agrovista
seeds

Cereals and oilseed rape
key varieties

2024
season

growing through
innovation

Welcome

to Agrovista's seed varieties brochure 2024

Flexibility and reliability have always been key attributes of the most successful crop varieties, but with increasing extremes of climate and weather in the UK both traits have become paramount to profitability.

Good crop establishment will be at the front of farmers' and agronomists' minds this autumn, with the current season's challenging field conditions and limited opportunities for drilling, spraying, and fertilising still fresh in the memory.

Whilst we clearly have no ability to influence the weather, the cornerstone of successful establishment starts with seed.

High quality seed selection, correct variety choice, appropriate nutrition and targeted use of specific seed treatments will play a critical role in successful establishment this autumn.

This brochure outlines the benefits that our autumn 2024 selection of varieties, seed treatments and companion plants provides to aid establishment on your farm, where they will fit within your rotation and, ultimately, how they can help maximise your gross margin.

Our winter wheat offer remains focused on reliability, with Mindful, Sartorial and Alvius, among other carefully selected varieties, sitting within Agrovista's portfolio. Only the best combinations of yield, pest and disease resistance, end markets, drilling date flexibility, varietal diversification and, where appropriate, suitability to regenerative farming practices are considered, ensuring growers can make the best variety choices, wherever and however they farm.

Given the emphasis on good crop establishment we have retained a volume of quality overwintered wheat. This will be brought in for production in early summer following germination results, so we can deliver seed in good time to growers wishing to make a prompt start or who want security of supply.

Turning to winter barley, I'm pleased to announce we will be launching Resolute, our exclusive two-row winter barley, this autumn.

This all-round variety continues the theme of reliability by outyielding KWS Tardis, with an improved untreated yield score and better disease resistance.

In addition to Resolute, our barley offer majors on two-row feeds including Aleksandra, which provides, amongst other benefits, a uniquely high specific weight and untreated yield, and our hybrid barleys.

This autumn we will be recommending our exclusive seed treatment Voltek Bio + Tiros Max to help ensure successful establishment, improve crop nutrition and ultimately increase yield.

The biostimulant metabolite Voltek Bio enhances germination and improves establishment by increasing root and shoot biomass, whilst Tiros Max contains nitrogen-fixing bacteria which colonise the plant and help produce nitrogen for the growing crop.

Turning to oilseed rape, Agrovista's portfolio includes all the key technology traits – Clearfield, clubroot and sclerotinia tolerance, resistance to TuYV, stem canker (RLM7 and LepR1) and pod shatter, plus strong vigour.

In addition to these variety traits we are continuing our establishment risk-sharing scheme on our selected hybrid and conventional OSR varieties.

If you would like to discuss any of the areas highlighted in this brochure, please speak to your local Agrovista agronomist who will be able to offer advice tailored to your farm.

TED WILLIAMS

Arable Product Manager

Contents

Wheat varieties

KWS EXTASE

Group 2

- The joint highest yielding Group 2 variety with good resistance to septoria tritici, mildew and rusts
- KWS Extase retains the highest untreated yield on the Recommended List
- Notable below average eyespot resistance
- With exceptional grain quality and early maturity KWS Extase has become a very popular variety
- Manage fertiliser by growth stage not calendar date to avoid scorching
- UKp export milling

Mildew	7
Yellow rust	7(s)
Brown rust	6
Septoria tritici	7.4
Fusarium	6
Resistance to lodging	8
Eyespot	4
OWBM	–
Maturity	-2 **-1** 0 1 2

REGION	YIELD
UK	101
EAST	101
WEST	102
NORTH	99
Untreated yield	93
First cereal	101
Second cereal	101
Light soils	101
Heavy soils	101
Spec. weight	79.1

KWS PALLADIUM

Group 2

- KWS Palladium compliments KWS Extase with earlier drilling suitability, better mildew and matching septoria tritici resistance, though from a different genetic base
- Equivalent yield and early maturity, KWS Palladium offers the highest milling Hagberg for UK grists of any Group 1 or 2 variety
- KWS Palladium has notably good yellow rust resistance assuring a high untreated yield and is the shortest strawed Group 2 (+PGR)
- NOT UKp export milling

Mildew	8
Yellow rust	9
Brown rust	5
Septoria tritici	7.3
Fusarium	6
Resistance to lodging	8
Eyespot	6
OWBM	–
Maturity	-2 **-1** 0 1 2

REGION	YIELD
UK	100
EAST	99
WEST	101
NORTH	99
Untreated yield	90
First cereal	100
Second cereal	99
Light soils	99
Heavy soils	99
Spec. weight	77.6

BAMFORD

Group 3

- New high yielding soft biscuit wheat, with second highest untreated yield after KWS Extase
- Potentially UKs (soft export) and distilling - awaiting more tests
- High yielding across all drilling positions and soil types with best specific weight for milling group
- Not OWBM resistant
- There will be high demand for this variety autumn 2024

Mildew	(6)
Yellow rust	7
Brown rust	6
Septoria tritici	6.7
Fusarium	(5)
Resistance to lodging	7
Eyespot	6@
OWBM	–
Maturity	-2 -1 0 **+1** 2

REGION	YIELD
UK	106
EAST	105
WEST	107
NORTH	(105)
Untreated yield	92
First cereal	105
Second cereal	106
Light soils	(105)
Heavy soils	106
Spec. weight	78.5

@ value eyespot denotes breeder claim for presence of Pch1 Rendezvous resistance gene

KWS DAWSUM

Group 4 Hard

- KWS Dawsum offers high Group 4 Hard endosperm yield with excellent specific weight and one of the highest yields of any RL variety
- Costello parentage ensures excellent mildew and yellow rust resistance yet KWS Dawsum also has high brown rust resistance – a combination unique to this variety within the RL
- High yield when sown early. Slow growth rate suggests Sartorial or Mindful would be better varieties for later sowing positions
- Good sprouting resistance

Mildew	8
Yellow rust	9
Brown rust	7
Septoria tritici	6.3
Fusarium	7
Resistance to lodging	7
Eyespot	5
OWBM	–
Maturity	-2 -1 0 +1 2

REGION	YIELD
UK	103
EAST	103
WEST	104
NORTH	105
Untreated yield	91
First cereal	104
Second cereal	104
Light soils	105
Heavy soils	103
Spec. weight	79.9

LG TYPHOON

Group 4 Hard

- LG Typhoon develops notably slowly when drilled early, has a moderate response to PGR and has no disease resistence weaknesses
- LG Typhoon is a natural replacement to Gleam early drilled or as a second wheat with OWBM resistance and 9% yield advantage untreated
- Useful variety for anyone following a regen management strategy

Mildew	7
Yellow rust	9
Brown rust	6
Septoria tritici	7.2
Fusarium	6
Resistance to lodging	7
Eyespot	5
OWBM	R
Maturity	-2 -1 0 1 +2

REGION	YIELD
UK	100
EAST	100
WEST	100
NORTH	101
Untreated yield	89
First cereal	100
Second cereal	102
Light soils	101
Heavy soils	100
Spec. weight	77.1

Agrovista ***exclusive***

Alvius

Wheat

Comprehensive planning is the cornerstone of an efficiently run farming enterprise, but if Mother Nature chooses, even the best laid plans can be thoroughly disrupted.

The wet autumn of 2023 and spring 2024 ran a coach and horses through many growers drilling plans with an upsurge of interest in spring seed and shortages in many areas.

The new variety Alvius, exclusive to Agrovista can be safely drilled from mid-October to mid-April without issue. Alvius does not require vernalisation, has good winter hardiness and a speed of development that ensures, whether drilled early October or late March, harvest date will remain the same. Growers can order seed in October safe in the knowledge that if they don't get it drilled in the autumn they have until mid-April to complete the task.

ALVIUS

4 Hard (potential milling)

- Alvius offers an alternative functionality to crop establishment in 21st Century farming
- Ideally suited to follow roots where seedbeds may be compromised, Alvius has a six-month drilling window, with an approximate 1t/ha yield advantage to Belepi relative to drilling date
- Limited trials from UK-grown seed indicate possible high quality milling potential with high protein and specific weight across all drilling positions
- Alvius has not been through the UK VL trials process so cannot be directly compared to other wheats in this brochure
- For further reading, please visit the Alvius page in the wheat varieties section of our website: www.agrovista.co.uk/seeds/wheat-varieties/alvius

Mildew	(9)
Yellow rust	(6)
Brown rust	(6)
Septoria tritici	(5.6)
Fusarium	6
Resistance to lodging	(7)
Eyespot	–
OWBM	–
Maturity	-2 -1 (0) 1 2

REGION	YIELD
Yield assessments to date based on sowing month rather than soil type. Yields and specific weight in Agrovista trials have nevertheless ranged from KWS Extase to exceeding KWS Dawsum. Generally drilling Nov-Jan for best results	
Spec. weight	(79)

Bracket values give guidance on comparative agronomic values based on commercial observations and Agrovista trial performance.

Alvius emerges rapidly in the hardest of conditions. Trials drilled into heavy soils in north Lincolnshire suffered with continuous rain such that emergence was slow. Yet even then Alvius could be identified by its vigorous growth.

Stuart Cree
Seed Technical Manager

Harvest year 2021	Sowing date	Heading date	Harvesting date
WINTER WHEAT	07.10.2020	07.06.2021	06.08.2021
SPRING WHEAT	24.10.2020	13.06.2021	17.08.2021
ALVIUS WHEAT DRILLED AUTUMN	12.11.2020	11.06.2021	06.08.2021
ALVIUS WHEAT DRILLED SPRING	24.03.2020	13.06.2021	06.08.2021

Harvest year 2022	Sowing date	Heading date	Harvesting date
WINTER WHEAT	10.10.2021	24.05.2022	18.08.2022
SPRING WHEAT	23.10.2021	09.06.2022	22.08.2022
ALVIUS WHEAT DRILLED AUTUMN	18.11.2021	30.05.2022	10.08.2022
ALVIUS WHEAT DRILLED SPRING	23.03.2021	09.06.2022	10.08.2022

Breeder trials harvest 2022 and 2023 highlighted that Alvius drilled in November, will be marginally later to come into ear than a true winter wheat drilled a month earlier, but will be ready to combine at the same time or possibly earlier (see table above).

