

PRODUCTIVITY² SQUARED



Maximum Margin, Minimum Compromise

The KWS approach to sustainable, high-output farming

In this issue



PRODUCTIVITY IN MOTION

World class quality standards, long-term customer focus.

03



SUPER SEVEN WINTER WHEATS

Seven wheats offering maximum yield and market-ready resilience.

04



KWS HYBRID BARLEY GOING STRONG

New hybrid barley is the RL's highest yielder.

09



Ben Bishop
Head of KWS UK

KWS is committed to developing varieties that boost grower productivity whilst also meeting the challenges of an ever-changing agricultural and food supply landscape.

Every year we invest nearly 20% of our revenue back into R&D and across our business we employ over 1800 people in breeding and technical development areas to continually push the potential of our varieties forward.

In recent times we have delivered yield improvements of 1 - 2% every year in many crops as well as introducing a range of disease resistance traits and other beneficial properties to make our varieties as resilient as possible.

Such developments are not just restricted to cereals but extend across the full range of KWS crops and varieties.

While we are hugely proud of key UK successes, such as the 13 new additions added to the AHDB 2025/26 RL including eight new wheat varieties and four new barleys covering all Groups, they are only a part of the story.

Worldwide KWS had 535 new varieties, covering all crop types approved last year and it's an engine that shows no sign of slowing down.

These achievements are a testament to the expertise of KWS breeders and technical staff, but delivering their full value of these developments to our customers is a shared responsibility across the entire KWS team.

This newsletter highlights how these innovations can enhance productivity on your farm - whether through higher yields, more dependable crops, or expanded marketing opportunities. We hope you enjoy it.

Contents

- 03** Productivity in Motion
- 04** Super Seven Wheats
- 05** The UK's new protein banker
- 06** A new trio of Group 2s
- 07** The UK's highest yielding wheat
- 08** Passing the barley baton
- 09** KWS hybrid barley going strong
- 10** Breaking the mould in OSR
- 11** Delivering innovation in peas, rye and oats
- 12** How maize has become a super crop
- 13** Arable maize growing in popularity
- 14** Tackling sugar beet issues head on

Productivity in Motion



Mercedes-Benz World, showcasing the company's focus on R&D driven technical excellence, world class quality standards and long-term customer focus, formed the ideal location for KWS' 2025 'Productivity in Motion' conference.

Few sectors better embody the need to redefine themselves for future sustainability and long-term customer solutions than the automotive industry.

In that sector, few companies represent innovation, quality, and brand loyalty as strongly as Mercedes-Benz, says KWS UK Marketing Manager Andy McGrath.

"There is a lot to be learned from how world-class companies are using collaboration, R&D and sheer passion to achieve this and many parallels across all industry sectors.

"On the input side of the equation, factors such as strong disease resistance, high nitrogen use efficiency, low lodging risk and robust genetic resilience to a range of different stressors, can all help reduce input costs and management time.

"Varieties that can combine top 10% performance with respect to both these sides of the productivity equation are very much the winners of the future and that is precisely where KWS' breeding energy is focused."

The 'Productivity in Motion' event focused very much on the resources and energy needed to produce such 'winners' across all crop types, explains KWS UK Head of Product Management and Agroservice Kate Cobbold.

"These are challenging times for all in the agricultural and food supply sector and we wanted to reinforce our conviction that top class genetics lie absolutely at the heart of the sustainable production needed in the future.

"This is the case whether it is a more regenerative approach being adopted or a system based on maximising yields from all resources.

"The fact that seven out of the ten new winter wheat additions on the latest 2025/26 RL are KWS varieties in top spot across all Groups more than underlines we have the resources and commitment to live up to this promise."

"Productivity means different things to different people. Fundamentally, from a grower's point of view, it means getting the most out from the most efficient use of resources."



"From KWS' perspective, we know ongoing development of the best crop genetics is fundamental to our own success, but equally these have to deliver on-farm from a productivity point of view.

"Productivity means different things to different people. Fundamentally, from a grower's point of view, it means getting the most out from the most efficient use of resources.

"So, on the output side, you have factors such as outright yield, crop quality and fit to market requirements plus the ability of a variety to attract premium payments where possible, that can all maximise revenue.

Key crop productivity pointers

- Think of maximising productivity as an equation - it's not all about yield
- The highest margins are achieved when yield/quality is maximised from the most efficient use of inputs
- Genetic potential is absolutely the main determining factor in achieving this
- Learn about local markets and what premiums can boost margins further
- Look for consistency of varietal performance across the years

Super Seven Wheats

KWS' new Productivity² initiative, taking crop performance to the next level by focusing not only on yield, but gross margin and real-world return, is more than borne out by KWS' new 'Super Seven' wheats.



Olivia Bacon
Product Manager
Wheat

Seven out of the ten new winter wheat additions to the AHDB 2025/26 Recommended List (RL) come from KWS, setting new standards for yield, quality and resilience across all four Groups.

