

# SPP NEWS

Sowing for Peak Performance

SUMMER 2023



Why making the right decisions around the varieties you choose **TODAY** will help deliver the highest crop margins **TOMORROW** and secure greater sustainability for us all in **THE FUTURE**



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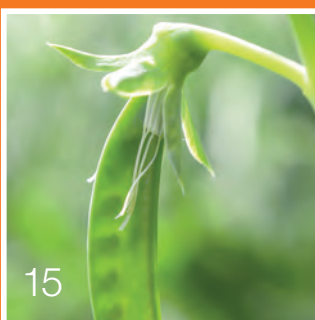
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# Together we grow

Investing in a sustainable future for all our customers, staff and business partners throughout the UK food supply chain is something very close to the heart of all at KWS.

Developing class-leading genetics and cropping options to help all in the industry, from grower to consumer, meet the challenges of the future and build solid, confident businesses is very much our primary focus and has been for over 150 years.

At the core of this is very much a partnership with growers, not just to provide them with the best, most productive varieties possible, but also to listen to them regarding their needs and work with them to get the most out of their relationship with us.

Such an approach takes time, resources and commitment. Whilst conducting the scale of breeding programmes we do across a growing range of crops represents a £multi-million investment every year, it is but the start of our business philosophy.

Equally important is the building teams of people focused on delivering the best service they can for growers and working with distribution and agronomic partners to constantly fine-tune the management of our genetics so growers can get the most out of them in the field.

We are also constantly in communication with end-market users, such as millers, distillers and brewers, to inform them of the benefits of our varieties and maximise marketing opportunities for our growers.

R&D is also an ongoing practice at KWS as is the ongoing communication of the results of this through all our stakeholders so all in the wider KWS family can make the best decisions to help secure a sustainable future.

Much of this goes unseen, but we have never cut corners and we never will. That's why when you trust us with your business, we guarantee we will give you the best genetics available, with the best support we can and be there for you whenever you

need our our help.

Together we grow – it's the only way we know.

Yours sincerely,



Will Compson, UK Country Manager

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# Sound variety choice key to rotational resilience

Building greater resilience into arable rotations could not only deliver significant improvements in gross margin it could help growers achieve their sustainability targets with multiple benefits across the operation.

**C**hoice of crops grown and picking the varieties most suited to individual farm resources can have a major impact on the resilience of arable production systems, says KWS cereals product manager Dr Kirsty Richards.

“Our breeding focus in recent years has been underpinned by the concept of ‘Sowing for Peak Performance’ or SPP, which puts the emphasis on developing varieties to help growers face the challenges of the future.

“Building greater resilience into rotations also means selecting varieties that can make the most out of individual growing situations and local marketing opportunities.

“A ‘one-size fits all’ approach is increasingly limiting if you are serious about building long-term resilience and sustainability into a farming business.

“Looking at untreated yield is a good starting point in identifying which varieties might be the best for an individual farm in terms of their resilience, but this needs to be considered in line with regional information too.

“Twenty years ago, in 2003, just 26% of the varieties on the RL had untreated yields over 80% of untreated controls, whereas in 2023 it is now 97%.

“Furthermore, 85% of all KWS varieties on the current RL have untreated yields of over 90%, led by KWS Extase at 97% and KWS Dawsun at 95%. These are exceptional, real-world indications of such varieties’ ability to cope with a range of adverse growing conditions.”



## Physical strength key

A variety’s standing power and overall physical strength is another good indication of resilience, she says

“In 2003, the average lodging resistance with PGR for the top 10 varieties was less than 1% lodged crop whereas in 2023 the top 10 varieties in the ground have an average of over 5% lodging with PGR.

“This indicates that lodging



resistance has generally gone down which is worrying, particularly as the RL data is based on the last five years when there wasn’t really a lodging year.

“As well as greater resilience, shorter, stiffer strawed varieties can deliver cash and workload savings resulting from reduced PGR passes, better harvest security and reduced drying costs that often result from lodged crops.”

Financial resilience is also an important factor to bear in mind when planning rotations, with

the ability of a variety to hit premium contract specification acting as a vital shock absorber in the current climate of high input costs, she adds.

“Modern Group 1 and 2 varieties such as KWS Zyatt, Extase, Palladium, Ultimatum and Siskin are more consistent in terms of hitting high yields with usable protein levels compared to older varieties.

“There are very lucrative contracts out there for proteins of over 12% and if you can achieve these whilst achieving 10.5-11.5t/ha yields, these can deliver really high returns.”

## Focus on individual farm resources

Growers striving to boost productivity against a backdrop of greater environmental and sustainability demands are fighting a losing battle unless they understand more about their own individual production criteria, Dr Sajjad Awan of independent environmental and agricultural analysis specialist NRM believes.

“NRM’s five-year study of nearly 600,000 individual fields has shown many growers have critically sub-optimal levels of basic nutrients with far greater variability in soil structure, organic matter and nutrient make-up than previously realised.

“Some of this is undoubtedly being driven by climate change, with the wetter and milder winters and drier, hotter summers we are now experiencing affecting soil microflora and biology to a significant degree. This points to a reshaping of some aspects of current management thinking, but the analysis also shows following some simple steps can address many of these issues.

“The key for growers is to know where they are starting from and base management decisions around their own individual farm data and not assumptions or generalised information.

“Testing, whether it be soil organic matter, soil nutrient status, nitrogen off take in harvested crops or for a whole host of other analytics, has got to become a routine part of future farm management.”



# How to leverage the KWS Group 2 trio to its full potential

KWS' trio of Group 2 wheats offer UK growers a range of agronomic and marketing options with some of the highest untreated yields on the current RL.

