

Wheat for a new world

“It’s very different from the majority of other varieties on the RL.”



Insider’s View

New genetics have brought Elsom’s newest wheat variety, Mayflower, sailing onto AHDB’s Recommended List. But what makes the variety unique and potentially worth trying? CPM heads on a voyage to discover more.

By Melanie Jenkins

For those unfamiliar with the historic ship, Mayflower, it was a square-rigged sailing vessel known for being one of the first colonial ships to transport pilgrims across the Atlantic to America, with its most renowned voyage completed in 1620. The aim of the trip was to take its passengers to a new life and new beginnings in the New World.

And in this respect, the New World is exactly where Elsom’s wish to take growers with its latest wheat variety, Mayflower — so named as it was launched in 2020, the 400th anniversary of the fabled ship’s crossing.

The journey Mayflower offers is one of high disease resistance, quality bread-making characteristics and the potential to utilise nitrogen more efficiently. Mayflower sits on the AHDB

Recommended List as a Group 2 wheat variety, but according to Elsom’s Paul Taylor, it’s a variety bred for bread.

French lineage

One aspect of Mayflower that Elsom’s hope will catch growers’ attention is its parentage. Hailing from French parents, the variety brings new genetic variation to the UK at a time when many varieties on the RL share parents and, in some lineages, their resistance to key diseases is deteriorating. “We’re working on a narrow genetic base in the UK at the moment, so being based on French genetics is one of Mayflower’s selling points, as hopefully its resistance is more durable to current disease pressures,” says Paul.

Kent-based T Denne and Sons has also been part of the process, according to the firm’s Andrew Bourne. “Our relationship with Elsom’s means we do quite a bit of work helping develop new varieties and we recognise we need diversity in the range of varieties we’re offering. There’s too much reliance on Group 3 and 4 varieties, so it makes a lot of sense to have alternatives to consider.”

Mayflower’s parentage really caught Andrew Bourne’s attention. “It’s very different from the majority of other varieties on the RL, and by bringing in genetic diversity there’s a lot better chance of Mayflower not succumbing to the major foliar diseases like septoria, yellow rust and brown rust. There’s a significant

number of mainstay varieties on the RL which are pretty incestuous, so Mayflower brings an opportunity to widen the genetic pool.”

So how has Mayflower made its way to UK fields? Elsom’s is the marketing agent of the French breeding company, Asur, which is co-owned by four Saaten Union members; Nordsaat, Ackermann, Petersen and Südwestsaat. “Elsom’s original remit was to produce high yielding feed varieties from soft wheats but now there’s more of a market for Groups 1s and 2s,” explains Paul. “Since our partners produce milling quality varieties, it helps us find Anglicised types that will work well here.”

In the early part of Mayflower’s testing it was put into a trials programme to see if it was a suitable variety for the UK and Asur



According to Paul Taylor, Mayflower’s French parentage is one of its key selling points.



Mayflower has an earlier growth habit in spring because of its French genetics.

had sent samples of coded lines to be trialled as well. "It completely stood out for its disease resistance in both programmes last year," says Paul. "Everything else untreated was dead and all we could see left was Mayflower."

And it's Mayflower's disease resistance profile which could well garner a lot of interest. Scoring a 9 for yellow rust and an 8 for septoria, it has the strongest resistance package for these two diseases of all the quality wheats on the RL. "Mayflower has very strong early season disease resistance which is key to maintaining green leaf area," explains George Goodwin of Elsoms. "It scores a 6 for eyespot, partly due to carrying the *Pch1* gene, and its strong disease resistance continues in the mid to late season with its dual 6 scores for brown rust and fusarium."

To explore how it would react to fewer fungicide applications, Saaten Union placed Mayflower into trials, says the company's Andrew Creasy. "We trialled Mayflower, among other varieties, at our Suffolk site and as well as putting the RL standard treatment of three fungicide applications on — costing £220/ha — we dropped the T1 and T3 sprays and just sprayed at T2, costing £48/ha.