October drilled trials North Lincolnshire Jan 2024

Fast development through to harvest is a useful trait to allow crops to mature and finish for a timely harvest, but equally important for later-drilled crops is the variety's ability to establish rapidly and begin the growing process. Alvius emerges rapidly in the hardest of conditions.

Trials drilled October 2023 into heavy soils in north Lincolnshire suffered with continuous rain such that emergence was slow. Yet even then Alvius could be identified by its vigorous growth – centre right top.

Agrovista agronomist Luke Hardy managed a crop of Alvius drilled following late lifted veg last season. Despite being on lighter ground Alvius was a worthy alternative to spring barley:

"The Alvius took off like a rocket and I was initially worried about it lodging" reported Luke. "But I needn't have worried, having applied a growth regulator, the crop still produced plenty of straw, yet stood well" he concluded.

Alvius was specifically bred to follow sugar beet and other later lifted break crops. November-drilled trials at our AgX Haddenham site, Cambridgeshire courtesy of AG Wright & Sons Farms Ltd have included Alvius for the last three very different years. 3-year mean yield is marginally below KWS Extase but with a specific weight notably higher at 76.7kg/hl versus KWS Extase at 73.56kg/hl.

Alvius is a hard endosperm, stiff strawed variety with some milling ability which is still being assessed. Rheology looks promising and for a second year running the seed crop, this time grown in north Lincolnshire (last year the seed crop was in Suffolk and achieved 14% protein), had all the potential of full milling specification again without the application of late nitrogen – 13.45% protein, 280 Hagberg, 78kg/hl specific weight.

With at least 50% of the greenhouse gas footprint of growing wheat associated with nitrogen fertiliser the pressure is on the milling industry to reduce late nitrogen usage. Yet the 13% standard is necessary to enable a range of bakery products to be produced from the same grist. Agronomy trials of Alvius drilled October and November averaged over 2 years return a consistently higher protein without the application of late nitrogen (note this is incidental information for the trials in question as they were not specifically grown for milling quality) (see table 2).

3-year mean November sown (t/ha) - AgX Haddenham following sugar beet

	2021	2022	2023	Yield mean	Specific weight mean
CHAMPION	11.00	14.71	12.89	12.87	70.52
MINDFUL	10.87	15.44	11.38	12.56	73.67
EXTASE	9.85	14.35	11.99	12.06	73.56
ALVIUS	**10.83**	**13.14**	**12.09**	**12.02**	**76.7**
DAWSUM	9.94	14.13	11.70	11.92	74.21

Agrovista continues to assess new varieties for differing growing conditions. The coded line referenced in the table below, by example, brings additional yield and higher specific weight with the same flexible drilling window. It is however early days as to whether yield will deem it acceptable to bring to market.

Two year mean physical quality		ALVIUS	EXTASE	EW 19/45	SKYFALL
Harvest 2022-2023					
Oct drilled (n=7)	Average Hagberg	350	345	341	332
	Average protein	12.20	11.20	11.77	11.48
	Average spec weight	79	79	81	79
	Average yield	10.25	11.73	10.43	10.63
Nov drilled (n=2)	Average Hagberg	385	307	278	285
	Average protein	12.52	11.30	11.69	12.04
	Average spec weight	78	78	80	78

Private trials NB: No late nitrogen applied

Alvius took off like a rocket and I was initially worried about it lodging but I needn't have. Having applied a growth regulator, the crop still produced plenty of straw, yet stood well

Luke Hardy
Agrovista agronomist

mindful
winter wheat

Agrovista exclusive

‘It just gets on with it’ was a comment received from one of our early adopter growers of Mindful winter feed wheat, trying 12 hectares following sugar beet in Suffolk.

“It was one of our best fields in the end. Somehow it turned itself around – I had no idea it would be capable of that after such a testing start.” said Simon Pretty who manages 600ha of cereals, combining peas and sugar beet for GLA Farms from Castle Farm, Wingfield, Suffolk.

Mindful winter wheat is the new group 4 hard feed variety exclusive to Agrovista. A cross between the Dutch variety Evolution and Costello, Mindful offers versatility to growers with high yield when both drilled early and late season. Agrovista trials across various sowing dates coupled with official AHDB data highlighted the variety’s ability to perform well drilling from early September through to early November, with good performance in a second wheat position too.

MINDFUL

Group 4 Hard

- Best mildew score of any AHDB RL variety/candidate
- Outyields Dawsum in east and Champion in north
- Good early drilling yields - 105 over two years, third highest overall (including Dawsum/Champion) in 2022
- Compliments Sartorial with earlier drilling window and differing genetics to reduce disease pressure on farm
- Has equivalent specific weight to Dawsum through same Costello parent
- Performs well as a second wheat and on heavy land
- Mindful appears to have inherited from its parent Evolution the latter’s good scavenging capability, with competitive yield both early and late-drilled

Mildew	8
Yellow rust	6
Brown rust	5
Septoria tritici	6.3
Fusarium	6
Resistance to lodging	6
Eyespot	6
OWBM	–
Maturity	-2 -1 0 **1** 2

REGION	YIELD
UK	104
EAST	104
WEST	104
NORTH	(103)
Untreated yield	91
First cereal	104
Second cereal	(104)
Light soils	((101))
Heavy soils	105
Spec. weight	79.3

Early sown independent trial data is limited but we do have validated results from official trials in 2022, which being from a single year need to be treated with caution.

However, in these limited trials drilled early September fungicide treated and using plant growth regulator Mindful outyielded the majority of all high yielding feed varieties to come third highest overall (table 1).

At the other end of the drilling season, three years of continuous trialling at our fenland AgX site courtesy of A. G. Wright & Sons Farms Ltd, Haddenham, Cambridgeshire highlights the flexibility of this extraordinary variety. Drilled in November following sugar beet the Haddenham site is used by Agrovista to assess new lines of wheat and determine how resourceful they are in compromised drilling situations.

Here Agrovista determine how good varieties may be at scavenging for nutrients by example, and withstanding possible issues of compaction, colder seedbeds, and excessive water (such conditions as experienced this autumn and spring for many) (table 2).

Winter wheat RL early sown trial 2022 - standardised residuals AHDB

Name	Type	Mean	% Cont	EHowgate MLoth	Fowlmere Cambs	Coaltown of Balgonie Fife
			Sowing date	13-Sep	11-Sep	10-Sep
Trial mean		12.17	Previous crop	S-barley	F-peas	W-oat
LSD 5%		0.77	Soil type	Medium	Medium	L-sand
CV%		3.9	Tillage	Plough	Plough	Plough
Validity				V	V	V
SKYFALL (C)	Hard	11.29	94.4	11.24	12.07	10.55
KWS BARREL (C)	Soft	11.75	98.3	11.69	12.80	10.76
KWS SISKIN (C)	Hard	12.12	101.3	12.38	12.56	11.42
GLEAM (C)	Hard	12.51	104.6	12.68	12.84	12.01
LG SKYSCRAPER (C)	Soft	12.12	101.4	12.45	12.97	10.96
MINDFUL	**Hard**	**12.80**	**107.0**	**12.95**	**13.08**	**12.37**

Table 1 (C) = yield control

There were originally seven trials across two years where Mindful featured, but after assessment by AHDB the others were discontinued for being unrealistically variable, such is the scrutiny of the AHDB trialling protocol. To be able to publish this trial data we can only compare Mindful to the control varieties present in the original trial.

3-year mean November sown (t/ha) - AgX Haddenham following sugar beet

AgX

	2021	2022	2023	Yield mean	Specific weight mean
CHAMPION	11.00	14.71	12.89	12.87	70.52
MINDFUL	**10.87**	**15.44**	**11.38**	**12.56**	**73.67**
EXTASE	9.85	14.35	11.99	12.06	73.56
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DAWSUM	9.94	14.13	11.70	11.92	74.21

Table 2

The most important point for me is Mindful’s specific weight. It generally flies through the plant, and we get a really bold good quality sample out the other end

Claire Vergette
Seed Production and Site Manager, Agrovista

Mindful's performance at Haddenham in 2022 was one reason Simon Pretty chose the variety to follow his sugar beet that autumn. "It wasn't the best land – Beccles series loam over clay on an outlying block of land at Winfarthing in Norfolk... The conditions were awful, and I did question the wisdom of what we had done, especially after the heavens opened as soon as the tractor left the field."

Throughout the winter the crop appeared to struggle and lacked vigour, and the headlands in particular were thin. Simon was unable to apply herbicide and the gate remained shut until the first nitrogen dressing was applied.

"However, the Mindful responded very quickly to early fertiliser, and as spring progressed it picked itself up," said Simon.

The ability of Mindful to grow away rapidly in the spring has been noticed by other growers. Mark Lancaster on heavy clay soil at Cold Norton, Essex drilled Mindful on the 16th October 2023 after lucerne, beans and linseed. The cold and wet weather shut down all activity until a contractor with low ground pressure tyres was able to get fertiliser applied end of March. "If anything, the field after linseed looks the best," said Mark. "It may be due to the very wet winter and how the land lies, but things are improving all the time. It's a vigorous variety and there looks to be plenty of potential there."

I didn't go over the top with growth regulator at all, but Mindful stayed bolt upright

Simon Pretty
GLA Farms, Castle Farm, Wingfield, Suffolk

Harvesting Mindful, Scotland

Standing ability

There is limited trial and REML statistical data to suggest Mindful is weak strawed, but this has not been a feature in any commercial crop to date, other than the typical overlap areas on headlands. When first grown for seed following potatoes in Bedale, North Yorkshire the grower Mark Sampson reported it standing better than KWS Dawsum drilled in the neighbouring field. In October 2022 - drilled trial of both Mindful and Sartorial was conducted by one of the Agrovista Scottish agronomists Ben Lowe near Ellon in Aberdeenshire, alongside Skyscraper.

"The 2.5 hectares Mindful trial was sown on the 8th October following oilseed rape and had 175kg/ha of nitrogen, with no T0 fungicide...nothing lodged, and the crop was harvested with ease, with the straw chopped" reported Ben.

