



Having experienced extreme weather patterns and a pandemic in the last two years, just when we thought it safe to 'step back into the water', the Ukraine invasion and subsequent cataclysmic fallout has moved us all into further uncharted territory!

The oilseed rape market increased to circa 389,000 hectares last autumn (still significantly behind the 790,000ha drilled in autumn 2019), but there is a very real chance that we will see a further bounce back in autumn 2022, given the success of how the autumn 2021 crop established. With the prospect of even higher oilseed prices at the farm gate and very substantial oil bonuses, this will undoubtedly drive the OSR market forward given the extended break some growers have now had and with a fall in flea beetle numbers nationally also lending optimism. The key features should be Hybrid, TuYV resistance, Pod Shatter resistance, robust disease scores and vigour (all can be found within the hybrid portfolio on offer). The offer for conventional varieties will also remain essential, with this market shrinking slowly but remaining key to many growers.

Hybrid wheat remains on the horizon, albeit now actually a little closer than at this time last year we believe (this will hopefully be an even more realistic prospect to discuss next year). Hybrid barley will continue to be the focus for the hybrid sector at present, with more varieties entering the fold to offer advancement in agronomics. New genetics mean that BYDV tolerant hybrid barley is fast approaching and could be commercially available from autumn 2023. 30% plus will continue to be its market share.

As it stands at time of writing, varietal choices and end markets will be key in the decision-making process, given the significant cost of AN and the prices that may be achieved for the crops when being sold. Securing key varieties for specific markets will be of increased importance.

KWS Dawsum, and **Champion** are two new wheats of note, and **Crusoe** and **RGT Illustrious** will be milling varieties that are both short in the marketplace and offer exceptional milling quality. **Extase** still offers unmatched untreated yield and a quality end market. **KWS Tardis** will be the key conventional winter barley, and **KWS Feeris** offers new momentum for BYDV tolerant conventional barleys. However, there are many other varieties covered within these pages to consider.

We will aim to advise and support with relevant and timely information on cropping, cover crops and stewardship options to enable our customers to make key decisions, in another year with no comparisons in terms of input and/or output prices.

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LG Aviron

There can be little doubt that OSR will increase in the area planted for 2022, so the need to find the ideal variety that suits both region and soil types is key. With this in mind, we would like to draw your attention to **LG Aviron**. On the AHDB Recommended List, it has excellent yield and gross output across the UK.

With this universal ability to perform across the regions, coupled with RLM 7+ Phoma resistance (7), **THE BEST** light leaf spot (8), coupled with TuYV which is now a key consideration and the addition of pod shatter resistance, plus the N Flex characteristic to aid development, this variety has all the attributes that you need to consider.

Although the ideal drilling position would be 15th August to 10th September, it can be drilled earlier (but with attention paid to a robust PGR programme due to the excellent autumn vigour, second to none), or indeed later if the soils remain warm and there is moisture to utilise. (We would have no concern if drilled mid-September and beyond given these conditions) Aviron has what

appears to be the most robust and enabling vigour in the autumn, coupled with an excellent spring vigour trait, that really can inspire some confidence in its establishment once drilled.

LG Aviron

If OSR is a key part of your rotation, (and all indicators point to it being very likely for autumn 2022), then Aviron should in turn be a key part of that crop portfolio.



if the soils remain warm and there is moisture to utilise. (We would have no concern if drilled mid-September	Variety type Scope of recommendation	Hybrid UK
and beyond given these conditions) Aviron has what	Gross output, yield adjusted for (% TREATED CONTROL)	oil content
0.0000000000000000000000000000000000000	United Kingdom (5.3 t/ha) East/West region (5.2 t/ha) North region (5.9 t/ha)	105 105 104
t: 01526 832771	Seed yield (% treated control) (% TREATED CONTROL))
e: seedorders@hlhltd.co.uk www.hlhltd.co.uk	East/West region (4.8 t/ha)	107 107 106 -
	Agronomic features	
	Resistance to lodging (1–9) Stem stiffness (1–9) Shortness of stem (1–9) Plant height (cm) Earliness of flowering (1–9) Earliness of maturity (1–9) Pod shatter	[7] 7 6 156 8 6 R
	Disease resistance	
ALL THE STATE OF T	Light leaf spot (1–9) Stem canker (1–9) TuYV	8 7 R

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Oilseed Rape

Variety Notes 2022

RECOMMENDED LIST CHART PAGES 44 - 45



LIMAGRAIN

RESTORED HYBRID

Gross Output: 107 (UK) • Oil content: 45.4
TuYV resistant • Recommended for UK

 A restored hybrid variety, recommended for the UK

LODGING	8
STEM STIFFNESS	7
SHORTNESS	6
EARLY FLOWER	7
EARLY MATURITY	6
LLS	7
STEM CANKER	7

- Pod Shatter resistance.
- Limited data set for North.



LIMAGRAIN

RESTORED HYBRID

Gross Output: 105 (UK) • Oil content: 44.3
TuYV resistant • Recommended for UK

- Added to list in 2021
- Best LLS of any recommended variety offering highest untreated yield on the Recommended List
- Exceptional autumn and spring vigour
- Suited for a main to late drilling window

LODGING	7	
STEM STIFFNESS	7	
SHORTNESS	6	
EARLY FLOWER	8	
EARLY MATURITY	6	
LLS	8	
STEM CANKER	7	

- Fully loaded hybrid N-Flex, RLM7+, POSH, TuYV
- Consistent high yield performance across all regions.
 (3rd East/West and joint 2nd in the North)
- Hutchinsons' semi exclusive.





LIMAGRAIN

RESTORED HYBRID

Gross Output: 105 (UK) • Oil content: 45.0
TuYV resistant • Recommended for UK

- Restored hybrid added to the RL in 2020 and joint highest yielding variety in the North
- TuYV resistance coupled with Pod shatter
- Excellent disease resistance, so in essence a good all-round variety with excellent vigour

LODGING	8
STEM STIFFNESS	8
SHORTNESS	6
EARLY FLOWER	7
EARLY MATURITY	5
LLS	7
STEM CANKER	7

 Most widely drilled variety in autumn 2020.



NOTES: if growing OSR in autumn 2022, this should be a variety of choice.