**G**rown in the right location, nothing comes close to sheer profitability of KWS Extase as proven in recent years, but the Group 2 newcomers KWS Palladium and now KWS Ultimatum have a lot to offer, says Dr Kirsty Richards, KWS cereals product manager.

“KWS Extase has proven itself to be a very successful UK milling wheat,” she says. “Even last year when high temperatures affected the protein performance of many varieties significantly, millers reported good functionality of KWS Extase.

“There are many 13% protein contracts from the likes of Heygates and ADM as testament to KWS Extase’s milling performance and the bottom line is that if you can get one of these, then no other wheat will touch Extase for profitability.

“But whilst 13% protein is really what the millers want, there are milling contracts available right down to 12% which opens the door for other Group 2 options, particularly in certain regions of the UK where they could actually outperform Extase.



## KWS Ultimatum in detail

KWS Ultimatum brings the high untreated yield performance growers have come to expect from the KWS Group 2 stable, along with excellent grain and field performance, Mark Dodds says.

“Added to the 2023/24 RL, KWS Ultimatum achieves a commendable yield of 101% of controls for the whole of the UK, fractionally behind KWS Extase, but this rises to 103% for the North.

“It delivers great performance in the second wheat spot, where 60% of milling wheats and 40% of wheat overall is grown, achieving 102% of controls and it performs equally well on heavy and light soils.

“It’s got an excellent untreated yield of 93% of controls, just behind the gold standard KWS Extase, supported by an excellent disease package including a 9 for yellow rust and a 6 for brown rust, giving it a better combination of rust resistances than similar varieties.

“Eyespot and fusarium resistance at 5 and 7 respectively are extremely strong too, with a 7 for mildew adding to its appeal for northern growers.

“Quality-wise, KWS Ultimatum has the best resistance to sprouting in the breadmaking sector, which is very important to growers aiming for premium specifications and those in tougher microclimates.

“The variety delivers a protein content of 12.3%, a Hagberg Falling Number (HFN) of 287, a specific weight of 79.6 kg/hl and has been rated as Group 2 by the UK Flour Millers with the added bonus of UKP Export status.”



“I would say start with assessing whether KWS Extase is right for your location, remember it doesn't suit early drilling or very fertile soils because of its rapid growth habit, and also if there are good milling contracts available nearby.”

### Excellent alternatives

If you're concerned at all about Extase, but like the idea of good septoria control with high untreated yields to give a bit of flexibility around spray windows, then KWS Palladium could be a good choice, Kirsty Richards says.

“It's a great all-rounder for the eastern wheat areas and the best Group 2 for early drilling whilst still having the very stiff straw of Extase.

“It's superb on heavier land and delivers a solid second wheat performance, particularly if you're focusing on premium markets.

“KWS Ultimatum is also a better bet for Scotland in many cases than KWS Extase. It delivers great yields in the north, far better than some of the Group 4s even, and has really good resistance to sprouting with strong fusarium resistance which is a real benefit in the wetter west.

“If there is a form of premium, then KWS Ultimatum can help you take advantage of that, but like with KWS Palladium too, high yield and specific weight often makes them a better bet as feed wheats than many of the competitors in certain regions.

“If a Group 2 ticks all the boxes agronomically, it can actually be more profitable than a Group 1 or a Group 4 even as a feed wheat.

“Don't forget, just like KWS Extase, KWS Palladium and

### Why KWS Extase remains so popular

Arguably the most exciting variety to come on to the Recommended List since the turn of the millennium, KWS Extase is the best example of the new generation of wheats that combine market value, high yield and outstanding disease resistance.

A specific weight of 79.4 kg/hl, a HFN of 294 seconds – one of the highest scores for both characteristics of any recommended breadmaking wheat – and a milling specification protein of 12.5% make it the outstanding choice in this market group.

It is also the only Group 2 variety to be supported by a buy-back contract for full milling specification through to lower protein flours by a national miller.

Its exceptional untreated yield of 97% of treated controls is 2% ahead of the next best-performing variety and owes much to its unprecedented resistance to septoria tritici.

For this resistance, Extase has a score of 7.8 and was the first UK variety to be awarded a score over an 8.0 when it was first recommended. It also boasts an 8 for yellow rust and a 6 for brown rust.

KWS Ultimatum have very high untreated yields and this brings real flexibility to management too.

“So if you're interested in Group 2, start with looking at KWS Extase but don't dismiss the regional yields and performance of KWS Palladium and KWS Ultimatum too.”

## The complete package with *Septoria* protection built in!

### KWS EXTASE

- *Still* the highest untreated yield on the RL
- The most complete package in terms of disease resistance and quality on the market today
- Exceptional resistance to *Septoria tritici* - the first variety over an 8 on the market



[www.kws-uk.com](http://www.kws-uk.com)

SEEDING  
THE FUTURE  
SINCE 1856



# Getting the most out of Group 4s

KWS Dawsum has delivered a stellar performance since its launch in 2022 and is now the UK's most popular high yielding wheat with the new soft Group 4 KWS Zealum waiting in the wings.

**K**WS Dawsum's combination of consistently high yields, real world flexibility and strong agronomics has made it the wheat to beat in fields across the UK over the last two years, says the company's Jamie Kirkwood.

"New in 2022, KWS Dawsum has quickly established itself as the most popular hard Group 4 in the UK, offering ultimate flexibility on farm and fantastic yields right across the rotation.

"In the 2023/24 AHDB Recommended List, KWS Dawsum achieves a yield of 104% for the UK as a whole but for the north this rises to 105%.



"It's a bankable barn filler delivering great yields with an exceptional specific weight of 80.0 kg/hl - one of the highest on the market today. Plus, it's a really clean, nice plant type with one of the widest sowing windows available.

"In the latest RL, for example, early drilling yield is 107% whilst mainstream and late sown slots are still 104% which offers real versatility, especially for growers in the North of the country.

