PGR yielding 2.7t/ha more. So it shows that high yield potential hybrids do still need the right inputs to get the best out of them.

“We have different conditions at the different trial sites. Bleasby is a medium clay loam at a lower altitude, is earlier to harvest and there’s less lodging pressure.

“The Haywold site is very fertile, with a lot of organic manure on a free draining loam over chalk,” he explains. “This is where you’d expect to favour varieties with good standing strength as there’s a lot of nutrition from the organic manures and higher lodging risk.”

Using each site’s mean yield as a guide to demonstrate Thunderbolt’s performance, it achieved 108.8% at Bleasby and 110.8% at Haywold, explains Jim. “So Thunderbolt performed slightly better on the Haywold site with the higher organic matter level. This backs up the AHDB data which suggests Thunderbolt will perform better on heavy sites or those with higher soil fertility.”

Sarah agrees Thunderbolt has performed particularly well on



heavier land. "In 2021 it was the highest yielding hybrid on heavy soil and the year before it was the highest yielding of all the winter barley varieties. But it'll perform across soil types."

Duncan has also come to the same conclusion. "It fits on heavier soils where growers are using hybrid barley as a tool for blackgrass control. The only semi-negative aspect of the variety is that it needs a good growth regulator — but this is the only little drawback to it."

Looking at Thunderbolt's characteristics, there's no getting away from the fact that it's a tall variety at 114cm without a PGR, but hybrids are generally taller varieties, says



According to Duncan Durno, Thunderbolt's yield is top end.

## SY Thunderbolt at a glance

Yield (% treated controls)	
UK treated	106.5
UK untreated	87.3
East region treated	105.6
West region treated	108.2
North region treated	106
Grain Quality	
Specific weight (kg/hl)	70.5
Brown rust Screenings (% through 2.25 mm)	1.8
Agronomics	
Resistance to lodging without PGR	5.2
Straw height without PGR (cm)	113.5
Ripening (+/-KWS Orwell)	-1
Disease resistance	
Mildew	7.8
Brown rust	6.2
Rhynchosporium	5.8
Net blotch	[6]
BaYMV	R

Source: AHDB Recommended List, winter barley 2022/23  
 — [ ] = limited data.

Ben. Thunderbolt scores a 5 for resistance to lodging, which is the lowest on the RL, but he points out that lodging risk depends on a number of different factors, including soil type, weather and drilling date.

Thunderbolt isn't a difficult variety to grow, says Sarah. "And will reward a grower, likely suiting those who've grown hybrids before — we see it fitting well for those who've had success with SY Kingsbarn and Bazooka.

"Like all hybrids, the variety will benefit from an early application of nitrogen and getting the timing right with the PGR will pay dividends in yield come harvest," she suggests.

"Thunderbolt does show a good response to a PGR — taking it down to 104cm, so we'd recommend a PGR at T0, T1, T2. A three-application approach."

In this respect it's akin to other hybrids, says Sarah. "Aim to apply a few PGRs to help manage height and lodging."

### Grassweed suppression

According to Jim, getting the PGR applications right for Thunderbolt may be more important than with other hybrids because of its weaker straw. "It'll certainly need two as a minimum," he says. "Growers might want to be wary of planting on heavier or more fertile soils because of the lodging risk."

A further notable characteristic of hybrid varieties is their ability to suppress grassweeds, says Sarah. "Hybrids have a vigorous rooting system compared with conventionals, which provides two benefits. One is that the big rooting system supports vigorous growth and tillering above ground, allowing plants to out-compete weeds. This means hybrids are great for blackgrass control and we're doing research into their effect on ryegrass and brome with ADAS."

Ben highlights that with the high price of nitrogen, growers may be looking to improve their nutrient use efficiency. "We're in a very volatile time for prices, so it's important to have varieties, whether hybrid or conventional, with high yield potential that can also make the most of the nutrients available to them. While hybrids generally have a high yield potential, with this year's challenging prices, growers may want to think carefully about their return on investment.

"We're working with ADAS on trials that indicate hybrids are good at utilising nitrogen within the plant and we're looking forward to seeing how the trials progress."

The second benefit is that hybrids may have a better uptake of nitrogen as there're



Jim Knight has a favourable impression of Thunderbolt having seen it in Frontier's trials over the past few years.

more roots in the soil, he adds. "This is beneficial both economically and sustainably, as it might allow some growers to reduce their inputs and therefore their carbon footprint."

According to Ben, Thunderbolt gets out of the ground very quickly in the spring. "I've seen it move very fast in spring. It sits up slightly faster than Kingsbarn which is great in blackgrass situations. As well as getting going quickly, it has a good capacity to tiller, which in barley drives the overall yield at the end of the season."

Jim points out that hybrid barleys should be supported with more N than conventionals so some growers might think twice about opting for a hybrid because of the current cost of N. "But the increase in the barley price and Thunderbolt's yield means there's still a good gross margin to be had."

With an early maturity rating, Thunderbolt can give growers flexibility, says Sarah. "For those wanting to get oilseed rape in, it ▶



Hybrids are a good option for those wishing to tackle grassweed burdens as they are good at out-competing them.





*Having an early maturing variety can be beneficial come harvest for those wanting to get OSR drilled behind it, says Ben Urquhart.*

► means they can get the barley crop off early and get the ground prepared.”

This also means there won't be an overlap of barley and wheat being fit at harvest at the same time, adds Ben. “It's a nice extra benefit as a gap between barley and wheat is useful.”

In Thunderbolt's first year of commercial availability in 2021, seed was quite limited, according to Sarah. “But this year seed production is in full swing so we don't see any issues with availability, with around 6000ha in the ground for the coming harvest.”

Jim believes demand for new hybrid varieties often gets off to a slow start. “This is because growers are often slower to switch hybrid varieties than they are with other varieties as they're slightly more specialist.

When a grower finds a hybrid they like and that works, they often stick to it for a while — we saw this with Kingsbarn and Bazooka.

“And though its straw strength might give some reason to pause, Thunderbolt's yield performance will make more people look at it this year, so I expect its market share will increase,” he adds.

Thunderbolt is what Syngenta refers to as a wide availability variety, says Sarah. “This means it's not attached to one merchant company. One of the reasons for this is that we saw it having a wide appeal to a lot of farmers, in many areas, because of its characteristics.”

And grower feedback has been positive so far, according to Ben. “Generally, growers have been really pleased. It'll be nice to be able to go to them with five years of data showing consistently high yields, coupled with the disease package.”

Thunderbolt can also offer an alternative to second wheat as it has a good performance in a second cereal situation, with trials showing that it's less susceptible to take-all, he adds.

And Thunderbolt could present a further opportunity for growers, says Ben. “We've been exploring trials for a number of years looking at the potential for hybrid winter barley as wholecrop for anaerobic digestion. We think it could be a good alternative to rye and are hoping to know more about its potential later this season.”

Syngenta is hoping that Thunderbolt's popularity will grow and that it might become the new Kingsbarn, says Sarah. “This will depend on how it does in the field and how farmers like it, but it's showing signs of doing well so far.” ■

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*This year Thunderbolt seed will be readily available for autumn planting.*