Simon Pretty had similar experiences 500 miles south in Suffolk.

"We applied in the region of 220kg of N/ha overall, 180kg/ha as liquid N and the balance as MZ28 slow-release N applied at GS33. I didn't go over the top with growth regulator at all, but it stayed bolt upright".

Mark Lancaster also reported no problems with his 8 hectares trial crop last year; "It also stood well, leaning only where the turkey muck pile had been and on some overlaps on short land quite late in June after heavy storms – hardly surprising given the soil type and eventual yields".

Grain quality

One of Mindful's principal advantages over other varieties is its grain quality. Mindful has a very high specific weight on par with KWS Dawsum. This stems from Mindful's Costello parent and stands out in the 3-year trial results at Haddenham compared with Champion where the latter's grain quality was more than 3kg/hl lower. Some breeders often ignore specific weight, but Agrovista think it is fundamental in a variety's ability to consistently perform.

Whether a wet season or dry, having high specific weight will ensure grain yield and grain value is maintained. At 70.52kg/hl the grain sample of Champion in the example of table 2 (see page 11) would be below the minimum standard for feed wheat and would sustain a penalty at best and in years of high wheat stocks may prove problematic to sell.

Furthermore, it is important to understand that trial specific weight values are measured from plots 10m^2 so are rarely achievable at commercial scale. When the risk is unnecessary, why take it when varieties are available that are genetically higher without a yield penalty?

"The crop produced 9.84t/ha dried over the weighbridge, with good bold grain which had a specific weight of 77-78kg/ha. We had a relatively straightforward harvest by the time it was ready, so it came in in good condition, it was one of our best fields of wheat in the end." concluded Simon.

Mark Lancaster reported, despite the leaning patches that harvesting was not a problem, ""We were still able to cut it easily enough," Mark noted. "In the end we combined just over 85t off the 8ha, with a very pleasing sample – 75-76 specific weight and 11.5-12% protein. We struggle to do 10t/ha on this land, 8.75 is pretty good, so it was a great result. The combine driver said it combined a treat and the quality of straw afterwards was noticeable".

Agrovista has its own seed processing facilities in north Lincolnshire and produce our own seed crops throughout England to service retail customers with quality seed delivered in a timely manner. "The most important point for me is Mindful's specific weight. It generally flies through the plant, and we get a really bold good quality sample out the other end" reported Claire Vergette Agrovista's Seed Production and Site Manager.

Agrovista also has seven mobile seed cleaning lorries across the UK, managed by our Mobile Seed Manager Leah Onn; "Mindful produces one of the best samples for the customer, big bold seed, very easy to clean and looks very good in the bag once dressed".

We donate 10% of our Mindful seed sales profit to our partner charities

FCN THE FARMING COMMUNITY NETWORK

" There are many varieties of seed on the market with incredibly imaginative names but "Mindful" encapsulates a caring and understanding approach to our farmers and one that we fully encourage within the agricultural community whether that is being mindful to ourselves or others. It is a commendable step for Agrovista to reinforce the message of awareness by naming a variety of wheat Mindful and with this, raising vital funds for the charity for which we are incredibly grateful."

The Farming Community Network (FCN) is a voluntary organisation and charity that aims to improve the health and wellbeing of people in farming and provide support at times of difficulty and change. In addition to local groups of volunteers, FCN runs a confidential national helpline (03000 111 999, open 7am-11pm every day of the year) and e-helpline (help@fcn.org.uk).

Georgina Lamb
Senior Partnerships Manager at FCN

RSABI

"Our thanks to the Agrovista team for coming up with innovative idea of supporting the farming community through the launch of the Mindful wheat variety," said Carol McLaren, CEO of Scottish agricultural charity, RSABI.

"We are delighted that, along with the Farming Community Network, RSABI will benefit from 10% of the profits of the sale of Mindful seed. However, bigger picture, the initiative has been helping to raise awareness of the importance of mental health in farming and reminds people to look after themselves and look out for others who may be struggling.

The PR and social media coverage which accompanied the launch of Mindful has also helped raise awareness of RSABI's 24/7 Helpline - 0808 1234 555 – and the practical, financial, and emotional support available."

Carol McClaren
Chief Executive at RSABI

WHEAT VARIETIES

Agrovista exclusive

Sartorial

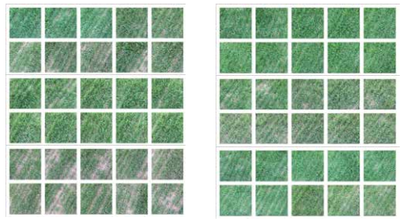
winter wheat

Entering its fifth commercial year Sartorial as our first exclusive winter wheat, needs little introduction to current Agrovista customers. Reliable, consistent, and noted for its rapid establishment, Sartorial is the banker variety all hard feed growers need as part of their variety choice.

Sartorial and Mindful have established well and look good. They have less septoria than many varieties in trial and are both rust-free so far.

Mark Hemmant
Technical Manager, Agrovista
16th April 2024 Bayer trials, Long Sutton sown 28th October after vining peas.

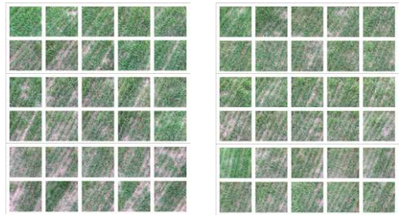
Sartorial 375 seeds/m²



Low-Till
contains 45.0 kg N

High Till
contains 43.3 kg N

KWS Siskin 375 seeds/m²



Low-Till
contains 36.7 kg N

High Till
contains 36.7 kg N

Coldham, photos taken March 26

Sartorial is grown throughout the UK as a high yielding hard group 4 winter wheat and over the years we have featured crops and trials from Kent, south west, midlands and east Anglia. In October we received feedback from a commercial on-farm trial conducted in northern Scotland courtesy of HB Farms at Ellon in Aberdeenshire, managed by Agrovista agronomist Ben Lowe.

Soil type was 'other mineral on Scottish or silt loam English' and the crop followed oilseed rape.

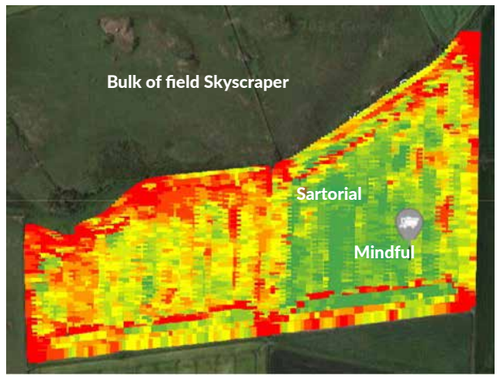
As the last field sown 8th October 2022 before the weather closed in for winter, the crop was drilled at 390 seeds/m² and had a total of 175kg/ha Nitrogen. There was no T0 applied.

The principal variety sown was Skyscraper with 2.5 has of Sartorial and Mindful each included. Performance was as in Table 1. Sartorial yielded 11.18t/ha dried weight while the highest yielding whole field on the farm that year was 11.09t/ha. There was no lodging in any of the varieties.

The yield map opposite gives a visual representation of the harvesting profile of the field.

It would be expected that the highest overall yield would be in the preferred repeating variety, in this case Skyscraper. At 10.39t /ha this average is across 78 hectares and includes headlands, which by the yield map have impacted on performance. The grower will have learnt how to grow this to best advantage over the years.

Trialling new varieties gives an indication of what extra benefit they may bring and a following commercial



Variety	Yield	Specific weight (Kg/hl)
SKYSCRAPER	10.39 t/ha (average of 78 has)	72.69
MINDFUL	10.37 t/ha	72.60
SARTORIAL	**11.18t/ha**	**71.20**

crop will enable opportunity to enhance the yield further. In the case of the Sartorial trial field there was potential for an additional 0.8t/ha over Skyscraper while retaining such benefits as OWBM resistance and high specific weight.

Sartorial would also help to spread harvest, being marginally earlier than Skyscraper; improve disease management as it has better septoria tritici resistance and safeguard yield and quality through better standing.

One of the key benefits of Sartorial is its ability for quick establishment – the main reason why we see its prime drilling window as early October rather than September. Agrovista trialled Sartorial's ability to scavenge nutrients, in conjunction with Yara, following both ploughing (high till) and minimum tillage (low till). Assessments in March the following spring of nutrient uptake indicated a stark difference between Sartorial and one of the recognised later drilling varieties at the time. Trials showed that Sartorial had retrieved notably more nutrients in both establishment situations.

'Low-till' was power-harrowed for levelling on the 25th October and drilled the same day with a Pottinger Terra Sem. 'High-till' started with a Sumo Trio followed by two passes of an Amazone Catros. It was drilled on the 25th October with the Pottinger Terra Sem. Drone photos were taken on the 25th March. Previous crop was potatoes.

Sartorial differentiates from other hard feed varieties available today including our exclusive variety Mindful through diverse genetics. Santiago is a parent, while Cordiale and Soissons are grandparents, bringing high specific weight and rapid autumn establishment, a degree of earliness and OWBM resistance.
Hard feed growers are advised to not grow all one variety. Sartorial remains our most popular variety and all seed is produced in house to manage quality and distribution.

SARTORIAL

Group 4 Hard

- Excellent establishment capability backed by Agrovista in-house trials has made Sartorial a popular variety with Agrovista growers
- High specific weight, decent Septoria tritici and OWBM resistance builds the package this variety offers
- Santiago parentage plus higher spec weight boosts light land performance while rapid, competitive early season development offers later drilling benefits with challenging seedbeds

Mildew	6
Yellow rust	8
Brown rust	5
Septoria tritici	6.2
Fusarium	-
Resistance to lodging	7
Eyespot	5
OWBM	R
Maturity	-2 -1 0 **1** 2

REGION	YIELD
UK	NL data (103)
EAST	(103)
WEST	(103)
NORTH	(104)
Untreated yield	(86)
First cereal	(103)
Second cereal	(103)
Light soils	(103)
Heavy soils	(103)
Spec. weight	77.3

Bracket values give guidance on comparative agronomic values based on commercial observations and Agrovista trial performance.