According to Olivia Bacon, Product Manager for Wheat at KWS UK, the line-up represents a major leap forward in combining high yields, agronomic strength and market flexibility.

"In Group 1, for example, KWS Vibe is causing quite a stir and we believe the variety is going to be the new benchmark for protein production in the UK," she says.

Meanwhile, KWS Equipe stands out for its untreated yield of 92% – the highest on the list.

"It has all the benefits of Extase and more, building on its predecessor's proven resilience to make KWS Equipe a strong agronomic tool across multiple growing scenarios.

"KWS Newbie rounds out the trio with robust performance – yielding 103% of controls – and a 9 for yellow rust that will stand it in good stead across the country."

Turning to Group 3, Olivia describes KWS Solitaire and KWS Flute as 'disrupters', offering exceptional yield and multi-market potential.

"KWS Solitaire is the top Group 3 variety at 107%, with great performance in all regions and added bonuses like distilling potential and OWBM resistance.

"KWS Flute also impresses with its 108% yield in the North of England and excellent early sowing performance."

Finally, KWS Scope tops Group 4 – and the entire RL – with a yield of 108% nationally and 111% in the West, she says.

"It's a true yield monster and a perfect complement to proven performers like KWS Dawsum, with equally strong agronomics and high grain quality."

Productivity² is all about balancing output with input costs, explains Olivia.

"Robust, resilient varieties that need less intervention deliver more to the bottom line. It's a philosophy reflected in all seven new winter wheats on the 2025/26 RL."

From the protein-packing KWS Vibe to yield leaders like Scope and Arnie, the new line-up offers growers choice, flexibility and wheat that truly meets the evolving production demands of UK farming."

The UK's new protein banker



With a compelling combination of yield, protein content and agronomic strength, KWS Vibe is raising the bar for Group 1 breadmaking wheats and restoring confidence in homegrown milling varieties.

KWS Vibe is without doubt the new 'protein banker' for the UK, says Olivia Bacon, Product Manager for Wheat at KWS.

"It consistently hits the required milling spec, with a protein content of 13.2%, Hagberg of 283 and specific weight of 79.1kg/hl – all backed by excellent disease resistance and regional performance."

In commercial-scale baking trials, KWS Vibe has outperformed market leaders like KWS Zyatt.

Loaf volume, crumb colour and pastry layering all surpassed expectations, with the Allied Technical Centre confirming its superior quality across a wide range of baking applications.



Joe Brennan
UK Flour Millers

Joe Brennan from UK Flour Millers welcomes KWS' Vibe's consistency.

"Group 1 wheats like KWS Vibe are the backbone of UK bread flour. Vibe performed very well in all tests and brings the reliability millers and industrial bakeries require."

Mark Means, Farmers Weekly 2024 Farmer of the Year has been impressed by KWS Vibe's nitrogen use efficiency (NUE) and reliable protein production.

"Based on actual results achieved on my farm, KWS Vibe produces more protein per kilogram of Nitrogen applied than other varieties," he says.

"KWS Vibe produced over 5kg of protein per kilogram of nitrogen applied – more than any other variety I tested, including Zyatt and Crusoe.

He describes KWS Vibe as fitting perfectly into his sustainable, high-performing rotation. "It's short, stiff and clean with excellent disease resistance, following KWS Palladium and KWS Zyatt perfectly to harvest.

"I drilled it on 28th September after peas, and despite the early timing, there was no yellow rust, and the crop yielded up to 11.5t/ha at 12.3–13.6% protein."

With declining Group 1 production in the UK and increased demand for consistent domestic milling wheats, KWS Vibe is positioned as a vital solution.

As Olivia Bacon puts it: "It's about bringing confidence back to Group 1 - KWS Vibe gives growers and millers a reason to believe again."



Mark Means
Farmers
Weekly 2024
Farmer of
the Year

"Based on actual results achieved on my farm, KWS Vibe produces more protein per kilogram of Nitrogen applied than other varieties."

Mark Means
Farmers Weekly 2024 Farmer of the Year

KWS VIBE

- Group 1 milling wheat with 13.2% protein and RL yield of 98%
- Highest protein production per kg N among current Group 1s
- HFN 283; specific weight 79.1kg/hl; 8 for yellow rust; 6.6 for septoria
- Strong regional performance: 100% in the West, 99% in the North
- Excels as a second cereal and early-drilled option
- Approved by Allied Technical Centre and UK Flour Millers
- Proven results in Agrii and NIAB trials for consistency and baking quality
- Delivers top-end loaf quality with reduced input risk

KEY
FEATURES



A new trio of Group 2s

Group 2 has been redefined in recent years with varieties like KWS Extase and KWS Palladium combining high yield potential with milling specification and strong agronomics giving them real-world consistency in the field.