"That lack of yield penalty in the later drilling slots will be of real benefit to many growers, particularly in view of the more variable growing conditions we now face.

"It's also very unusual for such a high yielding variety to have such flexibility with many other big hitters rapidly losing yield potential the later they are sown. That's not the case with KWS Dawsum.

"It's a great second wheat too, delivering 105% of controls in the latest RL compared to the 102% seen in some of the other popular Group 4s when they are drilled as second wheats.

KWS Dawsum delivers an untreated yield of 95%, second only to KWS Extase, and includes diseases resistance scores of 6.4 for septoria and 9 for yellow rust, he points out.

"Such overall versatility is going to be a really big advantage to growers, especially as this agronomic package means you can drill it earlier, if needed, without yellow rust, septoria or poor standing becoming issues later."



## Why KWS Zealum is a great big softy

New for farmers in autumn 2023, KWS Zealum is a super stiff, super versatile, soft Group 4 wheat that has a resilient combination of characteristics delivering performance in a range of challenging growing conditions and locations, Jamie Kirkwood says.

"With just under 40% of the soft Group 4 market sown in the AHDB north area, KWS Zealum brings all of the key characteristics needed for a northern wheat to perform on farm.

"It's fully approved for distilling, giving access to the 400,000 tonne distilling market in that region and delivers the very best performance in very early and early sown trials, along with a good disease package including a 7 for mildew and 6 for resistance to sprouting.

Whilst it is a first choice variety for growers from the east through to Scotland, its advantages don't stop there, he says.

"The majority of soft Group 4s are sown in the east and west, serving the UK's bioethanol and soft milling homes, so KWS Zealum's great overall package will be of benefit to growers here too.

"It has good resistance to sprouting, coupled with excellent resistance to fusarium and yellow rust, complemented by OWBM resistance too.

"Furthermore, thanks to its stiff straw, it's a useful wheat on heavier land or more fertile soils. So if you are looking for a wheat that performs in the most challenging of conditions, then take a closer look at KWS Zealum for your farm this autumn."



## Top performer

Northumberland grower Jim Lang harvested his first crop of KWS Dawsum at West Ord Farm, Berwick-upon-Tweed during 2022, achieving the farm's top yield of 12t/ha with a specific weight of 83kg/hl.

So well did it perform that he has increased the area for 2023 harvest by fifty percent.

A key factor in the decision to grow the high-yielding Group 4 hard feed is its suitability for early drilling, a vital consideration in an area where the weather can turn harsh very quickly in the autumn, he says.

"For the last five years all my winter wheat area has consisted of Group 4 hard feed varieties," says Jim, who joined the YEN (Yield Enhancement Network) in 2021.

"That is because it is difficult to consistently achieve sufficient protein or Hagberg levels for other uses, and this approach simplifies storage.

"All the wheats yielded fantastically well this year and the average yield was significantly higher than the 10t/ha achieved in 2021.

"KWS Dawsum was our highest yielding variety and averaged 12t/ha, which was very pleasing, followed by Grafton at 11.7t/ha."

The KWS Dawsum was very clean coming out of winter, even on the light land following spring oats, looked well throughout the season and produced the goods at harvest, he says.

"I usually aim to start drilling on 5 September and get all of the first wheats in by 20 September, because if the weather does break it can get very wet, very quickly.

"This year, the ground was so dry that it was not possible to start drilling during the first week of September. Eventually we had a 30mm rain event which allowed us to begin on 13 September and all winter crops were in the ground by 25 September.

"The seed rate on our light land was 255/m<sup>2</sup> and I went up to 400/m<sup>2</sup> for second wheats, but for the KWS Dawsum it was 325/m<sup>2</sup>.

"KWS Dawsum is a variety with all the qualities I look for in a winter wheat and one which I think it will be around for many years."

## Perfect fit

David Robinson, head of innovation and knowledge transfer at Frontier Agriculture Ltd and founder of the company's Crop Dynamics division, which Jim is a member of, says KWS Dawsum has proven a very a good fit for the farm.

"I have worked with Jim on agronomy for almost 35 years and know how passionate he is about variety choice.

"With the weather patterns in the Borders as they are, standing power, bushel weight and disease profile are the fundamental building blocks for a variety to be successful.

"Because of the geographical locality of the farm, Septoria and yellow rust can be problematic in many seasons, too.

"We looked at a number of trials and identified that the key attributes of KWS Dawsum would be idea for his farm circumstances.

"The trials also indicated that the variety would have a medium to strong tillering capacity, which would also be an asset."

In Frontier's own trials when drilled in September, October and at the end of November it yielded 108%, 104% and 104% respectively.

# How to boost gross margins across the rotation

Taking a long-term look across the rotation can not only help achieve sustainability targets, it can deliver significant financial benefits.

The effect of marginal improvements in many areas is greater than one large change, with varietal choice a key component of this, believes James Webster, senior analyst with crop consultants The Anderson Centre.

“The question of what sets resilient businesses apart from those who struggle is not a new one. It has been a key discussion area especially in the wake of the vote to leave the European Union and the subsequent decline in BPS payments.

“With costs still relatively elevated, whilst output prices are falling, the question is very much at the forefront of minds again.

“Working with the AHDB, The Andersons Centre has outlined eight key features that set high-performing farms apart from others, with varietal choice playing a key role in many of these.

“For example, the top 25% of producers spend significantly less on inputs such as equipment, crop-specific variable costs and general overheads than others and these are the areas where variety and crop choice, as well as paying attention to the detail of soil health, can play a key role.

## Controlling costs

The cost of machinery plays a key role in the difference between the top and bottom quartiles of cereal businesses, he points out.