DK Exstar

DEKALB

RESTORED HYBRID

Gross Output: 105 • Oil content: 45.3
UK VARIETY • BREEDER'S DATA

- Restored hybrid for the UK
- Has produced high gross output in the North region

LODGING	9
STEM STIFFNESS	8
SHORTNESS	6
EARLY FLOWER	6
EARLY MATURITY	6
LLS	8
STEM CANKER	8

- Good resistance to light leaf spot and stem canker
- Relatively tall variety but has good resistance to lodging.



DEKALB

RESTORED HYBRID

Gross Output: 104 (UK) • Oil content: 44.0

Candidate for UK 2022

- SEMI EXCLUISVE to Hutchinsons
- Candidate for autumn 2022
- Consistent in all regions

8
8
8
4
6
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8

- Suited to early drilling slot
- Excellent autumn vigour.





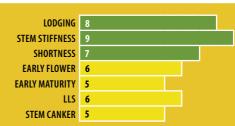
LIMAGRAIN

CONVENTIONAL

Gross Output: 104 (UK) Oil content: 45.3

Recommended for UK

- Added to the RL in 2020 a later maturing variety, with the highest treated gross output of any recommended conventional variety currently available
- Recommended for all regions



- Very stiff stemmed, with a high resistance to lodging and excellent agronomics
- Excellent autumn and spring vigour for a conventional type.





LIMAGRAIN

CONVENTIONAL

Gross Output: 103 (UK) • Oil content: 45.2
TuYV resistant • Recommended for UK

- Added to the 2022/23 Recommended List
- · Performs well in all regions.



- Good autumn vigour and better than some of its contemporaries.
- TuYV resistance trait in a conventional variety.





CAMPUS

KWS

CONVENTIONAL

Gross Output: 103 • Oil content: 44.4

UK VARIETY

- No longer on AHDB list but can still be seen as the standout control on the candidate list
- Remarkably consistent
- Good disease resistance
- 2nd in terms of area to Acacia

LODGING	9		
STEM STIFFNESS	8		
SHORTNESS	8		
EARLY FLOWER	5		
EARLY MATURITY	5		
LLS	6		
STEM CANKER	6		

IF LIST

- Short stiff strawed
- · Widely grown now for 7 years and still holding strong
- Growers' favourite, yet to let anyone down with better ability to withstand verticillium wilt.





BLAZEN

KWS

CONVENTIONAL

Gross Output: 101 (NORTH) • Oil content: 44.5

Recommended for North Region

 Added to the RL in 2020 - a later maturing variety, with high treated gross output recommended for the North region

LODGING	8	
STEM STIFFNESS	9	
SHORTNESS	6	
EARLY FLOWER	6	
EARLY MATURITY	5	
LLS	7	
STEM CANKER	6	

- Very stiff stemmed, with a high resistance to lodging and excellent agronomics
- Available with establishment protection scheme.

PICASSO

LSPB

RESTORED HYBRID

Gross Output: 107 (E/W) • Oil content: 44.8

Common catalogue

- Common catalogue variety with excellent Phoma resistance
- Good autumn vigour

- LODGING 9
 STEM STIFFNESS 8
 SHORTNESS 7
 EARLY FLOWER 6
 EARLY MATURITY 7
 LLS 6
 STEM CANKER 9
 - Good standing ability
 - Good resistance to lodging with medium maturity.

TENNYSON

ELSOMS

RESTORED HYBRID

Gross Output: 104 (E/W) • Oil content: 45.2

Recommended for East/West

- Added to the Recommended List for 2022
- TuYV resistant

- LODGING 8
 STEM STIFFNESS 7
 SHORTNESS 6
 EARLY FLOWER 6
 EARLY MATURITY 5
 LLS 7
 STEM CANKER 9
 - Excellent stem canker
 - Performs very well in the East/West to date.



DK Expedient

DEKALB

RESTORED HYBRID

Gross Output: 103 • Oil content: 45.4

East/West Variety • NO LONGER LISTED (2021 DATA)

- Variety for East/West regions
- RLM7 Phoma Resistance giving strong resistance to Stem Canker
- Average resistance to Light Leaf Spot

LODGING	8
STEM STIFFNESS	8
SHORTNESS	6
EARLY FLOWER	8
EARLY MATURITY	6
LLS	5
CTEM CANVED	•

- Very early spring regrowth with mid/late flowering
- Good yield potential and oil content
- Pod Shatter Resistance.

DAZZLER

DSV

RESTORED HYBRID

Gross Output: 99 (E/W) • Oil content: 46.1 TuYV resistant • Recommended for East/West

- Added to the RL in 2020
- DSV's flagship triple layer variety
- Multi gene resistance RLM7 resistance, TuYV resistance and pod shatter resistance
- · Delivers high gross output

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9			
6			
8			
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	9 6 8 6 6	9 6 8 6 6	9 6 8 6 6

- Outstanding Autumn vigour
- Has no lodging weakness and has good stem stiffness.



PROTECTOR SCLEROTINIA

PIONEER® VARIETY

Gross Output: 107 (UK) Oil content: 46.0

- First Protector® Sclerotinia hybrid launched in Europe
- TuYV resistance

LODGING 8 STEM STIFFNESS 8 SHORTNESS 5 FARIY FLOWER 5 EARLY MATURITY 5 LLS 7 STEM CANKER 7

 Highest yielding recommended variety for Gross Output in UK.





MATRIX CL

Clearfield® Hybrid Oilseed Rape

DSV

CLEARFIELD® HYBRID

Gross Output: 99 (UK) • Oil content: 45.8

- Recommended for UK TuYV resistant
 Clearfield® hybrid with TuYV resistance added
- High oil content
- First quad trait stacked variety

to 2022 Recommended List

LODGING	8
STEM STIFFNESS	8
SHORTNESS	5
EARLY FLOWER	6
EARLY MATURITY	6
LLS	6
STEM CANKER	8

- Highest yielding UK recommended Clearfield variety
- Pod shatter resistance.



DK Immortal CL

DEKALB

CLEARFIELD° HYBRID

Gross Output: 100 • Oil content: 45
East/West Variety • TuYV resistant
BREEDER'S DATA

- A European Clearfield® hybrid variety.
- Available in very small quantities in autumn 2021

LODGING	8
STEM STIFFNESS	7
SHORTNESS	7
EARLY FLOWER	6
EARLY MATURITY	6
LLS	6
STEM CANKER	8

 Step on from DK Imprint and DK Impressario.

PT279 CL

PIONEER

CLEARFIELD° VARIETY

Gross Output: 94 (E/W) • Oil content: 44.8 Recommended for East/West

A European Clearfield® hybrid variety.