Ryan Hyden
National Sales Manager

Both varieties are still hugely popular but as the demand for high-quality Group 2 winter wheat increases there's a new generation of varieties coming through to give growers even greater choice and as close a match as possible to their precise growing and market opportunities.

New RL introductions KWS Arnie, KWS Equipe, and KWS Newbie now top the Group 2 leaderboard with each variety having its own unique set of characteristics, says Ryan Hyden, National Sales Manager at KWS.

“The introduction of these newer varieties is reshaping the landscape of Group 2 wheats, offering farmers more options for meeting quality requirements and improving yield.”

“New Group 2 leader, KWS Arnie, boasts impressive figures with a yield some 4% points ahead of KWS Extase at 106% of control, making it comparable to the very best Group 4s, together with the additional benefits of 7s for both yellow rust and *septoria* resistance.

“In second spot, KWS Equipe has delivered 103% of treated controls plus it has the highest untreated yield of all varieties on the new RL at 92% while third place KWS Newbie delivers excellent first and second wheat yields, particularly in the North.

“The introduction of these newer varieties is reshaping the landscape of Group 2 wheats, offering farmers more options for meeting quality requirements and improving yield.”

Impressive results

One such business already seeing the benefits of the new KWS Group 2 offerings is Heathcote Farms in Bedfordshire.

One of the largest farming operations in the county, they grow a mix of first and second wheats, with a focus on varieties that offer high protein content and good disease resistance.

According to Matt Fuller, the farms arable and trials manager, selecting the right varieties is essential for maintaining soil health, achieving high yields, and spreading the workload through different harvest periods.

“We have had very good success with Group 2s and were one of the first farms in the country to grow KWS Extase in 2017, the year before it first appeared on the Recommended List.

“Subsequently, it has become a key variety and provides a significant comfort factor because of its inherent genetic resistance.”

This season, 100ha of KWS Extase is being grown alongside 50ha of KWS Equipe, a variety that has shown promise as a second wheat with good biomass production. KWS Arnie is also being grown in trials.

Expanding area

The exceptionally wet conditions in October, when 150mm fell in one weekend, meant that most of Heathcote Farms' second wheats this season went in during the second week of November, but even when drilled as second wheats late in October both KWS Extase and KWS Equipe produced significant biomass, Matt explains.

“KWS Extase and KWS Equipe both look very promising in our situation, have good *Septoria* resistance and if they can achieve 12.5% protein, will meet the requirements of a mix of end-use customers.

“KWS Arnie performed well with very little yield drop in a second cereal situation, so this season we have 5ha of the variety.

“We were pleased with how KWS Arnie established after it was drilled on 14 November at 400/m², and with how well and clean it has looked through the spring. Its fast-tillering habit helping to smother any grassweeds and reduce competition with the crop.

“We expect it to do well again this season and if that is the case we are likely to have a full 100ha block next season.”

The UK's highest yielding wheat

The arrival of KWS Scope on the latest RL has added renewed momentum to the Group 4 hard wheat sector as growers prioritise high-yielding, reliable varieties in a shifting marketing environment.

Topping the 2025/26 AHDB RL for yield, KWS Scope joins KWS Dawsum as a perfect choice for growers looking to maximise output from available resources.

According to James Webster-Rusk, Senior Agribusiness Analyst at The Andersons Centre, productivity is becoming the central metric by which varieties are now judged.

“In the era we're in now, and given the direction of farm support, maximising productivity at least cost is essential,” he says.

“At a time of extreme uncertainty when everything is up in the air, exact timelines on farm announcements are unknown and wider policy changes must be taken into account, growers will increasingly focus on varieties which are reliable and consistent.”

High margin potential

As such, growers are increasingly seeking varieties that combine high treated and untreated yields with efficient growing costs, he believes.

“If one variety will produce a higher yield using the same or lower inputs than a less efficient variety that must be beneficial.

“Varieties with high yield potential, good disease resistance, consistency from season to season and, in some cases, specific attributes such as Orange Wheat Blossom Midge resistance, are now cornerstones for growers.”

At the other side of the supply chain, end-users require consistency of supply and quality from season to season, he stresses.

“As a next-generation hard Group 4 wheat, KWS Scope should work well for growers who are looking for a classic ‘barn filler’.

“It is the highest yielding variety on the current Recommended List, has a strong set of agronomic characteristics which will provide another string to their bow, while its consistent performance across widely differing seasons will provide confidence.

“This is particularly challenging during years with high weather stress, where variety traits such as specific weight are really tested. In 2025, during the period from January to April this year we had less rain than in the same period of the very dry year of 1976, making 2025 the driest since 1964 for the same months.

“Traits such as specific weight are really tested during high weather stress years. That's where a variety like KWS Scope can offer confidence.”

Added assurance

KWS UK's Ryan Hyden agrees saying KWS standout agronomics, robust disease resistance and consistent performance across contrasting seasons offer grower's real reassurance in uncertain times.