Genserus

RGT Grouse

winter wheat

UK farmers are expected to see at least a 50% cut in revenue derived from the Basic Payments Scheme December 2024.

Replacing this income is the Environmental Land Management programme and within that structure the Sustainable Farm Incentive (SFI) offers growers the opportunity of payments in exchange for adopting a range of environmentally beneficial measures such as to improve biodiversity, soil health, carbon footprint, and water quality on their farm among others.

Adopting crop management practices that remove the use of insecticides for the lifespan of the crop is one low-risk income stream available, easily adopted simply by switching variety choice.

RGT GROUSE (NL data)

Group 4 Hard

- RGT Grouse has a slow, prostrate growth habit with improved disease resistance over its predecessors
- With BYDV resistance, RGT Grouse is suited to early drilling
- RGT Grouse has outyielded Gleam in the presence of BYDV by 10-23% across two years of Breeder trials
- Consider for outlying fields, or your earliest drilled ground
- Being also resistant to OWBM RGT Grouse offers growers the opportunity of adopting IPM4 of an Integrated Pest Management Plan and receive a minimum of £45/ha for the crops included
- Please talk to your Agrovista agronomist for more data

Mildew	7
Yellow rust	5
Brown rust	5
Septoria tritici	5.5
Fusarium	6*
Resistance to lodging	7
Eyespot	(5)*
OWBM	R
Maturity	-2 -1 0 1 **2**

REGION	YIELD
NL data harvest 22 in the absence of BYDV	
UK	97.6
EAST	97
WEST	[98]
NORTH	[[98]]
100=11.56t/ha	
Untreated yield	In absence of BYDV NL harvest 22 76 (100=11.56t/ha)
First cereal	n/a
Second cereal	n/a
Light soils	n/a
Heavy soils	n/a
Spec. weight	76.7

* Breeder data

WHEAT VARIETIES

RGT Grouse winter wheat is genetically resistant to barley yellow dwarf virus (BYDV) and orange wheat blossom midge (OWBM). BYDV is a virus carried predominantly in the south of the UK by the over-wintering bird cherry-oat aphid and in the midlands and north by the grain aphid each feeding on early drilled cereal crops.

Non-resistant varieties have no natural protection from this virus which can reduce yields by up to 60% in the very worst situations. OWBM are active in May and if this coincides with wheat ear emergence (GS 53-59) then eggs are laid and the resultant larvae can damage grain formation, yield, and endosperm viability, leading to sprouting.

Use new genetics when early drilling for three-way security

Following the wet autumn of 2023, growers will be very keen to drill as early as the previous crop allows and mitigating risk will be at the forefront of minds. RGT Grouse offers security in three ways.

1. RGT Grouse has a slow growth habit with a prostrate tillering attitude – the perfect combination for early drilling as it will not develop overly lush growth and be more prone to disease as a result
2. RGT Grouse is genetically resistant to BYDV. For this variety over-wintering aphids carry no virus transmission risks. The trait greatly simplifies crop management and delivers targeted control, removing the need to monitor aphid populations and leaving time for other key farm activities during the busy autumn period. RGT Grouse therefore brings economic, environmental, and managerial benefits across the enterprise
3. Several insect groups help regulate pest numbers. Ground-feeding beetles eat pest larvae by example. All harmed by insecticide applications. By adopting genetically resistant varieties growers can both get paid through the Sustainable Farming Incentive and avoid unwittingly killing environmentally beneficial predators

Adopting crop management practices that remove the use of insecticides for the lifespan of the crop is one low-risk income stream available, easily adopted simply by switching variety choice.

Yield under BYDV pressure (2023, Natural)

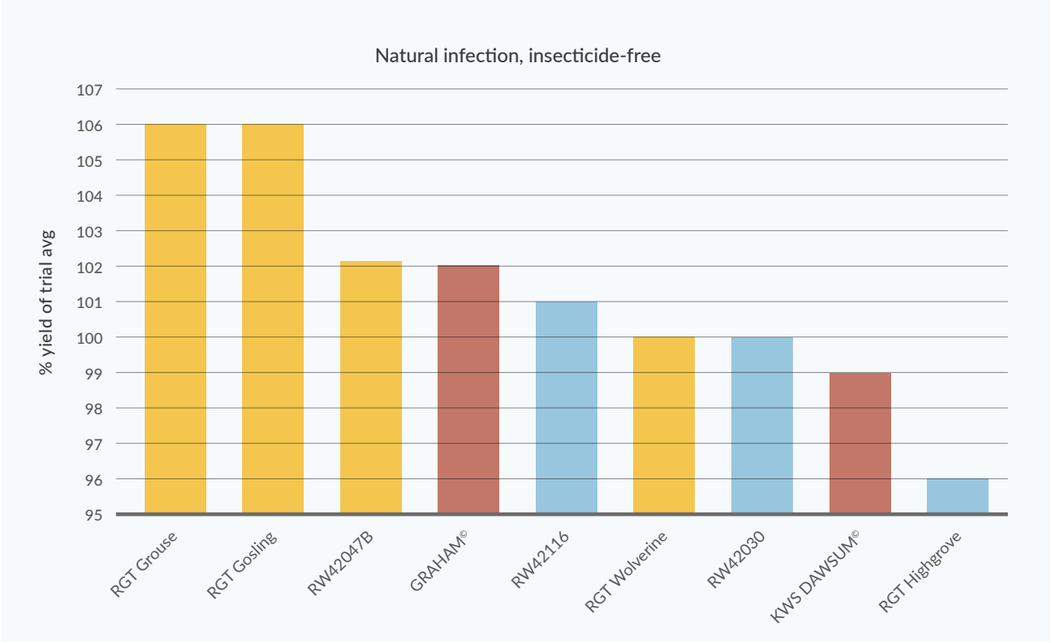


Table 1: Trial location southern Ireland

Yield under BYDV pressure (2023, Inoculated)

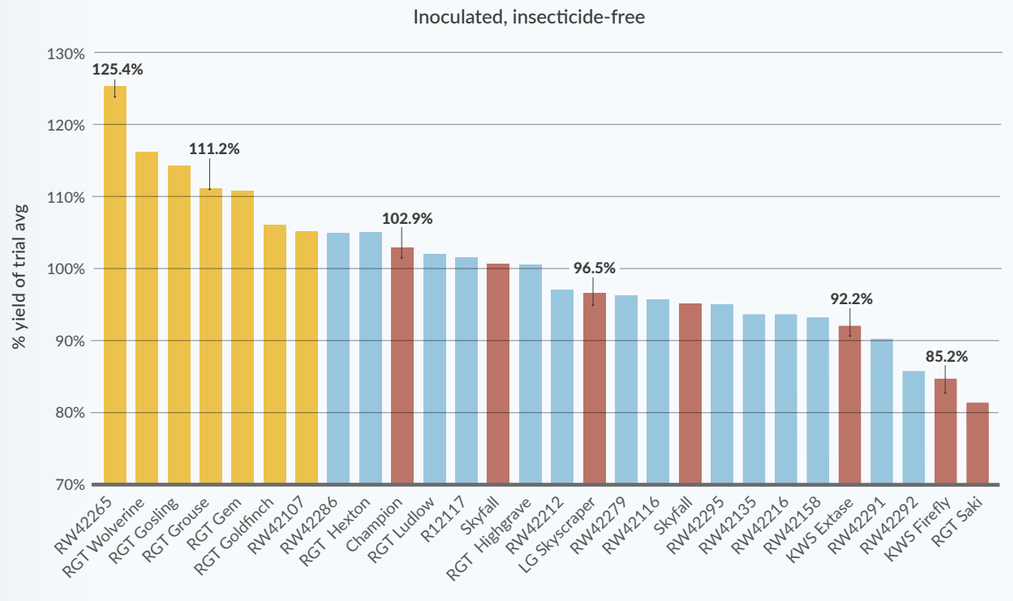


Table 2: Trial location Cambridgeshire

Marketed under the brand name GENSERUS, RGT Grouse is the best suited currently available BYDV-resistant winter wheat ideally suited to the early drilling window.

The breeder continues to test RGT Grouse through both natural infection and inoculation, as such assessment is not part of the AHDB Recommended List (RL) protocol. In fact, the nationally recognised independent testing system that is the RL currently undertakes no trials where insecticide is excluded from the trial management programme – even 'untreated' trials are pest-managed by synthetic chemistry.

In breeder trials 2023 harvest RAGT tested all their resistant breeding lines in the presence of BYDV across the two infection systems. (See tables 1 and 2). Where reliance was merely placed on natural infection – in other words a complete gamble as to whether virus vector aphids fed on the crop or not (and in which area of the trial field), there was a 7% yield advantage over KWS Dawsum by example (table 1).

Where BYDV was inoculated into the trial, yield differences of 8% to 19% were recorded between RGT Grouse and other feed and milling varieties.