“One high-performing farm in our analysis, for example, had such a high marginal cost for ploughing that it would need to produce an additional 0.4t/ha than that achievable through a minimum tillage approach to reap the benefit.

“Spraying is a high-cost area too, with each hectare of spraying costing approximately £12 in 2022/23, so taking an IPM approach in selecting pest-tolerant varieties would clearly have a significant impact on farm finances.”

Using The Anderson Centre’s ‘Loam Farm’ model based on a 600-hectare rotation of milling wheat, feed wheat, spring barley, winter oats and spring beans, reveals how much focusing on building resilience through incremental gains can benefit a business, he says.

“We estimate the difference between a crop production system in the top 25% with optimised crop genetics and a keen eye on overheads compared to the average, to be in the region of £270/ha of additional business surplus based on an analysis of crop production from 2017 to 2021.”

## Significant financial benefits

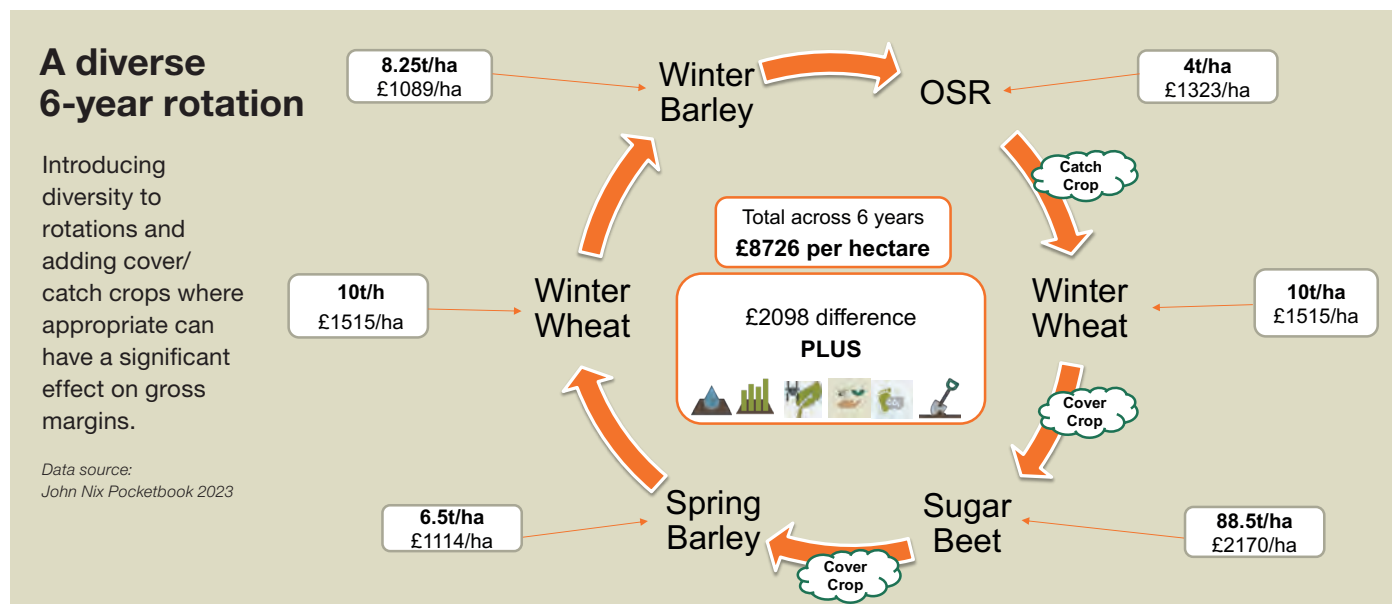
According to Olivia Potter, technical specialist at KWS, a further financial analysis carried out by the company shows that with more diverse cropping, including cover crops and sugar beet, the benefits can be worth over £2,000/ha across a six-year rotation.

“Working with costings from the John Nix farm management handbook, suggests a restricted six-year rotation, based on just two wheats followed by OSR and this then being repeated, would produce a net gross margin of £6628/ha.

“Introducing a more diversified rotation adding winter barley, sugar beet and spring barley, interspersed with catch and cover crops where appropriate, would lift this to £8,726/ha over the same six-year rotation.

“This is an improvement of £2,098/ha or over 30% in real terms. Plus, of course, that’s before you factor in all the additional benefits such as better soil structure, reduced use of key inputs and less incidence of diseases.

“A well-structured rotation can also ensure water is used more effectively, secure higher yields, increase biodiversity and reduce greenhouse gas production.”







# KWS barley portfolio provides top options for rotations

KWS' portfolio of barley varieties has something to offer all growers looking to get the most out of this valuable addition to the rotation

**A** firm favourite amongst winter barley growers, KWS Tardis is an easy to grow two-row winter feed barley with high yields and a particularly strong set of agronomic features suiting it to all UK locations, says KWS' Will Compson.

"It's one of the UK's highest yielding two-row winter feed barleys with a performance that rivals many of the six-row hybrids.

"But there's much more to KWS Tardis than that. It's a variety that combines genuine UK-wide yield potential with consistent performance in a wide variety of growing conditions.

"It's particularly strong in the east delivering a yield 105% of controls in the latest RL and performs well on light soils although it is best on heavy ones, where yields are at 107% of controls.

"Add in an excellent agronomic package, including a 6 for rhynchosporium resistance, a 5 for net blotch resistance and one of the best untreated yields at 85% of treated controls and you can see why it's the new class leader.

"It's also early to mature and delivers marketable grain with a very good specific weight at 70.6 kg/hl and low screenings.

"Barley Yellow Mosaic Virus resistance, allied to stiff straw and superb in-field performance, make it a great choice for growers looking for a simple and reliable way to expand their rotations and spread workloads across the farm."