“KWS Scope builds on the success of its highly popular predecessor, KWS Dawsum, which has long been a reliable choice in the Group 4 market due to its consistent yield and dependable performance.

“While KWS Scope offers a more contemporary set of traits, the continued popularity of KWS Dawsum highlights the strength and effectiveness of KWS' breeding program in delivering high-performance wheat varieties.

“High-yielding, resilient varieties like KWS Scope and KWS Dawsum are well-suited to today's economic and environmental pressures and we're confident they will be the foundation of high output wheat production in the future.

“At a time when farm policy remains unpredictable, reliable varieties that consistently deliver are more important than ever and KWS Scope fits the bill perfectly.”

AT A GLANCE!

KWS SCOPE

- Highest yielding variety on the Recommended List
- Hard Group 4 feed wheat with new genetics for UK grower
- Ideal wheat for growers who like short and stiff types like Graham

High yields are in sight!



Passing the barley baton

For years, KWS has set the standard in two-row winter barley and it is showing no signs of slowing down, with an exciting new contender strengthening the pipeline.



Kate Cobbold
Head of Product Management & Agroservice

Winter barley continues to play a vital role in many farm rotations with the promise of early harvesting, diverse marketing opportunities and flexible drilling options for subsequent crops, adding to its appeal.

It's also a valuable home-grown source of grain and straw and a great way of spreading workloads across the season, particularly in the summer, says KWS UK Head of Product Management and Agroservice Kate Cobbold.

"The key to a successful barley crop lies in a combination of yield, standing power, and specific weight. KWS Tardis continues to achieve all three and why it remains as the first choice for many growers across the country.

"With the growing conditions we now see, something that grows strongly, stands through to harvest and delivers a good specific weight to access the best marketing opportunities is essential."

One of KWS Tardis' other key strengths has also been its yield potential, she explains.

"KWS Tardis boasts yields of 103% of controls on the latest RL, which still puts it in touching distance of six-row varieties, particularly on heavy land.

"Its super stiff straw, early maturity, and strong disease resistance package, including 6s for Rhynchosporium and net blotch, have also contributed to its long-lasting popularity."

New high yielding varieties

Backed by its proven KWS Tardis parentage, KWS Valencis is now poised to build on this legacy as the highest-yielding conventional 2-row barley on the RL at 106% of controls, she believes.

"It's demonstrated consistent performance across the UK and in different trialling years, with yields varying by no more than 1% over the past three seasons. It also demonstrates exceptional adaptability across diverse farm conditions.

"KWS Valencis also has the joint second highest untreated yield on the RL, at 91% of controls, which gives it real versatility in a number of production systems.

"Add in very good grain quality plus strong light soil performance and you can see why KWS Valencis offers growers a versatile, resilient, and high-performing potential successor to KWS Tardis.

"Together, KWS Tardis and KWS Valencis represent a formidable duo in the winter barley landscape, proof that conventional barley is thriving."

KWS Heraclis is also added to the RL for the North, where it achieves a yield of [108%] of control.

"KWS Heraclis is a great partner to KWS Tardis and KWS Valencis, with the same good combination of untreated yield, field performance and grain quality with a secure field package, thanks to its super stiff straw to minimise lodging," Kate Cobbold adds.

"The variety actually has one of the lowest brackling percentages on the RL, minimising losses due to damaged stems, ultimately giving growers reassurance at harvest."

TOP BARLEY OPTIONS

AT A GLANCE!



KWS Tardis

- Excellent yield consistency over different trialling years
- Very good grain quality with a specific weight of 70.1kg/hl
- Stiff straw with twin 8s for resistance to lodging



KWS Valencis

- Highest-yielding conventional winter barley on the Recommended List
- Excellent yield consistency over different trialling years
- Very good all round disease resistance profile



KWS Heraclis

- Very good yield potential, especially in the north
- Good resistance to lodging and low levels of brackling
- Excellent untreated yield

KWS hybrid barley going strong

KWS' new hybrid barley is the now the RL's highest yielder for all barley varieties, but there's much more to this newcomer than just output potential.

Inys claims the top yield position in the 2025/26 RL for winter barley, delivering an impressive yield at 109% of the control varieties. Its strong disease package and a range of standout features further enhance its appeal to growers.

A step up in yield from all other current hybrid barley varieties, Inys is the result of a long standing commitment to hybrid breeding across a range of crops with barley the latest addition to the portfolio, Kate Cobbold explains.

"Launching hybrid barley represents a major milestone for us," she says. "Hybrid barley has the potential to deliver higher yields and greater resilience than its conventional counterparts plus it has a very different plant structure.

"With deeper roots for improved nutrient and moisture uptake, stronger anchorage and increased biomass, both above and below ground, hybrid barley can compete against and therefore suppress grassweeds.

"Inys is the perfect example of a high performance hybrid barley showing all these defining features, but in addition, it has other exciting attributes to help growers get the most from it.