LODGING 8
STEM STIFFNESS 8
SHORTNESS 6
EARLY FLOWER 6
EARLY MATURITY 6
LLS 5
STEM CANKER 5

CROME

LSPB

RESTORED HYBRID

CLUBROOT RESISTANT

Gross Output: 99 (UK) • Oil content: 46.3

Recommended for Clubroot infected land only (UK)

Clubroot resistance

LODGING 8

STEM STIFFNESS 8

SHORTNESS 6

EARLY FLOWER 7

EARLY MATURITY 5

LLS 6

STEM CANKER 4

 Suitable for sites where the Clubroot pathogen is a limitation to varieties without resistance.



LIMAGRAIN

RESTORED HYBRID

CLUBROOT RESISTANT

for Clubroot infected land only Gross Output: 102.5 • Oil content: 45.8 • BREEDER'S DATA

- For clubroot situations in East/West regions
- Good yields in East/West
- Should only be grown in areas where Clubroot is a threat!
- LODGING 8 STEM STIFFNESS 8 SHORTNESS 6 EARLY FLOWER 6 **EARLY MATURITY** 5 LLS 6 STEM CANKER 6



- on Phoma and has good standing power. TuYV resistant
- Breeder figures for comparison.

Good light leaf spot scores, but weaker



CROOZER

LSPB

RESTORED HYBRID

CLUBROOT RESISTANT

for Clubroot infected land only (E/W)

Gross Output: 96 (E/W) • Oil content: 44.5

- Recommended for clubroot situations in East/West regions
- Suitable for sites where the Clubroot pathogen is a limitation to varieties without resistance

LODGING 8 STEM STIFFNESS 8 SHORTNESS 7 EARLY FLOWER 8 EARLY MATURITY 6 LLS 6 STEM CANKER 8

 Very good Phoma resistance for the clubroot sector.



Wheat

Variety Notes 2022

RECOMMENDED LIST CHART PAGES 46 - 47



KWS ZYATT

KWS

GROUP 1 HARD

UK 98 • EAST 98 • WEST 99 • NORTH 98

- Group 1 variety with high yields, milling quality characteristics and a now average agronomic package
- Starting to be challenged significantly by yellow rust
- Now well-liked by multiple end users, careful N management required to ensure full protein specification

MILDEW	7		
YELLOW RUST	4		
BROWN RUST	6		
SEPTORIA TRITICI	6.1		
EYESPOT	6		
FUSARIUM	6		

- Good eyespot
- UKp bread export potential.

NOTES: Performs very well as a 2nd wheat. Relatively short and a good stander.



RAGT

GROUP 1 HARD

UK 97 • EAST 97 • WEST 96 • NORTH 96

- High yielding, awned Group 1 variety
- Relativity short and a good stander, better drilled towards the end September due to its rapid speed of development in the spring
- It is an early maturing variety
- High Fusarium rating makes it especially suited to be grown after maize. Yellow rust now a major concern and needs monitoring closely
- Has Pch1 eyespot resistant gene, good 2nd wheat, performs well on light soils
- The only quality wheat to have OWBM resistance, giving it a definite advantage over its counterparts
- Higher N applications needed to achieve full protein specification

YELLOW RUST 3 BROWN RUST | 8 SEPTORIA TRITICI 7

- Good Hagbergs (although has a tendency to sprout, so priority must be given to it at harvest), it also has a good specific weight
- Most flexible drilling dates currently available.

NOTES: Grown specifically for its

agronomics, over and above its milling quality in certain instances, re-enforcing its capabilities in the field, as well as its milling potential. Continues to maintain significant market share.

Starting to be more susceptible to Yellow Rust.

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LIMAGRAIN

GROUP 1 HARD

UK 96 • EAST 96 • WEST 97 • NORTH 94

- Good agronomics apart from a growing susceptibility to brown rust and eyespot, average Septoria score
- An established, consistent milling variety becoming very
 Still a very well-respected variety by the millers popular with end users for its specific quality attributes
- Best converter of Nitrogen to Protein currently available

MILDEW	7	
YELLOW RUST	9	
BROWN RUST	3	
SEPTORIA TRITICI	6.2	
EYESPOT	5	
FUSARIUM	7	

- Meets the specifications for ukp bread wheat for export, good specific weight and Hagbergs
- and maintains a niche market share.



KWS EXTASE

KWS

GROUP 2 HARD

UK 101 • EAST 100 • WEST 102 • NORTH 99

- Group 2 added to the recommended list in 2019
- Still the highest untreated yield on the RL and high treated yields in the West
- Third highest Septoria tritici resistance rating on the 2022/23 recommended list
- Very good yellow rust rating
- Has done particularly well relative to others on the light soils

MILDEW	7	
YELLOW RUST	8	
BROWN RUST	7	
SEPTORIA TRITICI	7.8	
EYESPOT	3	
FUSARIUM	6	

- Better suited to mid drilling slot (relatively tall but good stander)
- Attracting good milling premiums in current marketplace.



NOTES: Third highest Septoria Tritici resistance rating on the Recommended List at 7.8.



KWS PALLADIUM

KWS

GROUP 2 HARD

UK 100 • EAST 99 • WEST 101 • NORTH 99

- Short and stiff strawed variety
- One of the highest untreated UK yields on the RL
- Good overall disease package. Has done well as a first or second wheat

8
9
5
7.4
6
6

- Meets the specifications for bread making but not export
- Newly recommended and worth consideration in this sector.



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LIMAGRAIN

GROUP 2 HARD

UK 99 • EAST 99 • WEST 99 • NORTH 93 (2021 RL DATA)

- Group 2 variety added to the Recommended List in 2019, now no longer listed
- Only Group 2 variety to have OWBM resistance
- Stiff strawed with high resistance to yellow rust
- Possibly better suited to an earlier drilling slot
- Limited data would suggest it has UKs export potential.

MILDEW 6
YELLOW RUST 8
BROWN RUST 5
SEPTORIA TRITICI 5.4
EYESPOT 5
FUSARIUM 7

 Excellent Fusarium resistance so a variety that will perhaps fit in a maize rotation



NOTES: Only Group 2 variety to have orange blossom midge resistance.

MAYFLOWER

ELSOMS

GROUP 2 HARD

UK 97 • EAST 98 • WEST 97 • NORTH (96)

 NEW - group 2 variety with good all-round disease resistance

- MILDEW 8
 YELLOW RUST 9
 BROWN RUST 6
 SEPTORIA TRITICI 8.4
 EYESPOT 6
 FUSARIUM 6
 - UK bread making and export markets
 - Excellent resistance to Septoria.