"From a margin point of view, one application did better than putting three on. Other varieties in the trial succumbed to yellow rust and septoria before we put the T2 spray on, but Mayflower held its own," he adds. "And

though it does respond to fungicides, Mayflower allows growers a relatively open window for when sprays could go on."

Fungicide response

But Andrew Bourne strongly advises caution when it comes to reducing sprays in real-field situations. "A lot of people have fallen into this trap with highly resistant varieties in the past," he says. "They think they can get away with lower inputs and save a few pounds, but there's always a response to a robust fungicide programme," he believes.

"You're not only helping to protect the genetic resistance to disease, but also putting the plant into a physically better condition so it can put more energy into yield and quality rather than disease resistance. It's important to remember that trials are very different situations to on-farm growing conditions."

Due to its French heritage, Mayflower has an earlier growth habit in spring, but this has been an advantage in the past few years, says Andrew Creasy. "Interestingly, where we've been getting long, dry periods in the spring, it's advantageous to have something that gets up and away. Then when the disease resistance kicks in, even the untreated crops in our plots stayed green right to the end."

After seeing how Mayflower performed in trials in the UK against septoria and yellow rust, Elsoms grew milling specification ►



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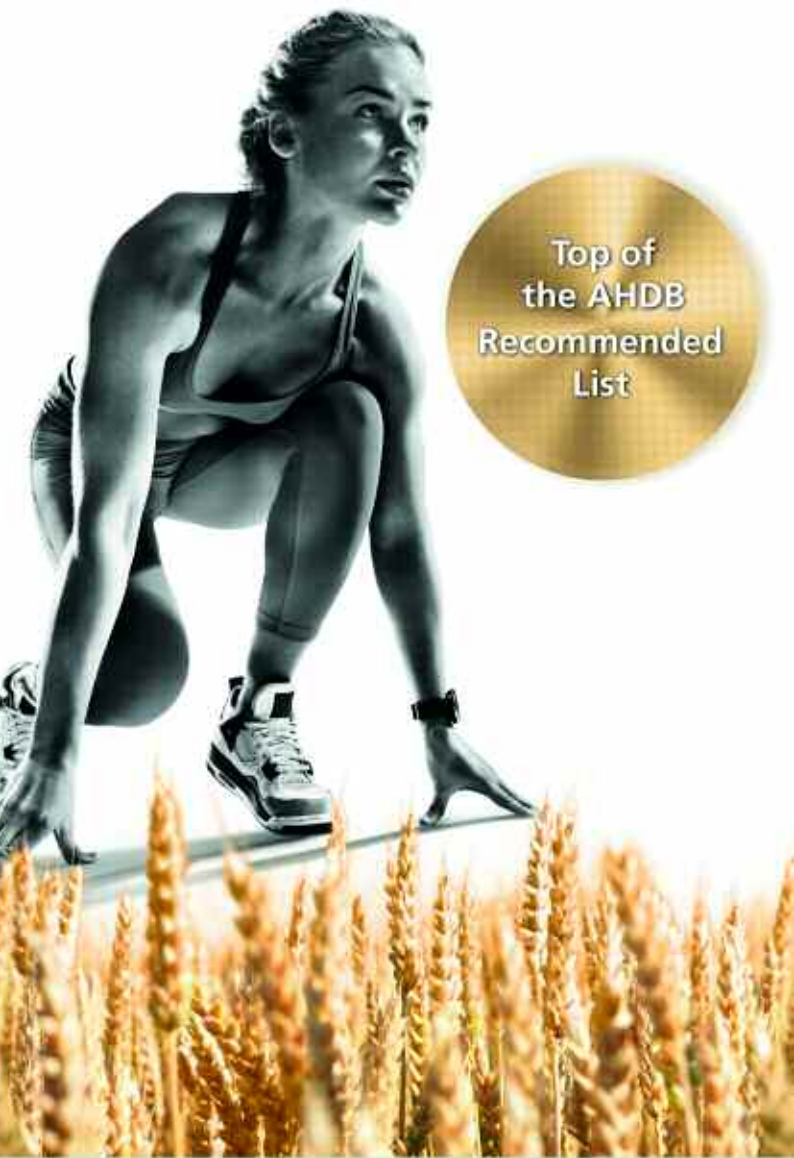
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People have driven past Tom Reynolds's field of Mayflower and stopped to ask what variety it is.