"It's a variety with a very good all-

round disease profile with excellent straw strength and the lowest level of brackling of all hybrid barley varieties on the RL. It's also the only hybrid barley on the RL to have twin 8s for lodging both with and without PGR.

"It's genuinely a lower risk, higher reward variety for growers and we have a strong pipeline of similar, high performing varieties now waiting in the wings at various stages in the UK testing system."

Important worldwide crop

The investment in breeding hybrid barley varieties for the future does not, however, detract from the company's commitment to conventional barley, she says.

"Barley is one of the most important cereals crops worldwide and KWS has a long history of successfully breeding exceptional varieties as the conventional varieties like KWS Tardis and now KWS Valencis and KWS Heraclis prove.

"In fact, we are the market leader in conventional barley in the UK and France, but the addition of a hybrid range now adds further depth to the KWS barley portfolio.

"There is without a doubt a place for both conventional and hybrid barley varieties on farm.

"Depending on the end market and local growing conditions, farmers now have options for finding the most appropriate barley solution and that is the real benefit of being able to offer both hybrid and conventional options."



Trial results on Inys

Trials up and down the country are showing Inys to have some specific advantages over its competitors, says Kate Cobbold.

"These trials are not just confirming Inys' definite yield advantage over the leading hybrids currently available in the UK, but they are also showing strong yield stability over different growing seasons, plus we're noting thicker plant stands and deeper rooting, which is exactly what we were hoping to see.

"There are indications that Inys also has a much more vigorous growing habit in the early stages of development with up to 40% greater ground cover being seen in some instances."

Breaking the mould in OSR



As with its venture into hybrid barley, KWS is now investing its significant breeding resources into a new generation of high performing hybrid oilseed rape varieties with class-leading trait sets.



Rory Hannam
Product
Manager
Oats, OSR,
Peas, Rye

KWS' new RL listed oilseed rape Hinsta ticks all the boxes when it comes to helping growers produce consistently high yields across a range of different growing conditions, believes KWS UK Product Manager for Oilseed Rape, Oats, Peas and Rye Rory Hannam.

Looking at the numbers behind Hinsta reveals a lot about the variety, but it is only when you dig beneath the headlines that its true strengths stand out, he says.

"Hinsta's standout figures of 106% for gross margin and 46.1% for oil content—are certainly impressive, but the variety offers more than just strong yield potential. It delivers the resilience and security OSR growers need in a modern hybrid.

"In the 2025/26 AHDB Recommended List, for example, Hinsta is the highest yielding oilseed rape variety specifically recommended for the East/West region that combines what KWS call the built-in traits of TuYV protection and pod shatter resistance."

Pod shatter is an absolute necessity these days as the weather is so unpredictable and we are seeing more extremes in weather patterns, he points out.

"Having this trait built in offers protection against pod shatter to help minimise potential losses when the crop is at its most valuable and after all the hard work has been put in throughout the season.

"It's the same with TuYV protection too. With growers using less insecticide either for SFI options or for other environmental reasons, such as trying to increase natural predators, if there was a bad aphid infestation in the autumn, having the trait in a variety offers the most reliable protection against infection.

"Strong varietal resistance to TuYV is the best way to mitigate against this growing threat.

"The RL also shows that Hinsta has intermediate resistance to verticillium, but our own private trial data suggests an even stronger performance. In inoculated pot tests

conducted over multiple years, Hinsta performed on par with a variety officially classified as partially resistant.

"Hinsta also has a 7 for Light Leaf Spot (LLS) which again gives it ample protection against this disease which, although largely confined to the North of the country a few years ago, is now a problem in many parts of the country."



Up and coming oilseed rape varieties

KWS is actively addressing the challenges associated with oilseed rape through two breeding programs for maritime and continental regions: one in Mons-en-Pévèle in northern France and the other in Einbeck in Germany. We aim to develop varieties that are more resistant to disease and pests, and have higher yields.

KWS has one hybrid variety currently undergoing AHDB trials for the 2025 harvest:

KWS Domingos - Resown in the East/West only with high gross output and a strong disease package. KWS Domingos has the built-in traits we select varieties for, with both pod shatter resistance and TuYV resistance.

Delivering innovation in peas, rye and oats

KWS pea, hybrid rye and oat varieties combine agronomic excellence with strong market potential, offering growers robust yield performance, improved disease resistance and enhanced crop resilience.

Whether the goal is to diversify rotations with protein-rich pulses or improve returns through sustainable cereal options, KWS pea, hybrid rye and oat varieties have been developed to support reliable, efficient crop production, says the company's Rory Hannam.

"KWS Gotham boasts a yield of 107% and a notable protein content of 22.4%, complemented by robust disease resistance and a thousand seed weight of 306g.

"End users have commented on samples of this variety, notably the large, round uniform seeds which allows the variety to be placed across multiple markets, giving growers confidence when choosing the grow KWS Gotham.