Over the last four years RAGT have seen increases in yield using genetically resistant varieties in the presence of BYDV (R2n) via inoculated trials of up to 23.8%

When drilling winter wheat early – mid September forwards, risk of early aphid feeding can be further minimised by:

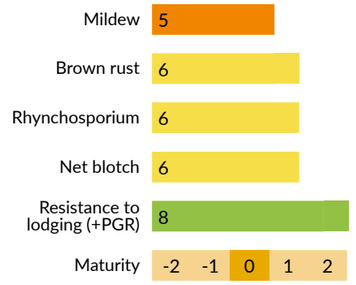
- Selecting lower-risk fields, such as fields with a low amount of surrounding grassland
- Encouraging natural enemies, such as predatory beetles and web-spinning spiders. Note: these can help control aphid numbers, but may not prevent virus transmission
- Managing 'green bridges' that transfer aphids/virus to new crops including grass weeds such as annual meadow grass and volunteer cereals
- Note also that aphid colonisation is generally lower on fields with minimum tillage (retained straw may also benefit natural enemies)
- Using monitoring tools to assess aphid activity
- Planning well ahead and reducing populations in the previous crop or removing spoil heaps or places where aphids may over-winter in numbers
- Removing insecticide use across the whole enterprise and establishing biodiverse areas where predator numbers can build

WHEAT VARIETIES

Barley varieties

KWS TARDIS - 2 ROW

- A solid two-row feed variety with excellent standing ability offering maximum yield potential on fertile and well bodied land
- Best comparative performance in eastern region where yields have matched six-row
- Mid-length straw and relatively early

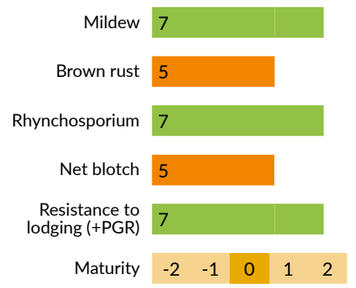


REGION	YIELD
UK	102.8
EAST	104
WEST	101
NORTH	103
Untreated yield	85
Light soils	102
Heavy soils	106
Spec. weight	70.1

SY KINGSBARN - 6 ROW

Hybrid

- SY Kingsbarn offers consistent high yield performance across all regions / soil types, with better yield in the north and west
- Tall strawed yet good lodging resistance, low brackling and responds well to PGR
- Bold grain with minimal screenings
- Seed cleaning and distribution ex Riby to ensure availability and timely delivery

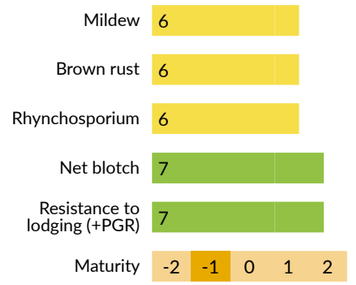


REGION	YIELD
UK	106.6
EAST	106
WEST	107
NORTH	107
Untreated yield	83
Light soils	107
Heavy soils	103
Spec. weight	70.2

SY BUZZARD - 6 ROW

Hybrid BYDV tolerant

- New Hybrid 6-row with tolerance to BYDV, yet reasonable yield without infection
- Typically long-strawed, similar to SY Kingsbarn in height and standing
- Improved brackling resistance
- Slightly lower specific weight
- Best net blotch resistance. High screenings through a 2.5mm sieve



REGION	YIELD
UK	102.7
EAST	104
WEST	(101)
NORTH	(102)
Untreated yield	82
Light soils	(101)
Heavy soils	(100)
Spec. weight	69

Agrovista exclusive

Resolute

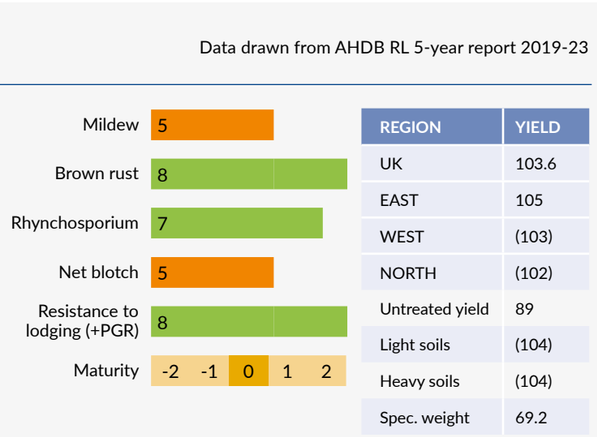
winter barley

Resolute Winter Barley is a high yielding 2-row feed barley with excellent disease resistance, standing ability and grain quality. In the testing conditions of 2023 Resolute stood well against key rivals such as LG Caravelle and Lightening with a yield surpassing KWS Tardis.

RESOLUTE - 2 ROW

Data drawn from AHDB RL 5-year report 2019-23

- Limited data suggests outperforms LG Caravelle and KWS Tardis on light soils and KWS Tardis generally through England and Wales
- Higher untreated yield than KWS Tardis. Good standing on par with same
- Excellent quality sample with equivalent specific weight and lower screenings than KWS Tardis and LG Caravelle
- Excellent brown rust and rhynchosporium resistance combination - highest yielding winter barley available with AHDB resistance ratings of 8 for brown rust and 7 for rhynchosporium



REGION	YIELD
UK	103.6
EAST	105
WEST	(103)
NORTH	(102)
Untreated yield	89
Light soils	(104)
Heavy soils	(104)
Spec. weight	69.2

Bracketed data highlights a low number of trials in dataset and cannot be presumed accurate.

BARLEY VARIETIES

Physical grain quality Resolute winter barley

	Specific weight (kg/hl)	TGW (gms)	Screenings through 2.25mm sieve (%)	Screenings through 2.25mm sieve (%)	Yield (t/ha)
RESOLUTE	**64.4**	**57.5**	**4.7**	**2.25**	**10.0**
TARDIS	63	54	12.0	3.2	6.2
TARDIS	65.8	43.5	35.4	17.8	5.5
TARDIS	67.3	54.4	13.0	4.6	7.9
CARAVELLE	56.3	45.7	18.8	7.5	5.4
CARAVELLE	64.8	45.2	17.3	4	8.3
CARAVELLE	65.2	49.8	8.9	2.8	6.7

Agrovista seed crop physical as grown analysis Seed Lab 100, harvest 2023

Sample quality was likewise good – in official trials screening losses were lower than KWS Tardis and LG Caravelle. These values were matched by the 2023 Agrovista seed crop which yielded 10 tonnes per hectare with good specific weight and Thousand Grain Weight (TGW) and lower screenings than both rivals. The data in the table above are the actual results from the Agrovista seed crops harvest 2023.

Resolute 2-row feed is the second winter barley from the Agrovista variety screening trials. Previous new variety releases have included Aleksandra winter barley, launched last year, Sartorial and Mindful winter wheat, Malvern, and Bounty spring barley and Alvius alternative wheat all for the exclusive benefit of Agrovista customers.

Resolute has been extensively trialled for four years with a small release of commercial seed autumn 2023. Agrovista customers had the opportunity to evaluate this promising new variety to run alongside their regular winter barley variety choice. Those crops are now drilled – the majority before the autumn turned wet.

Quentin Ham who manages customers in Oxfordshire and Wiltshire posted these pictures of Resolute taken on the 5th March exclaiming that the crop looked as good as any hybrid barley crop seen so far at this time of year. Resolute is a conventional 2-row barley variety.

Commercial Resolute crop Oxfordshire early March 2024. Quentin Ham Agronomist Agrovista UK.

At the time the photographs were taken the crop had received no fertiliser. Sumo direct drilled at 170kgs/ha into sandy silt loam with good nutrient status and organic matter. Quentin's aim was to keep the crop as healthy as possible and commented that as the crop was so clean Equilibrium, an amino acid and seaweed biostimulant was applied as an alternative T0.

Variety List (VL) reporting protocol prevents us showing the performance of Resolute against select rival varieties as performed in UK Official trials, other than those used as controls. This is understandable but not helpful when growers wish to know how Resolute may perform in more detail against principal feed contenders.

The table below gives VL performance following two years of extensive trials across the UK. Readers are directed to the lodging scores of Resolute, clearly an improvement over control varieties.

We can advise (though not show here) that lodging % is also lower than LG Caravelle, Lightening and equal to KWS Tardis in official trials.

Resolute does show a slight increase in brackling risk. It is important to note that trial values cannot give a complete reflection of commercial farm situations as harvesting of plots, by example, are only undertaken when the latest maturing varieties are harvest ready.

	Treated yield (%C)				Untreated yield (%C)	Specific weight (kg/hl)	Lodging - Fungicide	Lodging + Fungicide	Brackling + Fungicide
	UK	E	W	NE			% retrans	% retrans	% retrans
Trial/control mean	9.68	9.10	9.41	11.21	9.68	70.9	4.3	4.5	9.3
Max No. of data items	50	26	11	13	24	26	7	12	30
LSD 5%	3.4	5.0	5.4	4.1	5.3	0.8	4.9	1.9	0.7
CV%	4.2	4.4	4.3	3.3	6.5	1.5			
RESOLUTE	**103.8**	**(105)**	**(104)**	**(102)**	**(90)**	**70.2**	**(2)**	**(2)**	**11**
ELECTRUM	96.1	96	97	96	82	71.5	(4)	6	6
CRAFT	93.4	93	93	94	81	71.3	(1)	2	8
LG MOUNTAIN	100.1	100	101	99	84	71.9	(3)	3	22
SY KINGSBARN 6R	107.2	107	107	107	83	71.6	(10)	11	11
FUNKY 6R	103.2	103	102	104	88	70.3	(4)	2	14

Extract BSPB VL trials 2021-2022

Resolute is a nice barley and it's early to the combine, which is useful for harvest management

Ed Farquharson
A&M Farquharson, Seisdon, Wolverhamptom

The Resolute seed crop was grown in the west midlands by Ed Farquharson of A&M Farquharson, Seisdon, Wolverhampton following carrots. The crop was sown at 200kg/ha with 150kg of N applied over three applications.

"The dry weather of 2023 broke on the 6th July and we started to sustain some heavy rain showers" reported Ed. "the Resolute brackled in part after it started to rain, unsurprising under the circumstances and no different to our other seed crop of KWS Tardis" he continued. Ed went onto say that head losses were slight, with it being a late-season issue and combining in fact was easy;

"Resolute is a nice barley and it's early to the combine, which is useful for harvest management" commented Ed. His seed crop of KWS Tardis, which was slightly later drilled achieved 8.6t/ha while his seed crop of Resolute achieved 10.0 tonnes. "We are happy with that" he concluded.

Resolute has exceptional disease resistence to the key barley diseases brown rust (rating 8) and rhynchosporium (rating 7) and was the highest yielding of any variety with this disease rating combination in the UK Recommended List (RL) 5 Year 2019-2023 AHDB dataset. In 2023 RL candidacy trials Resolute was 4% higher yielding than KWS Tardis untreated and in Scotland Resolute was the second highest yielding 2-row (behind Aleksandra, see page 26) untreated.

Where growers employ contractors to manage spraying, highly disease-resistant varieties offer peace of mind with a wider spraying window of opportunity before disease may start to affect yield. As fungicides are withdrawn and disease pathogens continue to mutate, we need new levels of disease resistance and Resolute offers this.