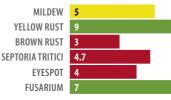
KWS GUIUM

KWS

GROUP 3 SOFT

UK 102 • EAST 102 • WEST 100 • NORTH (101)

- NEW in 2022
- Highest yielding soft group 3
- Good grain quality and makes biscuit and has distilling potential



- Attention would be required for Septoria given the lower score for this disease
- Brown rust will also need watching
- Verv robust Fusarium resistance.



Notes: Excellent yield in all regions.



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LIMAGRAIN

GROUP 3 SOFT

UK 101 • EAST 102 • WEST 101 • NORTH 99

Added to the Recommended List in 2021

MILDEW 4
YELLOW RUST 8
BROWN RUST 7
SEPTORIA TRITICI 6.4
EYESPOT 5
FUSARIUM 6

NOTES: quality group 3 with good all-round disease resistance. Bushel weight towards the lower end of the ideal.



KWS FIREFLY

KWS

GROUP 3 SOFT

UK 100 • EAST 101 • WEST 100 • NORTH 99

- Group 3 soft variety producing high treated yields in the East and West
- Now average disease package with resistance to OWBM
- Short, stiff-strawed variety

MILDEW 5
YELLOW RUST 6
BROWN RUST 5
SEPTORIA TRITICI 5.7
EYESPOT 3
FUSARIUM 5

- UKs export potential and biscuit making
- Rated as poor for distilling.



NOTES: Liked by millers and exporters alike.

LG ASTRONOMER WINTER WHEAT

LIMAGRAIN

GROUP 3 SOFT

UK 100 • EAST 100 • WEST 99 • NORTH 97

• Added to the Recommended List in 2021

MILDEW 4
YELLOW RUST 8
BROWN RUST 8
SEPTORIA TRITICI 6.8
EYESPOT 5
FUSARIUM 6



NOTES: Excellent bushel weight and the second best Septoria resistance within the group 3 sector.

Strong agronomic package with only Mildew a weakness.

Suitable for biscuit making and distilling home end markets.

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RAGT Grow to expect the best RGT BAIRSTOV

G4 WINTER WHEAT

RAGT

GROUP 4 SOFT

UK 103 • EAST 103 • WEST 103 • NORTH (103)

- NEW in 2022
- Good standing ability
- Performs well in all regions
- Suitable for distilling
- PGR programme will be needed for twin 6's

YELLOW RUST SEPTORIA TRITICI 6.4 EYESPOT 4





NOTES: new to the group 4 list, without offering anything outstanding other than being a suitable option for the North and its distilling market.





LIMAGRAIN

GROUP 4 SOFT

UK 103 • EAST 103 • WEST 103 • NORTH 102

- A very high yielding Group 4 soft variety added to the 2019 Recommended List
- A relatively tall variety, but with acceptable straw strength nonetheless. Good PGR management and later drilling will assist with any minor concerns
- Weaker on eyespot, but above average scores for yellow rust and with OWBM resistance
- Very consistent yield performance (Season v Regional).

MILDEW 7 YELLOW RUST 7 BROWN RUST SEPTORIA TRITICI 4.9 4





NOTES: One of highest yielding varieties available in any sector for autumn 2022. Pedigree (Cassius x NAWW29) x KWS Santiago Soft milling feed variety with excellent grain quality. "Good" distilling quality (+ve) in last two years.



RAGT

GROUP 3 SOFT

UK 103 • EAST 103 • WEST 103 • NORTH 102

- Group 4 feed wheat variety added to the 2020/21 recommended list
- Consistent performer across all regions

MILDEW 5 YELLOW RUST 8 BROWN RUST 7 SEPTORIA TRITICI 5.9 EYESPOT 4 FUSARIUM

- Solid disease resistance and **OWBM** resistant
- Good grain quality and straw strength.



CHAMPION

Winter Wheat

DSV

GROUP 4 HARD

UK 106 • EAST 107 • WEST 105 • NORTH 103

- Very high yielding hard group 4 for 2022
- Has performed well in first and second wheat situations on light or heavy soils
- Very high yielding in the East
- Very good in the West with accomplished Septoria resistance

MILDEW 7
YELLOW RUST 8
BROWN RUST 5
SEPTORIA TRITICI 7.7
EYESPOT 4

 A weaker strawed variety that will reach maximum potential with a robust PGR programme



OWBM resistant.

NOTES: Excellent potential but care needed on lighter soils.





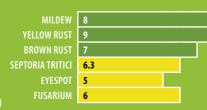
KWS DAWSUM

KWS

GROUP 4 HARD

UK 104 • EAST 103 • WEST 106 • NORTH (106)

- Very high yielding feed variety added to the Recommended List in 2022
- Produced very high yields in treated trials
- Good standing ability with strong twin 7's
- High yield potential in all regions



- Very good Hagberg and specific weight
- Stiff strawed and performs particularly well on heavy soils.



NOTES: A very safe looking wheat in the same vein as Costello.





Winter wheat

SYNGENTA

GROUP 4 HARD

UK 104 • EAST 104 • WEST 104 • NORTH 105

- A variety with high yields
- Has performed in all regions especially the North
- Very early maturing variety with reasonable disease resistance. It has weaker eyespot rating

MILDEW 6
YELLOW RUST 5
BROWN RUST 5
SEPTORIA TRITICI
EYESPOT 4

 Good Hagberg and excellent bushel weight, providing confidence in grain quality.







Winter wheat

SYNGENTA

GROUP 4 HARD

UK 103 • EAST 103 • WEST 103 • NORTH 103

- A consistent performer across the regions
- Robust agronomics and high untreated yields will offer easier management in most situations
- Performs well on all soil types, in either first or second wheat situations
- It is a short and stiffer strawed variety

MILDEW	6
YELLOW RUST	5
BROWN RUST	6
SEPTORIA TRITICI	5.8
EYESPOT	4
FUSARIUM	6



- OWBM resistant
- Good grain quality and early to mature.



NOTES: Particularly flexible wheat,
1st or 2nd, early or late drilled, good grain
characteristics, has started to be affected by yellow
rust due to the Hereford in its parentage.



