



Fit for the Future

Yielding sustainability

While high yielding wheats might not be the obvious choice when it comes to building a resilient rotation, harnessing the power of genetics could help growers reduce both their operational and environmental costs. CPM finds out more.

By Charlotte Cunningham

Yield has long been king when it comes to variety selection, but aside from just providing large volumes of grain in the shed, careful consideration when looking at this trait could be key for achieving long-term sustainable production.

And while high yielding wheats and sustainability might not go obviously hand-in-hand, KWS's Kirsty Richards says that high yield potential is actually a proven indicator of how well a plant is able to use available nutrients, with the highest yielding varieties on the AHDB Recommended List being arguably the ones with the highest levels of nitrogen use efficiency.

"From a grower's perspective, this means looking at overall yield potential as a starting point when selecting varieties to try and build sustainability into the rotation," she says.

Resilient varieties

But high untreated yield is becoming increasingly important too, particularly for growers who are actively pursuing a more sustainable approach, adds Kirsty. "Untreated yield scores tell us more than just grain output and are often indicators of many factors such as plant strength and resilience as well as disease resistance. This gives growers the opportunity to not only grow more resilient varieties, but also to reduce inputs and labour — all of which are key components in building overall business sustainability."

From an economic perspective, senior agribusiness analyst James Webster of The Anderson Centre says varieties that excel in this department will be the backbone of future rotations amid a backdrop of continually rising energy costs and an industry drive to reduce inputs.

"It's a bit of a split picture in terms of cost at the moment," says James. "Some costs have come down — most noticeably fertiliser — but others that are more inflation linked, such as agrichemicals and fixed costs, remain high.

“ We’ve got to be more responsible with variety choice. ”



Looking at overall yield potential is a good starting point when selecting varieties to try and build sustainability into the rotation, says Kirsty Richards.

“If we look ahead to the 2024 harvest, while we’re better off than 2023, the cost of production is and will remain high so it’s really important to think about the sustainability of your rotations both from a financial context and also environmentally.”

Variety-wise, James echoes Kirsty’s sentiments and says that varieties with good untreated yields — combined with other functional traits like high disease resistance — do indeed indicate an overall more resilient type and will help provide businesses with a solid foundation.

“Varieties that are stronger on these traits allow growers to take a more integrated approach to the whole management of crop production, which may include being more flexible with costly inputs — or even reducing them. Taking advantage of inherent strengths of a variety to help limit cost bases is going to be hugely important going forward.”

But it’s not all about economic cost — resilient, high yielding varieties can be beneficial from an environmental perspective too, he adds. “We know that pesticide usage is something that policy is targeting and reducing insecticides is coming through via the Sustainable Farming Incentive. So once again, if you can work with the varieties, we can start moving in the right direction to be able to reduce some of these inputs.

“Ammonia and nitrous oxide emissions are also another key part of the target framework being produced by the Government’s Environmental Improvement Plan. Selecting for this via varietal scores enables growers to ensure they’re still able to achieve a good yield but achieving it in a more sustainable way.”

Management flexibility

From a practical perspective, these high yielding untreated types can also help bring an element of flexibility to farm management, adds James. “This could include spreading workload at times when labour availability is tight. Also, if the conditions aren’t quite right, having genetics on your side through good untreated yields may allow you to be more flexible with application timings.

“Varieties where we see all of these features working together gives them real versatility and flexibility.”

KWS technical specialist Olivia Potter picks up the conversation and concurs that Group 4 hard wheat KWS Dawsum is a good example of how high yield and fully featured agronomics can work together. “KWS Dawsum is a great benchmark for an all-round wheat that can work equally well in conventional production as well as in more regenerative systems.

“For a start, it’s got high outright yield at



From an economic perspective, resilient high performing varieties will be the backbone of future rotations amid a backdrop of continually rising energy costs and an industry drive to reduce inputs, believes James Webster.

104% of control, indicating it uses available nitrogen very efficiently. But it also has a high untreated yield at 95%, just 2% behind the highest performer in this respect — KWS Extase at 97%. This is underpinned by resistance scores of 9 for yellow rust, an 8 for mildew, 7 for brown rust and 6.4 for septoria. ▶

Awesome Dawsum

KWS Dawsum’s combination of untreated yield and strong agronomics is proving to be hugely advantageous for Lincolnshire grower, David Hoyles. “About 70% of our wheat area is for seed multiplication so quite often it’s a case of breeders coming to us which dictates variety choice. But generally, what I’m looking for on our silty soils is something with standing power, good disease resistance, and of course yield.

“Standing power is something we can manage easily with PGRs, but when it comes to disease and yield, this is where genetics is important. This is our third year growing Dawsum and what we’ve found to be particularly beneficial is its specific weight. We get quite lush crops which tiller well, and if we get poor sunlight the specific weight suffers, which means they don’t make the seed contract, or if it’s grown in our feed wheat area then we face massive deductions.

“But Dawsum gives us extra opportunity in this department and combines it with good disease resistance and it’s very high yielding, which all in all gives us a bit of extra security. It has been a difficult season so far weather-wise, so it’ll be

interesting to see how Dawsum fares in terms of its specific weight due to the low light levels we’ve had. We actually didn’t get any decent weather until the third week of June, so we’ll be pushing the power of these genetics to the max this harvest.”