## New agronomics to fight BYDV

KWS Feeris also brings some important new agronomics to the UK market making it the ultimate risk management tool for many growers, he says.

"KWS Feeris signals a new level of agronomic strength for UK growers delivering the best of conventional 6-row winter barley yields with the additional benefits of BYDV tolerance and strong overall disease resistance.

"With aphid-borne viruses increasingly difficult to control, KWS Feeris' tried and tested BYDV tolerance will be a real benefit. Sitting at 103% of control yield for the UK as a whole, it performs particularly well in the BYDV hotspot of the west of the country.

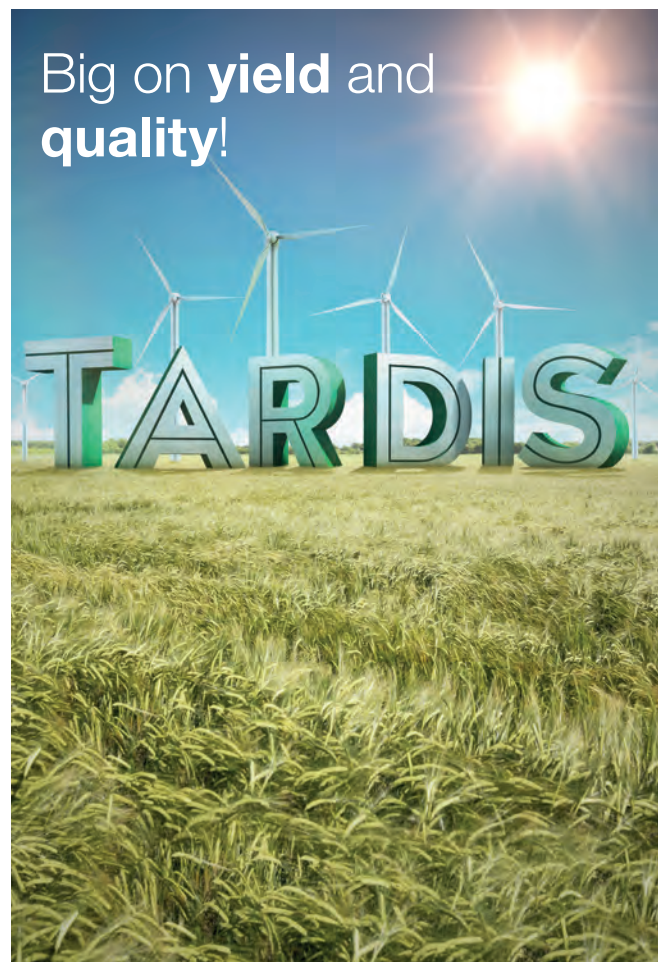
"Furthermore, these yields have been delivered with exceptional consistency over the very contrasting seasons of recent years even on heavy soils."

In addition to BYDV tolerance and BYMV resistance, KWS

Feeris stacks up very well with other 6-row winter barleys in terms of overall agronomic features, he points out.

"This is evidenced by an untreated yield 85% of treated controls with KWS Feeris getting 6s for both rhynchosporium and net blotch resistances.

"KWS Feeris is a very strong variety in its own right but with its BYDV tolerance and BYMV resistance, it's an excellent risk management tool for barley growers in high pressure hotspots and those looking to push drilling as early as possible."



Big on yield and quality!



pot test trial carried out by ADAS, it had outstanding performance with its rating of 5 for verticillium leaf stripe, better than all the current standards.”

### Early establishment impresses Lincolnshire grower

The rapid establishment and winter resilience of KWS Granos has certainly impressed Lincolnshire grower Jonathan Turner.

While many farms have reduced their oilseed rape production or stopped it entirely, A. W. Turner & Son have done the exact opposite at their Church Farm, East Halton near Grimsby, with a 50% increase in area of the crop over the last three years.

“Oilseed rape has always been a good break crop for us because our land is too heavy for roots and we grow vining peas, so beans are not an option,” says Jonathan, who works alongside his father, Graham.

“Normally we grow two varieties of oilseed rape, one a conventional type for early drilling and a hybrid for later sowing because of its added vigour.”

In 2020/21 they chose some non-KWS varieties and lost about 16ha of those due to a combination of dry weather after drilling and cabbage stem flea beetle, he recalls

“We went for KWS Granos this year on the recommendation of Lucy Jackson, area manager for United Oilseeds, based on its reputation for rapid establishment, knowing that it would be drilled late following spring barley.

“We also wanted a variety with good resistance to pod shatter and light leaf spot.”

The variety emerged very quickly and never looked back, quickly catching other varieties drilled three weeks earlier, he points out.

“We were convinced that being late sown it would be large enough going into winter and able to resist pigeon damage. The crop came into spring unscathed.”

Cabbage stem flea beetle has not been a problem either, he adds.

“All in all, we’re very pleased with what we have seen of KWS Granos so far.”

# KWS Granos ticking all boxes for future sustainability of OSR

KWS Granos is a new hybrid oilseed rape that delivers consistent performance in a sustainable way, based on traits that provide resilience.

KWS is switching its breeding focus for oilseed rape to deliver the most robust varieties for growers wanting to grow the crop in a more sustainable manner, says oilseeds and speciality crops manager Kate Cobbold.

“We have always bred OSR with high gross outputs and excellent oil contents, but in line with our SPP aspirations, we are increasingly looking for varieties with robust disease resistance, excellent standing and superb vigour.

“We also want varieties that have excellent tolerance of verticillium stem stripe and continue to explore other areas that would help farmers to produce oilseed rape in a sustainable and economically viable way to meet the challenges of the future.

“KWS Granos is one of the first varieties to be produced from our new hybrid breeding programme, which provides KWS plant breeders with much greater speed and flexibility than was possible with our previous conventional approaches.