LIMAGRAIN

GROUP 4 HARD

UK 102 • EAST 102 • WEST 102 • NORTH (102)

- NEW in 2022
- Good standing ability
- Performs consistently across all regions
- No disease weaknesses
- Good Septoria resistance

MILDEW	7	
YELLOW RUST	9	
BROWN RUST	6	
SEPTORIA TRITICI	7.2	
EYESPOT	6	
FUSARIUM	6	
		 _ (#) _ '

OWBM resistant



NOTES: New to the group 4 list, without offering anything outstanding in yield but a safe disease profile.





KWS CRANIUM

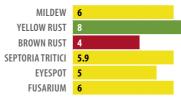
KWS

GROUP 4 HARD

UK 102 • EAST 102 • WEST 101 • NORTH 101

Added to the Recommended List in 2021.

Added to the Recommended List in 2021.





NOTES: Looks to be a genuine alternative to others within the KWS portfolio and should solve some of the potential issues that Kinetic (poor yellow rust) and Kerrin (moderate grain quality) experience.

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Winter wheat

SYNGENTA

GROUP 4 HARD

UK 102 • EAST 100 • WEST 104 • NORTH 102

- A variety with high untreated yields
- Has performed best in the West less suitable
 North of the borders
- Very early maturing variety with good all-round disease resistance and good Septoria Tritici resistance, although only weakness being a poor Eyespot rating
- Suitable for early drilling in first wheat situations

- MILDEW 7
 YELLOW RUST 7
 BROWN RUST 5
 SEPTORIA TRITICI 6.7
 EYESPOT 3
 FUSARIUM 7
 - Good resistance to sprouting
 - Good Hagberg and bushel weight, providing confidence in grain quality.



NOTES: Good for Septoria, making it a good geographical fit for the South West, whilst not undermining its national ability as a clean variety. Looks to be a suitable early drilling option.



RAGT

GROUP 4 HARD

UK 101 • EAST 102 • WEST 101 • NORTH 100

- This variety has produced consistently high treated UK yields – good 1st wheat, performing equally well on light as well as heavy soils
- Only average resistance to lodging, although has done relatively better from later drilling

MILDEW 5
YELLOW RUST 6
BROWN RUST 6
SEPTORIA TRITICI 4.7
EYESPOT 4
FUSARIUM 6

- Fusarium, brown and yellow rust are very acceptable, but has a vulnerability to mildew and eyespot
- OWBM resistance.

NOTES: Sold out in autumn 2018 taking close to 6% of market in its first year of availability. Good grain characteristics.

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Costello WINTERWHEAT

SENOVA

GROUP 4 HARD

UK 100 • EAST 99 • WEST 100 • NORTH 100

- Short and stiff strawed with high Hagberg and with a specific weight second to none
- Very robust agronomics give this variety a good untreated yield and it is an ideal 2nd wheat candidate
- Ideal to be positioned on outlying farms, whilst maintaining peace of mind

- MILDEW 8 YELLOW RUST 9 BROWN RUST 5 SEPTORIA TRITICI 5.8 EYESPOT 4 FUSARIUM 6
 - Good resistance to sprouting
 - Relatively late maturing variety.

NOTES: Highest specific weight of any winter wheat currently available. A safe option for all the right reasons, without being at the summit for pure yield. Still a useful and farmer friendly variety.

Grow to expect the best

RAGT

GROUP 4 HARD

UK 99 • EAST 98 • WEST 100 • NORTH (100) **BYDV Resistant Trait**

- A feed variety added to the 2021 AHDB Recommended List
- BYDV resistance and by definition a useful management tool
- Weaker yellow rust score advocates tighter crop management particularly in the East

MILDEW YELLOW RUST 4 BROWN RUST 8 SEPTORIA TRITICI 5.7 EYESPOT 6 FUSARIUM 6

- Acceptable grain quality without being outstanding
- Suitable for drilling from mid-September onwards.

NOTES: Only BYDV resistant/tolerant variety on the Recommended List.



Winter Barley

Variety Notes 2022

RECOMMENDED LIST CHART PAGES 48 - 49



MILDEW 6
BROWN RUST 7
RHYNCHOSPORIUM 6
NET BLOTCH 5

Winter barley

SYNGENTA

TWO ROW MALTING

UK 96 • EAST 96 • WEST 95 • NORTH 95 • BaYMV Resistant

- 2 row malting variety, has full approval from MBC for brewing
- Performed best in East
- Has produced high specific weights
- Suited to heavier soils and has high brown rust rating

· Has been seen to be relatively early maturing

Resistant to BaYMV strains.

MILDEW

BROWN RUST 7
RHYNCHOSPORIUM 6

NET BLOTCH 6

NOTES: Malting variety suited to the East and West regions with full MBC approval.



SYNGENTA

TWO ROW MALTING

UK 95 • EAST 95 • WEST 94 • NORTH 96 • BaYMV Resistant

- Malting variety, has full approval from the MBC for brewing with good agronomic characteristics
- Stiff-strawed and has performed better on light soils
- Resistant to common strains of BaYMV.

KWS

KWS TARDIS

MILDEW 5
BROWN RUST 6
RHYNCHOSPORIUM 7

5 6 7

KWS

TWO ROW FEED

UK 105 • EAST 106 • WEST 104 • NORTH 104 • BaYMV Resistant

- Highest yielding 2 row barley currently available in the UK market place
- Stiff strawed

Very good resistance to Rhynchosporium.



Notes: sold out early in 2021 and although more widely available this season will sell well again

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	UN



NET BLOTCH

ELSOMS ACKERMANN

TWO ROW FEED

UK 104 • EAST 105 • WEST 102 • NORTH 103 • BaYMV Resistant

- A high yielding 2 row feed barley variety for the UK
- Performs well across all regions

 Excellent grain quality with low screenings.



BORDEAUX

RHYNCHOSPORIUM 4

TWO ROW FEED

SENOVA

UK 103 • EAST 105 • WEST 101 • NORTH 103 • BaYMV Resistant

- A high yielding 2 row feed barley variety for the UK
- Very high bushel weight
- Moderate straw strength and will respond favourably to a more robust fungicide and PGR programme
- Rhynchosporium at the lower levels and will need management.



NOTES: Performs well on all soil types and across the regions.

LIGHTNING LISOMS ACKERMANN BARLEY



MILDEW BROWN RUST

RHYNCHOSPORIUM

NET BLOTCH 5

ELSOMS ACKERMANN

TWO ROW FEED

UK 104 • EAST 104 • WEST 103 • NORTH 103 • BaYMV Resistant

- Added to the RL in 2022 a 2 row feed variety
- · Very high untreated yield
- Taller strawed with good standing ability with PGR (8)
- Highest yields in the East where it performs very solidly. Good in the North and West too.