David says he ran an informal Twitter poll recently to find out fellow growers’ thoughts on which of the four varieties he’s growing would likely give the highest marketable yield this season, given the pressures from poor sunlight, drought and disease pressure. “More than half — 56% — said Dawsum,” he notes.

Something else David likes about the variety is its speed to get away in the autumn. “It’s a bit slower to get moving for us, so it means we can drill at a range of slots — either early or mid — without it racing away, which is quite handy. It’s a good all-rounder really and I’ll definitely be growing it again next year.”

Giving his thoughts on the importance of untreated yield scores, David believes there’s never been a more vital time to pay attention to the numbers. “Ten years ago we could sort most



Dawsum has found a place in David Hoyle’s rotation due to its combination of high yield, good disease resistance and specific weight, which helps buy extra security even in difficult seasons.

things out with a can and the genetics in varieties weren’t as important. Now, when you look at some varieties that have had high fungicide spends, they still don’t look great which has pushed the importance of variety choice to the forefront and it’s something we’ve got to be more responsible with. Plant breeding is developing so quickly, and we’ve got so much choice now — particularly with wheats — we’re spoilt.”



Olivia Potter says that Group 4 hard wheat KWS Dawsum is a good example of how high yield and fully featured agronomics can work together.

► “Robust genetics also ensures KWS Dawsum delivers to its full potential across the rotation, regardless of heavy or light soil, early or later drilling, and whether it’s in a first or second wheat slot, with short, stiff straw further adding to its overall resilience.”

Looking at other resilient options currently on the market, there are four wheats in the KWS stable, including KWS Dawsum, which achieved scores of more than 90% for untreated yield, according to the 2023/24 RL.

KWS Extase sits top of the table with an untreated yield of 97% of control — the highest on the RL. “Extase is a Group 2 milling type which combines untreated yield with high disease resistance and the ability to be grown across a wide range of soil types and locations,” says Olivia.

“Most significantly, Extase has an

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In this series of articles, *CPM* has teamed up for the sixth year with KWS to explore how the wheat market may evolve, and profile growers set to deliver ongoing profitability.

The aim is to focus on the unique factors affecting variety performance, to optimise this and maximise return on investment. It highlights the value plant genetics can now play in variety selection as many factors are heavily influenced and even fixed by variety choice. KWS is a leading breeder of cereals,

oilseeds, sugar beet and maize.

As a family-owned business, it is truly independent and entirely focussed on promoting success through the continual improvement of varieties with higher yields, strong disease and pest resistance, and excellent grain quality. We’re committed to your future just as much as you are.



exceptional resistance to septoria with a score of 7.8. In practical terms this could allow growers to start thinking about reducing costly inputs, while still achieving good disease control, and most importantly, yield.”

Also combining high untreated yield and excellent disease resistance is KWS Palladium — a Group 2 bread-making type which boasts an overall yield score of 100%, an untreated yield of 94% and a septoria score of 7.4.

“What’s particularly good about Palladium from a sustainability perspective is that its septoria resistance has a different genetic basis from all other commercialised Group 2 varieties,” adds Olivia.

New for this year, KWS Ultimatum is another high yielding Group 2 option, she says. “Ultimatum is particularly at home in the north, with the highest yield score of 103% in the Group 2 sector, giving it yield potential similar to what’s often only achieved in high yielding feed types.”

Looking to its untreated credentials,



KWS Palladium’s septoria resistance has a different genetic basis from all other commercialised Group 2 varieties, which is positive from a sustainability perspective.

Ultimatum gleans a score of 93% and combines this with good disease resistance — particularly to fusarium (7) — and UKP approval, giving growers access to additional market opportunities, she concludes. ■

Selecting for spec weight

It’s not just tonnage in the barn — high specific weights are becoming increasingly important for resilience too. Stuart Rowley, of grain and seed merchants Mortimers, believes this should be a key trait for growers to focus on.

“You can’t change the weather, but you can mitigate against it to a certain degree by choosing a high specific weight variety,” he says. “With these, even if you lose a couple of points, you should still have something that is of very acceptable quality for virtually any purpose.

“You can get everything else right — protein content, hagberg and cleanliness — but if your wheat fails on specific weight, that’s it.”

Stuart adds that with a feed wheat, the tolerances are lower, and while a specific weight

of 69kg/hl might still be marketable, growers will take a significant financial hit. “You should be okay at 72kg/hl, but for every point below that down to 70kg/hl, you’ll probably lose £1/t and from 69kg/hl, £2/t. This could change depending on the year, but the bottom line is that you can lose a lot of money with poor specific weights.

“So, the higher the genetic potential for specific weight, the more likely you are to end up with something that is marketable, even in a bad year.”

This is where a variety like KWS Dawsum could be advantageous again, adds Kirsty. “Dawsum has a score of 80kg/hl for specific weight — the second highest on the RL, just behind Costello. While specific weight isn’t always the first priority when selecting hard feed types, having a variety



As well as yield and good agronomics, varieties with high specific weights can also help protect growers from risk.

that ticks all the boxes and offers this as a bonus could help growers take advantage of the current market outlook.”

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