“It’s already proved itself to be an early drilling big hitter, delivering a high

gross output yield of 105% of control for the UK and 105% for East/West plus an oil content of 45.5% in 2022 AHDB Recommend List trials.

“Including all the ‘bolt on’ traits that innovative farmers expect and noted for its very high gross output, KWS Granos is a short-stawed hybrid which exhibits very vigorous autumn growth and excellent standing, scoring 8 for stem stiffness and resistance to lodging.”

The variety is also characterised by its strong disease package, she explains.

“This includes good resistance to light leaf spot at 7 and tolerance to turnip yellow virus (TuYV), probably the most important, yet least understood, viral disease of oilseed rape in the UK.

“With medium flowering at 7 and maturity at 6, KWS Granos also has pod shatter resistance. In the KWS verticillium



# Low input hybrid rye has a bright future

Rye uses less water than wheat, needs less N to achieve similar yields and requires less agronomic interventions. It's the ultimate sustainable crop for the future.

**S**ustainability is at the forefront of everything now which, in its simplest form for agriculture, means maintaining or increasing yield whilst reducing inputs, says KWS technical specialist Olivia Potter.

“It is well known that hybrid rye is a light land, drought-tolerant cereal with a fantastic root system. We also know that when it comes to Nitrogen Use Efficiency (NUE) hybrid rye leaves winter wheat trailing in its wake.

“Hybrid rye’s ability to produce high yields from relatively modest amounts of applied nitrogen is capturing peoples’ imaginations.

“In our latest trials, carried out in conjunction with NIAB we looked to see how four of our hybrid rye varieties would fare with low levels of applied nitrogen. A 120kg N/ha and an 80kg N/ Ha regime saw all our varieties yield comfortably over 10 tonnes per hectare and KWS Tayo achieved an astonishing 10.84T/ha yield from the 80Kg N/ Ha regime! This underlines the crop’s potential to help growers make major cost saving and help sustainability.”

## Extensive benefits

According to KWS hybrid rye product manager Dominic Spurrier, the crop’s benefits extend far beyond cost saving.

“The structure of the plant means that in reverse to wheat and barley, the leaves play a less important role in obtaining energy, this coupled with rye’s low susceptibility to diseases like septoria and rhynchosporium ensures disease control is easier and cheaper.

“Hybrid rye offers good rotational value, it can be drilled from early September through to the end of October and is earlier to harvest than wheat, it offers a partial break from take-all and performs superbly in the second or third cereal position.

“KWS’ Pollen Plus technology within the hybrid breeding programme has greatly reduced ergot infection, once the bane of rye growers.

“Rye is a fast-growing crop, and its speed of growth gives it significant weed competition potential with the added bonus of a straw yield being up to 30% more than wheat or barley.

“Hybrid rye has a robust root system that helps improve soil structure. This system is also what makes it ideal for light land and our increasingly varied climate. Rye needs 25% less water than either wheat or barley, too.”

## Increasing market opportunities

KWS hybrid rye varieties are truly dual purpose, with 50% of the seed

produced used for whole cropping plus hybrid

rye provides a vital role as an energy source for anaerobic digestion, he says.

“From the grain perspective, demand is being driven by the feed sector, distillery production and the food industry.

“The structure of rye grain, particularly in relation to wheat, means that rye offers health benefits when used as a feed. Many studies on pig diets show that rye improves gut health and keeps pigs feeling fuller for longer.

“We are continually researching and building evidence to support the feeding of rye in other sectors, for example we have just concluded a year-long study on egg-laying hens. A trial involving 16,000 birds showed there was no difference in production, from egg numbers, quality and most importantly hen health, with poultry fed a standard wheat-based diet to one where 25% of the wheat was replaced with rye.

“All in all, hybrid rye fits well with current and future demands, to move to a more sustainable production system, requiring fewer inputs whilst also being able to cope better in terms of greater climate variability.”



# How maize can play a vital role in more sustainable rotations



Maize has a lot to offer in terms of building sustainability into arable rotations with low-input agronomy, efficient use of nitrogen and soil improvement opportunities just some of the benefits.

The starting point is to choose high-yielding maize varieties capable of maximising starch and energy production from your own individual farm resources and location, says KWS maize product and technical specialist Andrew Cook.

“Being able to maximise yield in the context of your own individual situation is key. The higher the output, the lower the carbon footprint per tonne of production is,” he points out.

“This means choosing a variety that is not only matched precisely to its end use but also the heat units available in your particular locality.

“Typically, hybrids with FAO ratings of 150 to 160 are considered to be ‘ultra-early’ and these require up to 20% fewer heat units than later hybrids with an FAO rating of 200+, which are usually classified as mainstream.

“So, if you’re in a more marginal area, you’ll need to choose a lower FAO rating to get the most out of the crop and make the best use of your own individual situation.

“KWS has more than 25 maize varieties for the UK, covering a range of FAO ratings and suited to both forage and AD, so finding the perfect variety for your system is unlikely to be a problem.”

## Target cultivation requirements

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, he says.

“It’s important to assess your requirements on a field-by-field basis. Digging holes is cheap. Subsoiling provides an enormous benefit – if it is needed – otherwise take the opportunity to make a considerable saving on machinery and diesel costs.

“Another key benefit of maize is that it allows you to use organic sources of nutrition such as FYM and slurry to their full advantage, which reduces reliance on bought-in fertilisers – a real cost saving in light of the recent high prices for nitrogen and other key nutrients.

“Nitrogen applications once the crop is growing are not usually needed, particularly if full use of organic sources has been made.”

## Simple agronomy

Whilst yield responses to starter fertiliser can be variable, they can increase the speed of establishment and lead to earlier maturity, he says.