NOTES: Looks to offer excellent management opportunity, coupled with good yields across the UK.





MILDEW

BROWN RUST 8 RHYNCHOSPORIUM 7

NET BLOTCH

LIMAGRAIN

TWO ROW FEED

UK 103 • EAST 104 • WEST 101 • NORTH 102 • BaYMV Resistant

- A high-yielding two-row feed variety for the UK
- This variety has performed well in the East region
- Has shown high resistance to brown rust and good to Rhynchosporium but weaker on net blotch

Resistant to common strains of BaYMV.

NOTES: New recommendation for 2022, although accomplished, it is not quite in the top tier.





KWS HAWKING

MILDEW BROWN RUST RHYNCHOSPORIUM NET BLOTCH 6

KWS

TWO ROW FEED

UK 101 • EAST 102 • WEST 101 • NORTH 99 • BaYMV Resistant

- Added to the RL in 2020 a 2 row feed barley variety for the UK
- Average performance for the UK, but again best in the East
- Good standing ability.

Notes: Very capable all-round performer, but a touch off the top for 2022.



RHYNCHOSPORIUM

6	
7	
7	
5	

SYNGENTA

TWO ROW FEED

UK 101 • EAST 102 • WEST 100 • NORTH 98 • BaYMV Resistant

- Consistent yielding two-row feed variety
- Good untreated yield and high resistance to rusts and Rhynchosporium - BaYMV resistant
- Very high specific weight and low screenings
- Performed better on heavier soils
- Offers a consistent option to the competitor genetics.



KWS CASSIA

MILDEW BROWN RUST 7

RHYNCHOSPORIUM

NET BLOTCH 5



KWS

TWO ROW FEED

UK 97 • EAST 97 • WEST 98 • NORTH 96 • BaYMV Resistant

- Remains a popular, consistent lower yielding two row variety with stiff straw and good specific weight
- Outclassed in comparison with newer two row alternatives, but still hanging on in there
- Still the 'go-to' variety for grain quality and livestock farmers accordingly
- Invariably one of the first two barleys to sell out year on year, as seed stocks wane.



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SY Thunderbolt

SYNGENTA

MILDEW 8

NET BLOTCH



SIX ROW FEED

UK 107 • East 106 • West 108 • North 106 • BaYMV Resistant

- Highest yielding 6-row hybrid feed variety added to the 2022 Recommended List
- Resistant to common strains of BaYMV
- Good bushel weight
- Taller variety with weaker straw. Will respond to a robust PGR programme.

NOTES: Excellent variety from Syngenta with sound grain quality and very high yield. Taller than some, so attention to preferred PGR programme will assist in achieving fullest potential.



SYNGENTA

🌅 SY Kingsbarn

MILDEW 7

SIX ROW FEED

UK 106 • East 106 • West 107 • North 106 • BaYMV Resistant

- Very high yielding 6 row hybrid feed variety added to 2019/20 Recommended List
- One of the highest yielding feed varieties in the East and the most widely planted in autumn 2021
- Good overall disease resistance
- High specific weight and good resistance to lodging
- Resistant to common strains of BaYMV.





SY Kingston®

MILDEW BROWN RUST RHYNCHOSPORIUM

NET BLOTCH 6

SYNGENTA

SIX ROW FEED

UK 106 • East 105 • West 108 • North 106 • BaYMV Resistant

- A high yielding 6 row hybrid feed variety added to 2021/22 Recommended List
- Resistant to common strains of BaYMV
- Consistent across all regions of the UK but best in the West
- Weaker straw with only a score of 5 with PGR.



Belmont®

Hyvido

MILDEW 5 BROWN RUST 4 RHYNCHOSPORIUM 7

NET BLOTCH 5



SYNGENTA

SIX ROW FEED

UK 106 • EAST 106 • WEST 106 • NORTH 105 • BaYMV Resistant

- Added to the AHDB Recommended List in 2018
- One of the highest yielding Hybrid Barley varieties
- Low untreated yields but responds well to fungicides
- Good agronomics except for brown rust
- Performs well on heavier soils but with robust PGR programme.
- Belmont has good grain quality.





SYNGENTA

lyvido

BROWN RUST 6 RHYNCHOSPORIUM 8 NET BLOTCH 5

DEW	5
UST	6
	8

SIX ROW FEED

UK 105 • East 106 • West 105 • North 104 • BaYMV Resistant • 2021 Candidate data



- Very high yielding 6 row hybrid feed variety candidate that did not make 2022 Recommended List
- Very good overall disease resistance with the highest untreated score of any current Hyvido
- High specific weight and good resistance to lodging
- Early maturity
- Brackling a potential problem if not harvested on time
- Resistant to common strains of BaYMV.
- Excellent resistance to Rhynchosporium
- Decision to be made whether to market this autumn.



KWS FEERIS

MILDEW 4
BROWN RUST 5
RHYNCHOSPORIUM 6
NET BLOTCH 6

5 6 6

KWS

SIX ROW FEED

UK 103 • EAST 103 • WEST 105 • NORTH 101 • BaYMV Resistant • BYDV Tolerant



- A high yielding conventional 6 row feed barley variety for the UK
- Highest yielding barley with BYDV tolerance currently available in the market place
- Stiff strawed
- Very good resistance to Rhynchosporium.

Notes: Newly recommended and able to offer added protection against BYDV with little detriment to yield and quality. Should be considered as a management tool for barley growers this autumn. Stewardship on BYDV needed to reach full potential.

SENSATION

Winter Barley

DSV

MILDEW 6
YELLOW RUST 8
BROWN RUST 8
RHYNCHOSPORIUM 6

8 6 5

6 ROW CONVENTIONAL BARLEY

BYDV Tolerance • BREEDER'S DATA

- New in 2021 to the UK
- Tolerant to BYDV
- Strong disease resistance
- Very competitive with black-grass

 Not on the AHDB list but will find support given lack of seed treatment for BYDV.



NOTES: Tolerance to BYDV with early maturity.

Malting Barley Committee Approved List of Winter Varieties

Harvest 2022

Full Approval:

FLAGON • CRAFT • ELECTRUM

Winter Oat

Variety Notes 2022



- RGT Southwark is the highest yielding winter oat on the 2022/23 Recommended List
- It combines high yield and quality, notably specific weight



MILDEW CROWN RUST 8



- RGT Southwark has high resistance to the common strains of crown rust, but is susceptible to mildew
- It is relatively early maturing, with a low lodging resistance.