► plots and screened these at 13% protein, at which point they sent samples to Campden BRI to get tested, explains Paul. "It was tested alongside UK Group

1 and Group 2 wheats and against German E wheat — which is set as being the standard for excellence — and Mayflower produced a ►

Setting a course

Tom Reynolds is growing Mayflower for the first time as a seed crop on Pent Farm, near Hythe in East Kent. Running a mixed farming business, Tom has 200ha comprised of 30ha of permanent pasture for his 30 head suckler beef herd, 75ha of winter wheat, 31ha of grass seed and 28ha of winter beans, with the rest in HLS.

The farm is mostly heavy Gault clay, with a high silt content and high pH but some of the higher land is a clay with flint, while the downland is steep chalk.

Having grown KWS Extase last year, Tom wanted another variety with similar agronomics. Andrew Bourne suggested Mayflower and Tom now has 28ha of Mayflower with the rest of his wheat area consisting of Extase and KWS Zyatt.

Tom tries to stick to no-till but will do some light cultivations when needed. His Mayflower crop was direct drilled in early October after beans with a Horsch Sprinter fitted with JJ Metcalfe coulters and then rolled.

All his wheat crops had Crystal (flufenacet+ pendimethalin) and Hurricane (diflufenican) as pre-emergence sprays and then a dose of slug pellets. "We had a wet October and though we don't usually see slugs in our wheat when it follows beans, this year the slugs were considerable which was

a struggle," says Tom. "Luckily, the weather dried up and the crops grew away from the slugs. You wouldn't know Mayflower suffered from slug damage as where it dropped leaves, it's certainly compensated."

Tom applied 100kgN/ha of 30N 10S liquid nitrogen and a further 120kgN/ha in late April. "We didn't split further as we had a dry spring," he explains.

At T0 Mayflower was so clean Tom just applied a PGR and trace element mix. Then at T1 the crop had Ascra Xpro (bixafen+ fluopyram+ prothioconazole) with manganese and then had Univog (fenpicoxamid+ prothioconazole) at T2. "I think at T3 we'll get away with a tebuconazole or prothioconazole as it's had a robust programme so far."

Mayflower has been very clean in terms of disease. "People have driven past the field and then asked me what's in there because Mayflower's looked so good," he says. "Extase and Mayflower are on a par in terms of disease — very good and clean — but Zyatt has fallen to yellow rust, which is very interesting to see.

"Mayflower's yield potential looks very promising, so the hope is that its protein content does well as it'll be nice to see a variety with good agronomics do better in terms of N utilisation," adds Tom.

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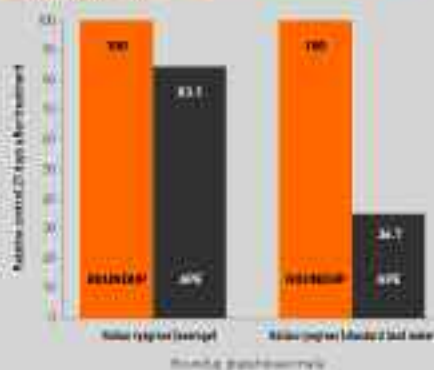
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TOP TREATMENT TIPS

- Only spray when rapeseed & grain moisture levels fall below 30%.
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- Match application rates to crop & weed burdens.
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Mayflower's disease resistance profile could well get it noticed, says George Goodwin.

► better baking loaf.

"So we're a bit gutted it got classified as a Group 2. We've got evidence that in a CBP breadmaking mix Mayflower is really suitable, but in some of the other processes it doesn't do as well, which is why it was categorised as a Group 2," he says.