“Heavier and colder soils tend to show the best response to starter fertiliser. MAP and DAP fertilisers can also help to lower soil pH which can also aid the uptake of phosphate on chalk soils.”

Agronomy is relatively simple compared with other crops too, with no major diseases being prevalent and costly

energy-intensive spray applications negligible. Weed control is relatively simple, too, Andrew Cook says.

“Maize doesn’t like competition, so weed control is essential. A pre-emergence treatment is a good idea. It will take out any initial flush but also slow the re-growth of subsequent weeds.”

The winter period can also be used to improve soils and add valuable nutrients back ahead of the next crop, he adds.

“Good post-harvest management can keep soil erosion in check, with cover crops not only helping stabilise soils, but also adding valuable nutrition.

“A good multi-species cover crop can add valuable nitrogen and other key nutrients back into the system and help condition soil through adding valuable organic matter.

“Such mixes can also help improve soil structure through roots at varying depths opening up fissures to the benefit of soil biology and drainage.

“All in all, maize can be used strategically across the arable rotation to add vital environmental and sustainability benefits whilst producing a highly valuable crop in its own right.”



## Don't forget

You can use the online KWS maize selection tool at [www.kws-uk.com](http://www.kws-uk.com) to find the perfect portfolio of varieties for your individual set-up.

# Benefiting from beet

Sugar beet brings vital diversity to crop production and can contribute significantly to the bottom line as well as delivering environmental and management benefits.

Modern high-yielding sugar beet varieties are not only highly resilient, but are also a perfect fit for many arable production systems offering a range of advantages to growers, says Ben Bishop, country manager – sugar beet UK.

“Sugar beet is an excellent break crop, offering a unique opportunity to control the pest, disease and weed problems built up in cereal-based rotations and also offers real opportunities to improve soil, conserve water and manage key nutrients better.

“The latest KWS varieties can also contribute to sustainability with properties such as beet cyst nematode (BCN) tolerance and resistance to diseases providing real potential to cut down on plant protection products.

“BCN-tolerant varieties such as our HARRYETTA KWS, for example, offer increased yield performance on farms where this is a problem and MARUSCHA KWS offers the first step forward in protection against virus yellows.

“In AYPR Rhizomania situations, the variety PHILINA KWS is an established choice of control, with double protection resulting from both Rz2 and Rz1 genes.

“Plus, of course, there is the CONVISO® SMART system, developed by KWS and Bayer, which reduces herbicide applications through varieties resistant to the CONVISO® ONE herbicide such as Smart VESNICA KWS, which is new for 2024 drilling.

“It also offers greater flexibility of management and less time spent spraying by offering highly effective control of a broad spectrum of weeds with just one application.”

## Advanced technologies

Advanced seed treatments developed by KWS also help sugar beet to establish quickly and evenly – key to delivering a healthy sugar beet crop that requires less agronomic intervention through the growing cycle, he points out.



“The latest of these, EPD 2.0, is a complete system approach that combines

KWS’ specific preparation methods and coating components to encourage early and even emergence of seed.

“It also improves early plant vigour, which is a precursor to healthier plants and higher yields.”

Much of the benefit of sugar beet in the rotation come from its position as a spring-sown crop, he says.

“Sugar beet ‘freshens-up’ cereal rotations. Weeds that are particular problems in cereals, such as blackgrass, don’t like the timings and herbicides used in sugar beet production so can be effectively controlled.

“Furthermore, sugar beet doesn’t host the same pests and diseases as cereals and interrupts their development cycles so these become less of an issue too.

“Then of course there is the opportunity to grow a cover crop over the previous winter and these can play an important role in adding organic matter to the soil, improving its structure and increasing nutrient levels.

“British Beet Research Organisation (BBRO) trials have also found that soils where cover crops are used are less susceptible to compaction and have higher earthworm populations.”

## Low nitrogen and water requirement

Nutrients can also be built-up in the soil by returning the sugar beet tops after harvesting, Ben Bishop points out.

“This can build up organic matter reserves which have a profound effect on improving soil biology and health, as well as improving nitrogen.

“Overall, sugar beet is very nitrogen efficient, requiring little additional fertiliser compared to cereals, particularly if full use of cover crops and organic sources of nutrients are used.

“Sugar beet can absorb nutrients from very deep soil layers. Since it grows throughout the growing season, the crop also uses late mineralized nitrogen from organic matter and counteracts nitrate leaching into water bodies or groundwater.

“It also has a low water requirement so is well suited to areas where there is less rainfall and this is another important consideration, particularly in light of the increasing frequency of summer droughts.

“All in all, sugar beet has a lot to offer UK producers and with a range of high-performing varieties and associated technologies, KWS is in the best place possible to help growers take full advantage of this potential.”

# Why it's time to take cover crops seriously

A new focus on multi-species cover crops is not only helping growers cut their use of bought-in nitrogen and other nutrients, it's also improving soils and water quality.

With a growing number of water companies now paying the cost of cover crop seed for producers in their catchment areas and significant payments attached to the sustainable farming incentive (SFI), it's time to take cover crops seriously.



According to independent soil and carbon specialist Neil Fuller there are numerous benefits associated with multi-species cover crops in terms of both improved productivity and reduced environmental risks.

"Many water authorities have woken up to the fact that if they encourage producers to grow cover crops, they potentially benefit from reduced N and P in watercourses, less silt and improved water quality all round.

"There are also indications that pesticide residues are held in the field better, plus in some cases, cover crops can actually restructure the soil so water retention is improved.

"The cost of making the seed available to growers is, therefore, relatively small compared with the benefits it delivers and this really is starting to get people thinking differently about the role of cover crops in the future."