• Needs robust management due to poor agronomic characteristics.

SENOVA - UK 100

- Dalguise is a very consistent variety with relatively low screenings and a high specific weight
- It has relatively long straw with low lodging resistance

RAGT - UK 100

· An early ripening husked variety from RAGT, with a higher yield than some established varieties and a reasonable grain quality

RESISTANCE TO LODGING

MILDEW 3

MILDEW 4 CROWN RUST 4

CROWN RUST 5

- It is susceptible to mildew
- It has moderate straw strength and is the earliest maturing variety on the Recommended List.



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RESISTANCE TO LODGING 6

MILDEW

CROWN RUST 5

SENOVA - UK 97

- Mascani remains by far the most popular variety with oat millers and growers
- It is less susceptible to mildew than most recommended varieties and has moderate resistance to crown rust, although a race exists to which it could be susceptible
- Mascani delivers moderate yields, but this is compensated by its combination of high kernel content and specific weight.



RESISTANCE TO LODGING 6

MILDEW 4 CROWN RUST 4

SENOVA - UK 95

 Gerald's consistent yields and good field characteristics ensure it remains a popular variety choice for growers, although it is now being superseded

• Top quality milling variety – data suggests it is susceptible to mildew

• A late maturing variety, with a low kernel content and moderate straw strength.



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Hybrid Rye

Variety Notes 2022

DESCRIPTIVE LIST CHART PAGE 43

HYBRID RYE VARIETY NOTES 2022

Why is Hybrid Rye growing in popularity?

Key advantages:

- High grain yields of 10-13 t/ha exceeding 2nd wheat
- Early harvest (whole crop) or grain (typically between winter barley and wheat)
- Ultra-low take-all carry over (2nd lowest compared to oats)
- · High black-grass suppression
- High straw yield (around 30% higher than wheat or barley)
- Ideal option for OSR establishment to ensure volunteer control
- Exceptional drought tolerance on light land
- Developing end use markets



2022 varieties:



TAYO

KWS Tayo is a new addition to the KWS hybrid rye line-up for 2021. One of the new-generation KWS PollenPlus® hybrids, it has good brown rust resistance and stiff straw.



SERAFINO

KWS Serafino is a multi-purpose hybrid which has produced stable, high yields with excellent Hagberg (HFN) and sample quality, ideal for pig finishing or cattle rations.

POSEIDON

HYBRID RYE

POSEIDON is a new generation hybrid rye from Nordic Seeds/ Daltons. Although it is a tall variety, it has excellent resistance to lodging and is suitable for both grain and forage production.

SU PERFORMER

HYBRID RYE

S U PERFORMER - a Saaten Union variety which has proved to be very consistent and high yielding since its introduction in 2017. Suited to heavier land and an earlier drilling slot. High Hagberg falling number and low enzyme activity.

HELLTOP

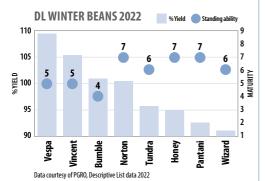
HYBRID RYE

HELLTOP - an older variety which is still popular. Suited to late drilling where required and vigorous through the autumn and spring. Stiff strawed and suitable for both grain and forage production.

Winter Bean

Variety Notes 2022

DESCRIPTIVE LIST CHART PAGE 51



Introduction

Beans will continue to remain key within the rotation for many growers in providing a useful break crop to cereals. They also offer additional flexibility in an autumn sowing window beyond the peak work requirements of oilseed rape and cereals. The crop initially was taking acreage from oilseed rape because of issues attributed to cabbage stem flea beetle, and more recently as a consequence of high nitrogen prices.

The later sowing affords a greater opportunity to maximize the effects from the use of non- selective herbicides prior to drilling and better residual activity of pre-emergence herbicides applied to moist soils, thereby improving the efficacy of grass weed control within the rotation.

Varieties General

Winter Bean choice has remained relatively unchanged from last year, the only exceptions being the introduction of the variety **Pantani** from LSPB. Despite having only moderate yields (93), it is the shortest currently on the list, some 15cm shorter than its nearest rival and with good standing attributes to match. It matches **Honey** and **Norton** in its early maturity.



Variety listings in order of yield as they appear on the Descriptive List.

Vespa (Senova) Yld **108** First listed 2018, gained full recommendation in 2020, whilst also moving to the top of the yield rankings. It produces high yields with excellent standing ability, albeit slightly inferior to Tundra in shortness of straw and ripening.

Vincent (Senova) Yld **106** First listed in 2021 and the second highest yielding variety. Similar to Vespa in height (medium) and good standing ability, although slightly later to maturity. Exceptionally large seed with good protein content, could be popular with the export and feed market.

Bumble (Senova) Yld: **102** First listed in 2016 another high yielder, slightly behind Tundra in agronomic characteristics, in shortness of straw, standing ability and slightly later in maturity. It has slightly larger seed, although lower grain protein.

Norton (Senova) **101** First listed in 2021, it is in many good agronomic aspects including earliest maturing varieties on par with Honey. It has exceptionally large seed, with potential for feed or export.

Tundra (Limagrain) Yld: **96** First listed in 2014, although still a popular variety. It is a moderately short straw variety, with good standing ability and an earlier maturity. In many ways similar in agronomic characterises to Wizard, with a slightly higher yield.

Honey (Senova) YId **95** First listed in 2012, it has good agronomic characteristics, one of the earliest maturing varieties with the short straw (yet now 15cm taller than Pantani) and standing ability on par with Vespa, bold seed and good protein content. It makes it well suited to fertile sites and the North due to its early maturity. The only downside, its yield is dropping away from the other contenders.

Pantani (LSPB) Yld **93 NEW THIS YEAR**, it has good agronomic characteristics, one of the earliest maturing varieties on the list (alongside Honey & Norton) with the shortest straw (96 cm) and standing ability to match. Like Honey and Norton, its maturity date makes it well suited to the North, and its standing ability to fertile sites.

Wizard (Senova) Yld: **92** First listed in 2003, which proves its consistency. It is now starting to lose ground in terms of yield to the newcomers. Agronomically a sound performer with additional resistance to leaf and pod spot (Ascochyta fabae). A large-seeded variety with good protein levels, suited for use in the animal feed market and has excellent premium export potential.