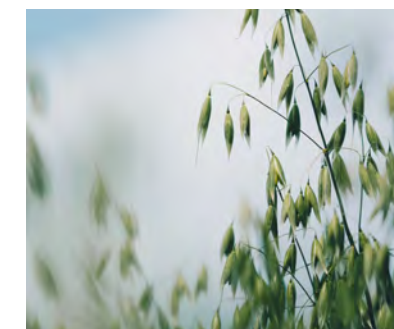
"KWS Bram, a yellow pea, leads the 2025 PGRO Descriptive List with an impressive 118% yield, he adds. Across the last three years KWS Bram has shown to provide high yields, showing consistency no matter what the season.

"Combining high productivity with a protein content of 21.8%, KWS Bram also offers resistance to pea wilt and a downy mildew rating of 6."

Hybrid rye benefits

KWS's hybrid rye portfolio also provides growers with some valuable additions to modern rotations, combining high yields with agronomic resilience, Rory Hannam points out.

"KWS Emphor is the latest rye addition, delivering exceptional grain and straw yields alongside features such as strong brown rust resistance, excellent drought tolerance, and enhanced ergot resistance through KWS' PollenPLUS® technology.



requirements, reduced fungicide needs and the ability to thrive in challenging environments, making them valuable additions to crop rotations."

High-performing, consistent oat variety

Spring oat variety WPB Isabel has established itself as the UK's most planted spring oat in recent years and for good reason, says Rory Hannam.

"It's a variety that ticks all the boxes for the grower and the end-user. Tried and tested over the past four contrasting seasons, Isabel has a very good combination of yield, high kernel content, the highest specific weight on the RL and low screenings.

"Isabel serves as the control variety on the 2025 AHDB Recommended List, highlighting its role as the benchmark for UK winter oats and reflecting its proven performance, reliability, and acceptance by growers and end users across the country.

"With its balance of productivity, quality, and agronomic reliability, WPB Isabel is an excellent choice for growers aiming to maximise output and sustainability in their oat rotations."

"KWS Tayo is a proven PollenPLUS® hybrid known for its excellent stem stiffness and top harvest index, driving superior grain yields. Its all-round versatility makes it suitable for grain and wholecrop markets.

"KWS Serafino remains a reliable choice for growers, offering solid yields and excellent grain quality. It is characterised by high ergot resistance, strong drought tolerance and stiff straw, ensuring dependable performance across diverse conditions.

"Collectively, these hybrid rye varieties offer UK growers sustainable options with lower nitrogen



How maize has become a super crop

Maize continues to present UK growers with a range of opportunities across livestock feed, grain production and biogas, now made more accessible than ever thanks to the latest advances in breeding.



Andrew Cook
Product Manager
Maize

With a dedicated breeding programme for northern Europe and the UK, KWS continues to produce adaptable maize varieties well suited to coping with the ever-changing climate while delivering significant advances in yield and quality, says KWS UK Maize Product Manager Andrew Cook.

"Between 2005 and 2023, average dry matter yields of KWS maize varieties improved by 25.8% and it's a rate of improvement we are very much focused on maintaining," he points out.

"In 2005, the average dry matter yield of our varieties with a FAO maturity rating of less than 170 was 15.9t/ha and by 2023 that had risen to 20.0t/ha with starch yields rising by 38.8% from 5.23t/ha to 7.26t/ha.

"At the same time breeders have made major strides forward in developing varieties with ever lower FAO ratings that allow them to reach full maturity and feeding quality, with optimum yields, in much shorter growing seasons with less heat units available.

"FAO numbers serve as a guide to crop maturity with the lower the FAO, the fewer days required to reach maturity.

"Lower FAO varieties also have greater levels of resilience and resistance to abiotic stresses than previous maize options which makes them more able to cope with the wider range of growing conditions now commonly experienced, particularly in more northerly and exposed areas.

"Although significant strides forward have been made with lower FAO varieties in recent years, the KWS maize breeding programme remains focused on a range of FAO and market options for growers.

"All in all, such breeding developments open up an ever growing range of possible end uses for KWS varieties including forage, biogas and the increasingly important grain maize production."

Game changers

As the dry matter increases suggest, genetic gains in maize have been in the region of 1.3% to 2.0% a year and this is a trend likely to continue into the future, he says.

"For many growers who have previously dismissed maize production because of their unfavourable location, the combination of these new generation early varieties and the added production they now offer is a game changer.

"With maize yields increasing by about 1t/ha DM every 10 years or so, the performance of these new generation of ultra early varieties is

not too far behind the highest yielders now.

"Such gains are exemplified by the latest varieties such as the early variety KWS REO (FAO 170), which is a highly consistent performer across all sites and suitable for multi-use production, and the slightly earlier maturing KWS PORTABELLO (FAO160/70) which features very high early vigour to encourage rapid establishment.

"Then there's the later maturing KWS ZIMO (FAO 190) which delivers high dry matter yields as a maincrop and is suitable for both ruminant feeding and AD use. Again, its excellent early vigour provides rapid establishment and promotes a longer growing season.