The good news is that millers are becoming more flexible and pragmatic about how they use Group 2 varieties in grists, explains Andrew Bourne. "Millers can use varieties like Mayflower and KWS Extase to good effect, so this gives growers more options."

According to Andrew Creasy, Mayflower did equally well in terms of quality as Skyfall and Crusoe in Saaten Union's own trials. "It met the specifications of Group 1 with a Hagberg of 250, 13% protein and a specific weight of 76kg/hl — so from a quality point of view its equally as good."

In an effort to explore the sustainability of different varieties, Elsoms and Saaten Union undertook trials looking at the utilisation of nitrogen. "We looked at the effects of cutting back on N and we adjusted when we put it on during the growing season," explains Andrew Creasy.



Mayflower's (right) yellow rust resistance is apparent when compared with KWS Firefly (left).

"We've had one year of results so far which showed that putting 85kgN/ha in early to mid-March produced equally good results as putting the full 200kgN/ha on. We're now doing second year trials and will see more result after harvest."

Paul feels that Mayflower may have needed feeding before the other varieties. What Elsoms also noticed was that adjusting the application of N to varieties also changed the order of yield on the RL, meaning that Mayflower's yield surpassed competing varieties when less N was applied.

Early adoption

According to Andrew Bourne, the N-use efficiency trials are very topical because of the impact the cost of N is having on gross margins. "If we've a variety that consistently responds to lower rates of N, both in yield and grain quality, it's a variety we want to be looking at."

One thing Elsoms wasn't quite prepared for was how quickly Mayflower was placed onto the RL. "It went onto the list earlier than we anticipated, so we're still doing research and development work," says Paul. "But cometh the hour, cometh the variety."

"And Mayflower doesn't have the specific weight disadvantage that some of the other highly disease resistant varieties on the RL have. So it suits those perhaps wanting to sell it as a quality wheat," he adds.

One aspect of Mayflower which George advises growers to keep an eye on is its winter growth habit. "It has a low vernalisation requirement and will grow faster over winter than other conventional winter types. We'd advise sowing Mayflower from the first week of October onwards, with a latest safe sowing date of end of February. Although we know Mayflower is a strong tillering variety, we'd advise seed rate is increased by 10-15% for later drillings."

Andrew Creasy believes there's a spot in the market for Mayflower. "With all of the traits it has going for it, it's an option for those growing quality wheats who are after something different with better disease resistance than a lot of the current Group 1s.

"We know it makes a good loaf of bread from independent testing, so ultimately we hope it gets recognised as a quality wheat," he says.

Mayflower is likely suited to those with bigger cropping areas who may need more flexibility with their spray timings, according to Andrew Bourne. "It's less



Andrew Creasy notes Mayflower met the grain quality specifications of Group 1 in Saaten Union trials.

time critical to get sprays on as it's not as susceptible to diseases as other varieties, which is a great management tool.

"The variety might not be on every grower's radar yet but it's one to watch for those thinking about disease pressures, the cost of N and market dynamics," he adds.

Elsoms still feels there's a lot more to discover about Mayflower and plenty of scope for it to find its place in the market, according to Paul. "It's a variety that has found a time and a place." ■

Mayflower at a glance

Yield (% treated controls)

UK treated	97.4
UK untreated	89.6
East region treated	97.7
West region treated	97.3
North region treated	[96]

Grain Quality

Protein content (%)	11.9
Hagberg Falling Number	293.7
Specific weight (kg/hl)	78.5

Agronomics

Resistance to lodging without PGR	6.3
Straw height without PGR (cm)	89.3
Ripening (+/- Skyfall)	0

Disease resistance

Mildew	7.8
Yellow rust	8.7
Brown rust	5.7
Septoria	8.4
Eyespot	[6]@
Fusarium ear blight	5.7

Source: AHDB Recommended List, winter barley 2022/23 – [] = limited data, @ = Believed to carry the Pch1 Rendezvous resistance gene to eyespot, but this has not been verified in Recommended List tests.

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