	Mildew	Brown rust	Rhynchosporium	N et blotch	BaYMV
RESOLUTE	**6**	**8**	**7**	**5**	**R**
ELECTRUM	6	7	5	5	R
CRAFT	6	7	6	5	R
LG MOUNTAIN	5	7	5	5	R
SY KINGSBARN 6R	7	5	6	5	R

Extract BSPB VL trials 2021-2022
Official disease ratings.

Ed Farquharson, A&M Farquharson, Seisdon, Wolverhamptom

Ed Farquharson was very happy with the Resolute yield harvest 2023 and subsequently drilled twice as much area again for seed – a repeat in the original field and a new field following potatoes, previous to which it was in a long-term grass ley.

Such had been the level of rainfall through the autumn 2023 to present day that Ed still had 1.5 hectares of potatoes in the ground from the previous season and nothing drilled or planted of spring crops at the time this article was written (early April 2024).

Understandably, the Resolute following potatoes was not as far forward as it had been twelve months previously which Ed had put down to the legacy of the long-term ley limiting drainage in that field:

"The Resolute hasn't shown any vast signs of stress and looks pretty resilient considering the conditions" pointing out that parts of the field due to the sheer volume of water had rotted out in the autumn. Ed continued "Resolute has definitely got early vigour in the spring, it's got away well and now looks pretty good."

This time around Ed's seed crop of KWS Tardis was drilled the day before his Resolute after peas on slightly lighter land and now with twelve months experience of Resolute he is keen to see whether he can extend the yield further. Ed ended our conversation with his opinion as a long-standing barley grower:

"Resolute is not difficult to grow, if just grown for feed [rather than a seed crop] fungicides could be adjusted - just what you want from a feed barley!"

Agrovista will have a good supply of Resolute C2 grade available this harvest, grown in Scotland, northern England, the Midlands, and East Anglia, with updates on performance through this challenging year.

Aleksandra
25 March 2024

Honestly, the cleanest variety I have

Lyndon Harris
Western agronomist

Aleksandra

winter barley

Agrovista ***exclusive***

UK farming needs to be carbon neutral by 2040. Varieties that help growers lower their inputs overall offer another step towards that goal.

Aleksandra winter barley, released to the market last autumn and featured in the 2023 Agrovista Cereal Seed brochure offers growers the opportunity to reduce the use of fungicides due to its superb disease resistance.

Such flexibility is particularly beneficial to growers who use contractors to spray crops. Having to wait for equipment to arrive, or with outlying fields wihch are difficult to monitor daily, growers can sow Aleksandra and be comfortable that disease will not build thus possibly needing a greater dose or more expensive product before the issue can be addressed.

Breeder trials in Ireland, where wet-weather disease pressure is typically higher than England and Wales, indicate how Aleksandra is able to cope.

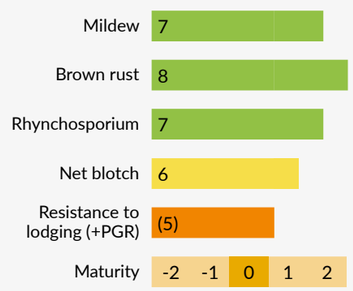
Harvest 2023 untreated Aleksandra was 16% higher yielding than KWS Tardis and 18% higher yielding than Bordeaux, with a higher specific weight.

Treated Aleksandra was 8% and 10% higher yielding respectively with a notable improvement on specific weight.

ALEKSANDRA - 2 ROW

Data drawn from AHDB RL 5-year report 2019-23

- Aleksandra is a two-row feed barley with **exceptional** disease resistance and the highest untreated yield and specific weight of **any** variety available today
- Treated yield on par with KWS Tardis in Agrovista and breeder trials
- Untreated yield highest of any variety three years running
- Medium to long strawed perfectly suited to livestock farmers - easy to manage feed variety with max straw yield
- PGR recommended



REGION	YIELD
UK	101.1
EAST	102
WEST	(101)
NORTH	99
Untreated yield	97
Light soils	(100)
Heavy soils	(101)
Spec. weight	72.2

Bracketed data highlights a low number of trials in dataset and cannot be presumed accurate.

Aleksandra yield, grain quality, height and standing, Ireland harvest 2023

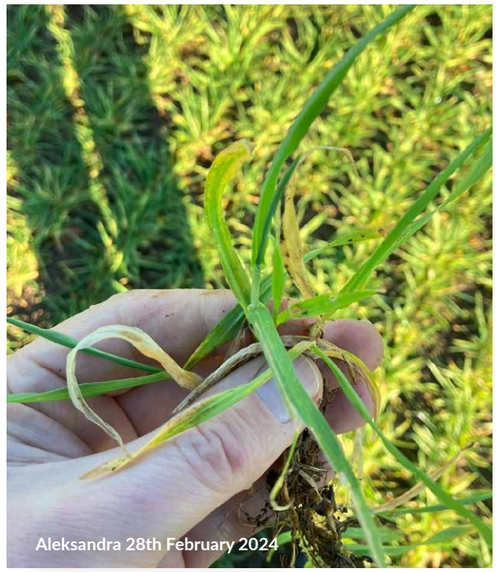
Drilled: 10/10/2022 Harvested: 13/07/2023

Treated	Relative yield as a % of control (15%MC)	Specific weight (kg/hl)	Plant height (cm)	Straw breakdown (%)	Straw breakdown (%)
	7.2 t/ha	13/07/2023	15/06/2023	06/07/2023	13/07/2023
CASSIA (C)	86	62	70	32	60
INFINITY (C)	97	58	73	32	48
BELFRY (C)	117	60	90	47	67
KWS TARDIS	98	61	68	23	47
BORDEAUX	94	62	72	22	38
ALEKSANDRA	**104**	**64**	**78**	**35**	**53**

Untreated	Relative yield as a % of control (15%MC)	Specific weight (kg/hl)	Plant height (cm)	Straw breakdown (%)	Straw breakdown (%)
	5.6 t/ha	12/07/2023	15/06/2023	06/07/2023	12/07/2023
CASSIA (C)	102	61	80	80	35
INFINITY (C)	85	57	80	65	90
BELFRY (C)	113	50	100	85	95
KWS TARDIS	106	60	80	45	80
BORDEAUX	104	60	75	30	70
ALEKSANDRA	**122**	**61**	**90**	**55**	**95**

Trial sown after winter wheat
Extremely heavy rainfall in November 2022 followed by a wet March and warm, dry June lead to lower yields

Untreated Aleksandra was 16% higher yielding than KWS Tardis and 18% higher yielding than Bordeaux, with a higher specific weight


Aleksandra 28th February 2024

Andy Steven, Agrovista agronomist in Friockheim, Angus, Scotland has also been impressed with the cleanliness of Aleksandra, sending us a picture late February.

In Scottish official trials 2023 (3 sites) Aleksandra was the highest yielding 2-row variety untreated with a mean specific weight of 67.4 kg/hl (1.5 higher than anything else).

Livestock farmers could potentially reap the most benefit from Aleksandra, with its long straw and high specific weight, especially if feed is partially home-grown. High specific weight means more starch per tonne and longer straw, more bales of quality straw per hectare for bedding and feeding. Robert Vines grew Aleksandra for seed harvest 2023 near Marlborough, Wiltshire. Also being a livestock farmer, he was keen to bale the straw.

“We got 349 big round bales off 14 hectares – not bad!” The crop was drilled following maize and stood well all season. “Being a seed crop, we looked after it, ensuring it stood” “The crop ripened consistently and was pleasing to combine” he went on to say.

Grain quality

There is a direct link between Aleksandra’s disease resistance and its superb specific weight. Unlike wheat where yield is reliant on a disease-free leaf one and two, in barley earlier infections pre-GS31 are more important. These can reduce photosynthetic area, restrict tillering and result in lower yields. Foliar disease infections after GS 39 can result in smaller grains and higher screenings. Nevertheless, in most situations fungicides will boost yield and keep crops healthy as they develop through growth stages and through canopy greening or growth regulatory effects.

One of the outstanding qualities of Aleksandra is its exceptionally high specific weight, in fact it has the highest specific weight of any winter barley trialled to date through the AHDB Variety (VL) and Recommended List (RL) candidacy trials, better than the previous best KWS Cassia with an additional 14% higher yield untreated. With high specific weight comes consistency of yield - whatever the weather yield is safeguarded by the genetic capability of the plant to build starch at maximum efficiency.

	Specific weight (kg/h)
ALEKSANDRA	**72.2**
LIGHTNING	68.8
TARDIS	70.1

Aleksandra specific weight (AHDB)

Aleksandra also has notably lower screenings than rival varieties, in fact the lowest screening losses of all winter barley varieties in RL trials 2023.

	Through 2.25mm	Through 2.5mm
ALEKSANDRA	**1.2%**	**3.0%**
LIGHTNING	1.9%	5.4%
TARDIS	1.7%	5.2%

Screening losses by sieve size. (AHDB).

Being a seed crop, we looked after it, ensuring it stood. The crop ripened consistently and was pleasing to combine

Robert Vines
Livestock farmer, Marlborough, Wiltshire

Standing ability

Aleksandra is a medium to long strawed variety that will benefit from a comprehensive plant growth regulator programme when following a break crop or grown in highly fertile situations. Official trials grown in the UK and Ireland have experienced various levels of lodging, but it is important to explain that variety trials are managed by average plant growth stage and therefore treatments may not be applied at their optimum time. Furthermore, trials specifically to assess lodging are generally grown in highly fertile situations and managed to maximise the risk of lodging occurring, following a break crop of peas by example. Where grown in a more typical winter barley situation, such as a second or third cereal or on lighter soils, then lodging has not been an issue.

“This is my second year of growing Aleksandra for seed” “Last year’s crop yielded just short of 8t/ha with a specific weight of 67kg/hl at 13% moisture. Screening losses were very low and the straw yield extraordinary” concluded Robert.

By comparison seed crops of KWS Tardis and LG Caravelle averaged 65.3 kg/hl and 62.1 kg/hl. While there was only one seed crop of Aleksandra in 2023, initial performance has been most promising with a commercial crop achieving the grain quality and yield that early indication trials suggested.