"AGROLINO (FAO 200) is another great example of maize productivity in action with its suitability for favourable sites enabling it to deliver heavy yields for both forage and biogas segments where a long growing season is available."



Arable maize growing in popularity

Better genetics, greater knowledge and improved management techniques have the potential for maize to breakout of its traditional livestock home and become a mainstream arable player, Andrew Cook believes.

"Maize is certainly a crop that stacks up well against more conventional spring options, with many arable producers reporting strong gross margins and a range of associated benefits.

"Significant reductions in nitrogen use, low-input agronomy and soil improvement opportunities are just some of the appeal and managed properly, maize can bring a welcome diversity to arable rotations."

Maize seldom requires the energy-intensive cultivations required by many other crops, either, he adds.

"If you have a relatively well-structured soil, as a general rule you don't need to subsoil or plough before drilling which represents a considerable saving on machinery and diesel costs compared with other crops.

"Although maize likes to put deep roots down and does not do well in compacted soils, modern thinking is to deal with such areas individually rather than carry out wholesale heavy duty cultivation."

Growing market opportunities

With regard to marketing opportunities for maize in the arable rotation, there's a wider range than ever, he stresses.

"If you're located close to a dairy farm, beef producer or AD plant there could be a local market for forage maize, but there is growing interest in growing maize as a grain crop too.

"If you are growing maize for grain, it is important to load things in your favour to ensure you have a crop that is going to get to harvest and that means looking at the best site, the right crop



establishment method and the most appropriate varieties.

"You're going to be harvesting later than forage maize because of the time needed for the grain to dry down as much as possible, so you need to plan things as much as possible around achieving this."

AD sector on the rise

Renewed growth in the AD sector is also fuelling growing interest in maize as an arable crop.

According to Anaerobic Digestion and Bioresources Association (ADBA) chairman Chris Huhne, Global growth trajectory for the sector is between 8% a year and 22% a year which when translated into the UK situation produces some startling figures.

"Even if we grow in the UK at the lowest projected growth rate of the International Energy Authority (IEA) for the world as a whole, that would mean an extra 500 AD plants in the UK by 2030," he points out. "If we grow at the higher rate, we'd be looking at an extra 2,000.

"At the end of 2023, the UK had about 723 plants so this is a substantive projected increase and even on the lowest IEA predictions, the industry would overtake the nuclear sector in producing energy during the 2030's."

New techniques hold promise

As maize becomes more mainstream, adoption of techniques and thinking largely associated with conventional cereal crop production are being shown to deliver significant benefits in the crop, says maize growers association (MGA) agronomist Jon Myhill.

"Strip tillage, for example, is growing rapidly in arable production with many growers encouraged by its ability to save time, money and fuel alongside significant improvements in soil quality and other environmental benefits.

"It's a minimum cultivation technique where narrow strips of soil are cultivated with the ground between these left undisturbed and the seed drilled straight into the strips with crops residues from the previous crop left in place.

"Less disturbance helps the soil maintain its structure making it less vulnerable to erosion and this also helps build soil organic matter and carbon."

There's a growing appreciation of the need to improve the understanding of nitrogen utilisation efficiency (NUE) in the crop with trials carried out by the MGA underlining the benefits of late applied foliar nitrogen, he adds.

"Increasing nitrogen has generally been shown to deliver a yield increase and improvements in feeding quality including higher dry matter, energy content and protein levels. Late applied foliar nitrogen, in particular has shown a significant yield boost."



Tackling sugar beet issues head on

KWS continues to push the boundaries with the development of genetic traits and technologies to boost the performance and resilience of sugar beet production.



Martin Brown
Product Manager
Beet

While improving yields continues to be a key objective for KWS sugar beet breeders, developing the characteristics that will help protect the crop in the increasingly challenging growing conditions now experienced is a key priority, too.

Growers need the reassurance that varieties will perform consistently across the years and deliver the required yields and margins, but as a major food ingredient for the UK food supply industry, a reliable and uninterrupted supply of sugar is essential, says KWS UK Beet Product Manager Martin Brown.

“The challenge is trying to keep one step ahead as weather patterns change, diseases develop and other threats come to the fore,” he explains.

“Historically, it takes ten years of selection effort to bring a new sugar beet variety to market, which adds to the pressure, but KWS is now developing innovative breeding technologies that could potentially shorten the timeline by two to three years.

Recent breeding successes include CONVISO® SMART and GENEROSA KWS which provide significant benefits with regard to weed control and tolerance to Beet Mild Yellowing Virus (BMV) respectively, with CR+ now offering growers vastly improved tolerance to Cercospora, he points out.

“Cercospora is by far the most destructive disease currently affecting sugar beet, reducing yield by up to 50%. Furthermore, Cercospora leads to reduced processing quality of roots which, in turn, reduces overall productivity.