## Significant nitrogen contribution

Cover crops can work to a degree between winter wheat or oilseed rape and a following winter barley, for example, but the biggest benefits result from when they are grown between winter and spring crops, Neil Fuller points out.

"The seed can be sown into standing arable crops two to three weeks before harvest or just after it and ideally left to grow for 90 days or more.

"They can then be grazed off,

sprayed or the new crop can be drilled directly into the green cover. Mixes that are not cold tolerant can be produced so a proportion of the cover crop just dies off. There are all sorts of ways of managing them.

"Trials suggest a good cover crop mix will produce between 20 and 50t/ha of fresh matter above ground and this

translates into around 80kg-140kg N/ha contained within that.

"There will be about the same amount of K and about a third of this amount as P as well.

"Every kg of N from a cover crop is a kg saved from potentially entering a watercourse, but it is also a kg of synthetic nitrogen saved.

"As synthetic N use accounts for roughly 75% of the carbon footprint of current combinable crop production, that represents a big reduction in emissions and the carbon footprint of agriculture.

"Trials in spring barley have shown up to 20kg N/ha is available to following crops just weeks after the cover crop, so it's there immediately to push yields up over the main growing period.

"That's great for most cereal crops, but our work has also shown that simple adjustments to agronomy can ensure this goes into yield rather than grain N in the case of malting barley crops.

"Good soil and crop management can ensure more of the N from the cover crop becomes available over subsequent years."

## Reduced carbon footprint

Cover crops also draw down a significant amount of carbon too and this can help decarbonise the production of arable feedstocks such as cereals, OSR and beans, he says.

"There are biodiversity benefits too, with cover crops creating habitats

beneficial towards insect pollinators and predators that can help in the suppression of aphids and take growers further on their journey to being insecticide-free.

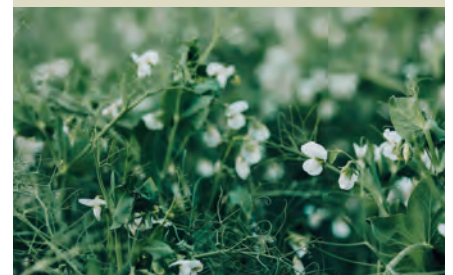
"Plus don't forget SFI will contribute £129/ha for cover crops to be grown and that more than covers the cost of the seed and the management of the crop."

## KWS FIT4NEXT

FIT4NEXT is a range of cover crops specifically tailored to complement following crops and add real benefit to the rotation.

"Work in Germany has shown such mixes add significantly to biomass growth and organic content of soils whilst preventing soil erosion at the same time," says KWS UK's Kate Cobbold.

"KWS catch crop mixtures have also been shown to actively bind carbon in the soil with a far-reaching benefit to future sustainability."



# New KWS Gotham makes protein production a priority

The known benefits of having leguminous crops alongside the increasing demand for vegetable based proteins is driving the current interest in combinable peas.

Recent years have seen a steady demand in the UK for green and yellow peas as health conscious consumers look for alternative ways to source protein and essential nutrients in their diet, says KWS UK speciality crops manager Kate Cobbold.

“This is allowing growers to capitalise on the growing market for plant-based foods. As a result, we’re seeing significant growth in the area put down to peas in recent years but the fluctuating prices of fertiliser has added yet another compelling case for peas.

“Unlike most other arable options, peas don’t need any expensive nitrogen fertiliser to maximise their production and as such they offer growers a genuinely low-input spring crop.

“In addition to fixing their own nitrogen, peas are a valuable break crop, increasing bio-diversity, conditioning soil and enabling a wide range of highly effective weed control options to be used.”

But the most influential market driver

is now the rapid growth in demand for pea-based protein for use in the food industry, she says.

“Peas are a key protein source in a wide range of foods including meat substitutes, energy bars, milks, yogurt, batters and ice cream. In some cases, pea protein is even replacing soya protein in more processed foods.

“It’s been driven by a move to more vegetarian-type diets and pea protein is very much the first choice of fitness fanatics. Pea flour and pea-based snacks are also increasingly available.”

## Considerable demand

With demand for pea protein rising, interest in KWS Gotham is bound to be considerable, Kate Cobbold says.

“Yield is impressive at 107% but it’s the superb protein content of 22.1% that is the real stand-out figure and that’s exactly what growers and processors alike are now looking for.

“Agronomically speaking, it’s a strong contender too, with resistance to pea wilt and a commendable 4 for downy mildew resistance.

“Earliness of ripening at 3, a relatively short straw length of 86cm and a standing ability at harvest of 6 add to its in-field reliability and resilience, whilst an impressive thousand seed weight of 289g rounds off the package.”

KWS’ green pea Mankato and yellow pea Manager remain staples of the industry and continue to be first choice varieties, she says, but KWS Gotham looks like taking the game several stages on in the future.

“Mankato’s consistency has made it a good choice for growers new to peas and it’s been a top 25% performer in the PGRO descriptive list for several years. Much of this is down to a near

perfect combination of standing power and yield.

“There are probably varieties that individually yield higher or are stiffer, but none have a stronger combination of these key characteristics.

“Plus, Mankato is really marketable with a big seed that pea micronisers really like as they can cut it in half plus it has good colour which it holds well.”

## Top performers

According to KWS technical specialist Olivia Potter, Manager is the latest yellow pea to hit the market from the successful KWS Momont pulse breeding programme.

“It is a very high yielding variety nationally over a range of soil types and has a strong disease resistance package including resistance to pea wilt.

“Its very short stiff straw allows safe harvest and this has helped Manager demonstrate consistently high yields when compared to other varieties in trials over recent years, plus it consistently produces a large seed size.

“Both Mankato and Manager are going to be top performers, but KWS Gotham represents a new style of pea variety that will undoubtedly form the basis of our commercial pipeline for several years to come.”



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