Physical grain quality Aleksandra winter barley

	Specific weight (kg/hl)	TGW (gms)	Screenings through 2.25mm sieve (%)	Screenings through 2.25mm sieve (%)	Yield (t/ha)
ALEKSANDRA	**67.4**	**55.4**	**2.0**	**0.6**	**7.8**
TARDIS	63	54	12.0	3.2	6.18
TARDIS	65.8	43.5	35.4	17.8	5.45
TARDIS	67.3	54.4	13.0	4.6	7.93
CARAVELLE	56.3	45.7	18.8	7.5	5.4
CARAVELLE	64.8	45.2	17.3	4	8.3
CARAVELLE	65.2	49.8	8.9	2.8	6.67

Seed treatment

Agrovista exclusive

SEED TREATMENT

Voltek

Voltek seed treatment for cereals

Our exclusive cereal seed treatment Voltek is commercially available, but we continue to test and trial the product to ensure that our customers continue to receive value for money relative to crop income and other competitor products.

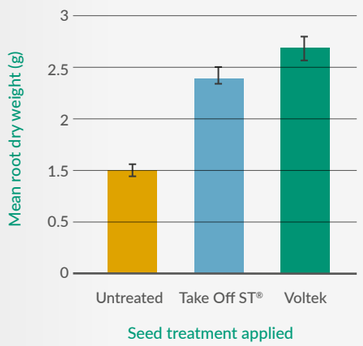
Voltek is a unique biostimulant seed treatment complex for cereal and oilseed rape crops that supports germination and improves crop establishment. In light of difficult spring 2024 drilling conditions, demand for the novel seed treatment was exceptionally high with 750 tonnes being treated nationally.

We would recommend it ought to be included as a key establishment tool for this coming autumn too, giving young seedlings the best possible start, helping to counter whatever stresses and establishment challenges are encountered.

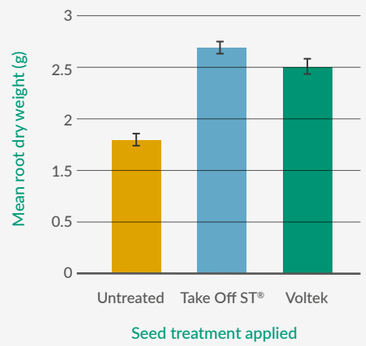
Nottingham University and Agrovista have been involved in the trialling and development of Voltek for some time. Recent assessments by Nottingham University on root development versus untreated and against other commercially available products have shown marked benefits in favour of Voltek.

Voltek – Nottingham University July 2023

Effect of seed treatment on root growth 25 d after GS12 transplant



Effect of seed treatment on shoot growth 25 d after GS12 transplant



Error bars = 95% confidence limits

SOURCE: Data kindly supplied by Unium Biosciences Ltd.

CONCLUSIONS

1. Voltek show 10% increased emergence
2. Voltek increases rooting significantly
3. This builds greater robustness to drought etc
4. Its not surprising Take Off ST® has more shoots as Voltek diverts the energy to the root production
5. Voltek is approx 40% lower cost
6. Manufacturer trials in 2022 showed Voltek gave a 0.75t/ha winter wheat yield increase over Take Off ST®

Recent assessments by Nottingham University on root development versus untreated and against other commercially available products have shown marked benefits in favour of Voltek

Untreated

Voltek

Unlike other commercially available root stimulant seed treatments Voltek contains both a phosphite and an innovative metabolite called Pentanoate which is an organic keto acid-based compound proven to positively influence a range of biological processes including root lengthening and biomass, and chlorophyll production leading to heightened photosynthetic capacity.

Phosphite enhances the activity of an enzyme called Nitrate Reductase which is key in nitrogen assimilation in young seedlings, catalysing nitrate to nitrite conversion to build plant biomass and structures. The effect of phosphite on Nitrate Reductase activity is more pronounced under mild stress.

Voltek's positive effects on establishment are enhanced when conditions are less than favourable as root stimulation enables better access to water and soil nutrients from day one.

Improved germination

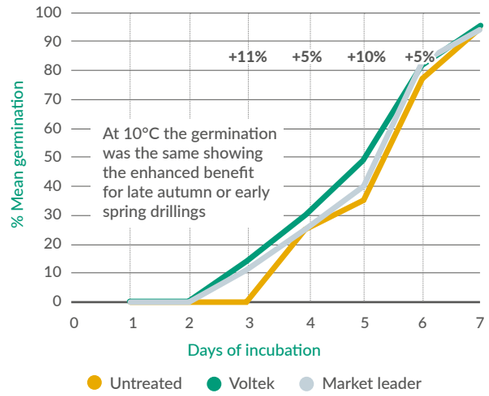
Trials in 2021 by Nottingham University showed that regardless of incubation period use of Voltek as a seed treatment enhanced germination percentage over untreated and was consistently better than other competitor products.

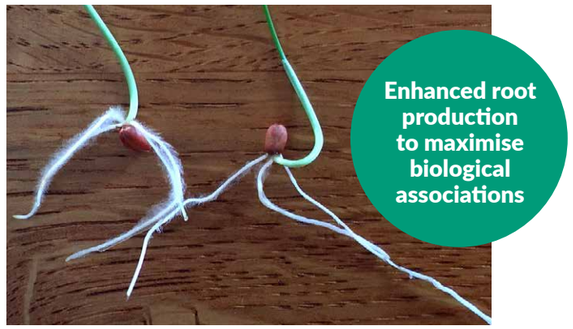
These differences remained when incubation temperature was adjusted, which highlighted that whether growers drilled late autumn or early spring Voltek would retain its efficacy over competitors.

Voltek benefits from the day the seed is drilled

- Enhanced germination
- Increased root and shoot biomass
- Improved establishment rate and crop uniformity
- Increased stress tolerance including over wintering

Timecourse of wheat germination at 7°C with seed dressings University of Nottingham 2021





Enhanced root production to maximise biological associations

Voltek can be safely applied with all other seed treatments. Where used in conjunction with Tiros Max an adjusted version excluding phosphite called Voltek Bio is used.

Disclaimer: Trials data and imagery kindly provided by Unium Bioscience Limited

TIROS MAX + Voltek BIO

TIROS MAX and Voltek Bio seed treatment

Tiros Max is an enhanced version of the original TIROS nitrogen-fixing seed treatment commercialised by Agrovista exclusively in 2020. Voltek Bio is a biostimulant complex metabolite containing a unique blend of keto acid, amino acids, and additional nutrients.

By choosing to use Tiros Max and Voltek Bio seed treatments in combination, growers are addressing the biological and biostimulant requirements of a crop right from day one.

Tiros Max contains enhanced endophyte colonies – the microorganisms found between living plant cells. Endophytes can influence a range of beneficial behaviours in a plant including fostering growth, fixing nitrogen and reducing the impact of abiotic stress. More colony forming units per seed lead to better colonisation overall and ultimately more consistent results. Enhanced colonisation will maximise the nitrogen fixing and phosphate sequestering power of the endophytes.

Because Tiros Max optimises what is available in the soil, it reduces the reliance on artificial fertiliser products. The specific bacterial endophytes present in Tiros Max have been carefully selected to fix atmospheric nitrogen and sequester other nutrients from the soil, living within the whole plant from roots to shoots. This results in improved root and shoot biomass, which leads to increased drought stress tolerance. Initially, given some seedbed conditions, Tiros Max-treated seed can be slower to emerge. The complex prioritises the plants resources to where they are most needed which can be root growth ahead of shoot growth.

In contrast, Voltek Bio is a biostimulant metabolite complex which boosts nitrogen and carbon uptake, to aid germination and support crop establishment. In doing so, it maximises the nutrients made available by Tiros Max, whilst helping to stimulate the plant to grow away from potential stresses and pressures.

Harnessing the power of these targeted products in combination provides a connected approach to early plant nutrition, helping growers to make the most of crop establishment and to benefit the plant longer term.

Tiros Max and Voltek Bio will be available to Agrovista customers from autumn 2024.

The implications of this guidance, alongside environment, cultivation etc can have consequences for crop establishment and one advantage of the endophytes in the Unium Bioscience's seed treatment, Tiros Max, is the ability to reduce these impacts and ensure the crop prioritises resource to where it is most needed, often this is into root growth ahead of shoot growth.

Companion cropping

Establishing a companion crop with cereals or oilseed rape can have multiple benefits including acting as a trap for pests, supressing weeds, protecting soils, managing nutrient efficiency and providing habitat for wildlife including pollinators and natural pest predators.

The SFI CIPM3 action for integrated pest management pays £55/ha for establishing companion crops on arable and horticultural ground making the practice more attractive than ever.

However, there are agronomic considerations to take into account such as ensuring any companion crop chosen is suitable for use within existing herbicide programmes.

Your Agrovista agronomist is able to provide you with all the help and advice you may need in deciding if companion cropping is for you, from choosing the right species and providing the seed to designing a complete crop protection programme that ensures your companion crop meets the aims of the action and delivers the potential benefits.

OSR varieties

Risk-sharing offer 2024

Our risk sharing offer extends to all oilseed growers with an opportunity for those wishing to grow a hybrid or conventional line variety.

Hybrid

DK Extremus bred by Bayer DeKalb

DK Extremus is a well established hybrid benefitting from excellent early vigour and rapid establishment. DK Extremus is the perfect hybrid for early drilling as it will not overgrow going into the winter months resulting in a much more manageable crop in the spring.

DEKALB ESTABLISHMENT SCHEME

Available with the DeKalb establishment risk share scheme
subject to grower enrolment

- DK Extremus displays all the characteristics that make DeKalb hybrids so popular in the marketplace
- Well suited to early August drilling with excellent vigour leading to rapid establishment
- Early to flower and mature with excellent disease scores and strong verticillium wilt resistance makes DK Extremus a very robust variety suitable for the majority of growers RLM7 and pod shatter resistance complete an excellent all round package

Regional suitability: E W N

Light leaf spot	7
Stem canker	8
Resistance to lodging	8
Maturity	2 3 4 5 **6**

AGRONOMIC DATA	
National list	UK
E & W	101%
North	98%
Oil content	45.4%
Plant height	152
TuYV resistance	–
Pod shatter resistance	Yes

Conventional

Codex bred by KWS

With the Codex risk share offer the grower only pays royalty on the area established by 31 October. Any failed areas declared by this date will not be liable for any royalty payment. BIPO are responsible for collecting royalty payments for this variety.