“CR+ offers a means for growers to get back in control and has delivered huge success, particularly in high risk areas, across Europe for several years.”

With high treated and untreated yields on the 2026 BBRO RL and the first variety in the UK to feature the new CR+ Cercospora protection, CHYMA KWS has attracted real interest and curiosity in its launch year, he points out.

“By any standards, CHYMA KWS is a hugely attractive variety combining top yields, high sugar content and an excellent disease package, including built-in Cercospora protection, offering unrivalled protection against this devastating disease.

“It has excellent yields on the new BBRO RL of 99.4% adjusted tonnes and a sugar content of 16.6%. With an eye-catching untreated yield of 103% as a result of its exemplary disease protection, it is the cleanest variety growers can choose for a second year running!

“The sum of its ratings for rust, powdery mildew and Cercospora are the highest seen in RL trials at 21.4 out of a possible 27. With no obvious weakness in its leaf disease scores CHYMA KWS is a great option for later lifting, too.”

Achieving this level of yield with such a strong agronomic package is a real achievement for a variety with a trait new to the market, Martin Brown stresses.



“Often with beet varieties the introduction of new traits has meant these ‘novel varieties’ are not on par with the elites and have a significant yield lag, however CHYMA KWS bucks this trend.

“KWS UK Agroservice replicated trials from 2023 and 2024 focused on utilising the performance of CHYMA KWS. The trials provided different disease pressure scenarios and fungicide programmes, highlighting the benefits of using fungicides with the cleanest variety available.

“Yield responses from across all the treatments with fungicides in the two seasons showed an impressive average benefit of 8.3 adjusted t/ha. With current sugar beet prices this gives a margin increase of £275/ha.”

CONVISO® SMART goes from strength to strength

CONVISO® SMART technology took over 20 years to develop in a partnership between KWS and Bayer. Now in its 5th commercial year, its popularity continues to grow.

“CONVISO® SMART consists of SMART KWS sugar beet varieties, specifically bred for tolerance to the dedicated Bayer herbicide, CONVISO® ONE.

“Together, they provide superior control of a broad spectrum of grass and broadleaf weeds, including those that are particularly challenging to manage with conventional methods.

“By reducing the need for multiple herbicide applications, CONVISO® SMART streamlines weed management and improves production efficiency.”

Why Virus Yellows tolerance is increasingly important

Historically, Virus Yellows is one of the most important viruses that has affected sugar beet and has caused severe yield losses over the years and, in some cases, forced many growers to stop cultivation completely, Martin Brown explains.

“The disease can cause up to 50% yield losses reducing the photosynthetic area of the leaves and impacting the yield and the sugar content of the beets.

“Tolerance to Virus Yellows is also a key area KWS sugar beet breeders have been focused on in recent years with the addition of the variety GENEROSA KWS a major milestone in its development.

“GENEROSA KWS offers a significant improvement in yield performance over our first BMV tolerant variety MARUSHCA KWS and represents a further step towards in decreasing the growing threat of virus yellows.

“The breeding programme is trying to find solutions to all three Virus strains: Yellows, Mild and Chlorosis. Currently our success is with BMV tolerance, by no means are the other two strains being overlooked.

“With increasingly mild winters and reduced use of insecticides to control the aphid vectors, as well as the occurrence of insecticide resistance in some aphid populations, Virus Yellows is very much top of the agenda again.”

The KWS Fab Four



CHYMA KWS is an exciting introduction for 2025. This is the first variety into the UK to have our CR+ trait. This offers unrivalled protection to the devastating disease Cercospora.



SMART NELDA KWS is the first variety on the market to combine CONVISO® SMART technology with tolerance to Beet Cyst Nematode.



JOSEPHINA KWS is a classical variety with a very high sugar percentage. It also offers the lowest early-sown bolters of all varieties on the BBRO Recommend List.



DAPHNA has delivered excellent yields in both RL trials and more importantly, on farms for nearly ten years. DAPHNA has again provided Beet Cyst Nematode (BCN) tolerance whilst offering very competitive yields.

KWS also offers a range of high dry matter energy and feed beet varieties for livestock feeding and biogas generation.

All can be lifted by sugar beet harvesting equipment and are ideal for intensive feeding systems where they can be fed fresh as chopped beet or ensiled prior to feeding.

Our energy beet varieties are specially bred to provide clean roots with low dirt tare, exceptional yields and high methane and energy output per hectare. All combine high dry matter yields and superior agronomic traits. We will soon be launching our range of high yielding, lower dry matter fodder beets. These modern lower dry matter varieties will be able to be grazed in-situ. They will offer competitive yields compared to the older, well established beets that growers currently use in their grazing systems.



DON'T FORGET

PRODUCTIVITY² SQUARED

KWS varieties are designed to:

- Maximise revenue
- Optimise efficiency
- Deliver consistency
- Offer real-world solutions
- Increase flexibility



Field to future



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