- Codex has very vigorous autumn growth capability coupled with good spring vigour
- Codex carries the RLM7 phoma-resistance gene offering maximum resilience against this pathogen and also demonstrates durable resistance to light leaf spot and good tolerance to verticillium stem stripe
- Such a combination offers strong establishment potential while excellent standing ability ensures seed yield is safeguarded through to harvest

Regional suitability: E W

Light leaf spot	6
Stem canker	9
Resistance to lodging	8
Maturity	1 2 3 4 **4.5**

AGRONOMIC DATA	
National List	UK
E & W	101%
Oil content	44.9%
Plant height	162
TuYV resistance	–
Pod shatter resistance	–

Agrovista exclusive

One massive point of difference with RGT Paparazzi is its excellent phoma resistance, which comes from a unique source. It is a complex resistance that does not revolve around a single gene. To top it off, it has very good vigour and good winter hardiness. It's certainly one to look out for this coming autumn, when it will be available for commercial cropping for the first time.

Lee Bennett
Managing Director
RAGT

RGT PAPARAZZI

RGT Paparazzi

Hybrid oilseed rape

A high-biomass variety with a different canopy style that is more manageable than most big leafy varieties.

RGT Paparazzi bred by RAGT

Hybrid

- RGT Paparazzi is an RL Candidate variety and is one of the highest yielding in the E&W trial series
- A large but very manageable canopy with excellent standing power ensures that Paparazzi is well placed to maximise it's yield potential
- The variety also benefits from a unique source of phoma resistance and a solid light leaf spot score
- Suitable for early drilling and benefitting from pod shatter resistance for reliable harvest yield

Regional suitability: E W

Light leaf spot	6
Stem canker	8
Resistance to lodging	8
Maturity	2 3 4 **5** 6

AGRONOMIC DATA	
Currently in Candidate List Trials	
E & W	105%
Oil content	45.1%
Plant height	154
TuYV resistance	–
Pod shatter resistance	Yes

PI Pinnacle bred by Mike Pickford

Conventional

- Pi Pinnacle from Cotswolds based Mike Pickford, the last independent OSR breeder
- Pi Pinnacle has a high number of pods per plant producing an abundance of seed which has helped to make the variety the highest yielding conventional OSR available in the UK today
- Early vigour is a match for Campus with yield a good 5% higher than that variety
- Good standing power and light leaf spot scores complete an impressive all round package

Regional suitability: E W N

Light leaf spot	7
Stem canker	4
Resistance to lodging	8
Maturity	2 3 4 **5** 6

AGRONOMIC DATA	
RL	2024/25
E & W	103%
North	101%
Oil content	44.4%
Plant height	148
TuYV resistance	–
Pod shatter resistance	–

WRH637 (Cognac) bred by DSV

Hybrid

- WRH637 (Cognac) from DSV is the first hybrid to have the LepR1 + Rlm7 phoma blocker resistance genes resulting in reduced risk of breakdown to this damaging disease
- Exceptional yield figures in both the E & W and north regions combined with robust standing power ensure a succesful harvest
- Pod shatter resistance adds an additional layer of security helping to maximise combinable yield

Regional suitability: E W N

Light leaf spot	6
Stem canker	9
Resistance to lodging	8
Maturity	2 3 4 5 **6**

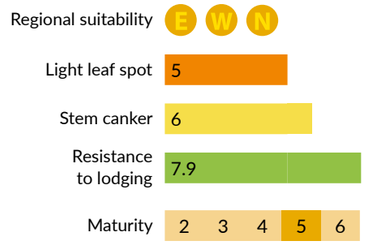
AGRONOMIC DATA	
Currently in Candidate List Trials	
E & W	107%
North	107%
Oil content	46.5%
Plant height	151
TuYV resistance	Yes
Pod shatter resistance	Yes

Clearfield

BEATRIX CL bred by DSV

Hybrid

- Displays exceptional gross output for a Clearfield variety. Quad trait hybrid offering TuYV, pod shatter, RLM7 stem canker resistance and Clearfield technology
- Early to mature with a medium height canopy giving very good lodging resistance
- Outstanding winter hardiness



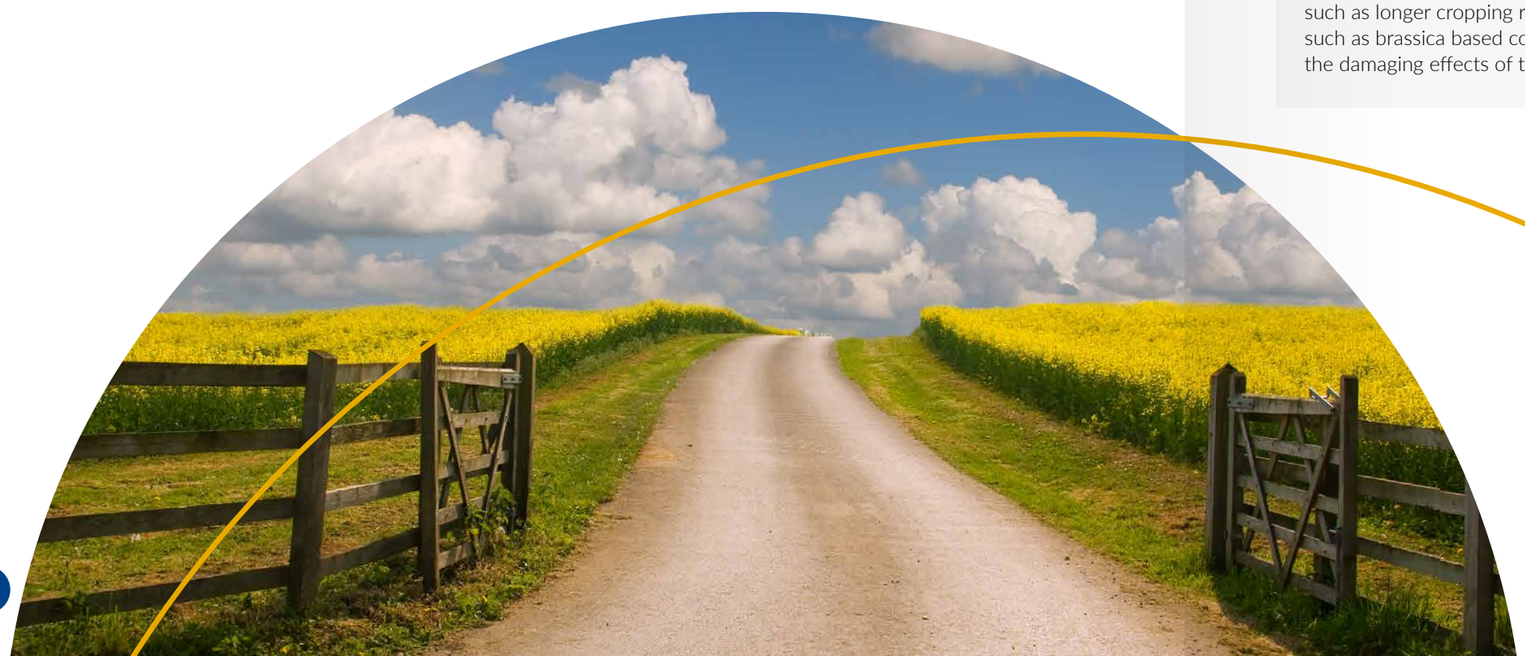
AGRONOMIC DATA	
RL	2024/25
E & W	96%
North	92%
Oil content	45.8%
Plant height	145
TuYV resistance	Yes
Pod shatter resistance	Yes

MATRIX CL bred by DSV

Hybrid

- Highest yielding Clearfield variety on the recommended list. Quad trait hybrid with TuYV, pod shatter, RLM7 and Clearfield technology
- Early maturity and good lodging resistance
- Matrix CL is without doubt the premium recommended list Clearfield variety available in the UK marketplace

AGRONOMIC DATA	
RL	2024/25
E & W	97%
North	94%
Oil content	45.6%
Plant height	151
TuYV resistance	Yes
Pod shatter resistance	Yes

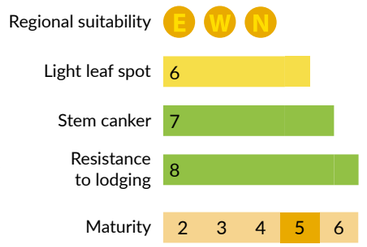


Clubroot tolerant

CROMPUTER CR bred by DSV

Hybrid

- Crompuer is the first of the next generation of clubroot tolerant hybrids
- Significant yield increase compared to existing clubroot types especially in the north
- Solid disease scores and TuYV protection help to make Crompuer an easy variety to grow
- High vigour aids fast establishment and a later flowering date protects against late frosts



AGRONOMIC DATA	
Currently in candiate list trials	
E & W	99%
North	101%
Oil content	45.4
Plant height	158
TuYV resistance	Yes
Pod shatter resistance	-

CROME bred by LSPB

Hybrid

- Crome has consistently achieved high yields in the north with the added benefit of clubroot disease tolerance
- Early flowering but with slightly later maturity than Crossfit or Crocodile
- Good light leaf spot resistance underlines Cromes suitability for oilseed rape production in northern regions
- Medium height with good lodging resistance

AGRONOMIC DATA	
RL	2024/25
North	96%
Oil content	45.8
Plant height	139
TuYV resistance	–
Pod shatter resistance	–

Clubroot tolerant oilseed rape varieties are capable of tolerating the more common strains of the clubroot pathogen but new strains are evolving constantly so complete resistance is not possible. Good agronomic practice such as longer cropping rotations, maintaining soils at pH7, delaying drilling and reducing the prevalence of hosts such as brassica based cover crops as well as using a clubroot tolerant oilseed rape variety will all help to reduce the damaging effects of this disease.

OSR VARIETIES

agrovista
seeds

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05/24