Seed Rate Charts

Oil Seed Rape seeds/m ²	30	40	50	60	70	80	90	100
TGW								
4	1.2	1.6	2	2.4	2.8	3.2	3.6	4
4.5	1.35	1.8	2.25	2.7	3.15	3.6	4.05	4.5
5	1.5	2	2.5	3	3.5	4	4.5	5
5.5	1.65	2.2	2.75	3.3	3.85	4.4	4.95	5.5
6	1.8	2.4	3	3.6	4.2	4.8	5.4	6
6.5	1.95	2.6	3.25	3.9	4.55	5.2	5.85	6.5
Cereals seeds/m ²	250	275	300	325	350	375	400	425
TGW								
45	113	124	135	147	158	169	180	192
46	115	127	138	150	161	173	184	196
47	118	130	141	153	165	177	188	200
48	120	132	144	156	168	180	192	204
49	123	135	147	160	172	184	196	209
50	125	138	150	163	175	188	200	213
51	128	141	153	166	179	192	204	217
52	130	143	156	169	182	195	208	221
Winter Reans seeds/m ²	20	22	24	26	28		1	

winter beans seeds/m²					2δ			
TGW								
500	100	110	120	130	140			
525	105	116	126	137	148			
550	110	121	132	143	154			
575	115	127	138	150	162			
600	120	132	144	156	168			
625	125	138	150	163	175			
650	130	143	156	169	182			
675	135	149	162	176	189			
700	140	154	168	182	196			
				_	-			

		- 50	ARCH A		200	200.0	PER MANAGEMENT
Spring Beans seeds/m ²	44	46	48	50	52	54	56
TGW							
500	220	230	240	250	260	270	280
525	231	242	252	263	274	284	295
550	242	253	264	275	286	297	308
575	253	265	276	288	300	311	323
600	264	277	288	301	313	325	337
625	275	288	300	313	326	338	351
650	286	300	312	326	339	352	365

Spring Peas seeds/m ²	74	76	78	80	82	84	86	88
TGW								
250	186	191	196	200	205	210	215	220
260	194	199	204	208	213	218	224	234
270	201	206	211	216	221	227	232	238
280	208	213	218	224	230	235	241	247
290	216	221	226	232	238	244	250	256
300	223	228	233	240	246	252	258	265

Units: kg/ha - The seed rates in kg/ha highlighted assume 100% establishment.

To amend these figures to reflect your own expectations of establishment (to include germination and field losses), multiply the relevant figure (from the seed chart below) by 100 and divide by your **expected establishment percentage**.

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Regional Trial Centres

The consequences of global events including Covid19, fuel price increases and the war in Ukraine have raised many questions already about what farmers should do in the medium term. Stuart Hill, Head of Technology and Innovation discusses how we can help to address this.

Do I grow more wheat, less wheat, more premium wheat, bring back OSR or grow more, or increase legumes and what should I now do with environmental areas?

These are a snapshot of the guestions being asked currently by growers about what they should be doing this autumn and beyond. All on the back of increasing volatility of markets and costs, started by Covid, added to by gas and oil price rises and compounded by the very sad war in Ukraine. It does seem churlish to be talking about these challenges when you see what is happening over there. We, of course, must help and support where we can and critically focus on growing food.

The consequence of all of this is a lack of labour, massive global raw materials sourcing challenges and global supply chain issues leading to the significant fuel and fertiliser price increases alongside broader input availability and fixed cost increases.

The positive from all this perfect storm is that output price increases have been unparalleled.

So how do we go about answering all these questions? Managing risk is at the core of what we have already been and will be answering over the coming months and more

directly at our Helix Farms and Regional Trial Centres this June and July.

The simple fact is, that risk increases due to the financial outlay in growing a crop. Understanding this and how and when you market produce to manage this is the biggest single factor that can make a difference.

Assessing and ensuring good cashflow is critical to managing the business and on the back of this, budgeting is key to answering those questions.

Rapid knee jerk reactions can easily result in unintended consequences. The rotation, cropping diversity and environment aspects of farms are there for a reason. Areas removed because they were unproductive will still be unproductive. The goal remains to maximise productivity across the rotation, improving soil structure, building soil fertility and its ability to cycle nutrition, managing carbon and all together supporting better plant health to manage inputs more efficiently.

Summer open events

These are just some of the areas we will be addressing and discussing at our summer Helix and Regional Trial Centres (RTCs) events around the UK, with our 'managing risk' theme. Across ten RTCs this year we will focus more directly on how varieties and disease management are a key part of ICM and link with various trials to show how to manage efficient input use.

For 2022 the number of Helix Farms has increased to seven. These are farm scale developments and demonstrate how

technologies deliver data to help improve decision making for the grower and agronomist. With such a range of farms around the UK it means we can test and develop technologies and what they deliver across a broad cross section of regions, farm types, systems, and climate. So you will see technologies used on each farm and information bespoke to each farm and how that has been used for benefit.

At Helix, farm strategy is the first area of focus.

This is supported by the launch of a new Business Planning Tool through the Omnia platform. This enables growers and agronomists to assess productivity around the farm, what actions to take with different areas and look at different rotational/cropping scenarios and the impact that has on cost of production and sustainability, both financial and environmental.

We take a deeper dive into integrated pest and crop management approaches which is becoming ever more relevant in terms of sustainable farm practice. This includes variety choice as part of an integrated approach and the use of predictive and imagery technologies that provide data to help manage the optimum use of inputs.

Nitrogen use efficiency will be discussed as it continues to be high on the agenda, not just because of current cost and supply but the longer-term reduction in bagged Nitrogen use addressing carbon sustainability goals. This includes discussion on optimum cropping from a Nitrogen perspective, use of data from the soil and crop, its yield potential and Nitrogen use efficiency leading to optimum quidance for the coming year.

Helix Demonstration Farms and Regional Trial Centres

Locations and Events Summer 2022

- 1 Carlisle Tuesday 14th June
- 2 Alnwick Wednesday 15th June
- 3 Grayingham Tuesday 28th June
- 4 Trevone various
- 5 Harleston Thursday 7th July
- 6 Stowbridge Friday 1st July
- 7 Rosemaund Monday 4th July
- 8 Sutton Bonington Wednesday 29th June
- 9 Old Leake Wednesday 15th June
- 10 Great Fransham Thursday 16th June

Soil also fits clearly into the integrated approach and how it is treated and developed as a biological system has significant impacts on input efficiency. This includes diversity in rotations, the use of cover and companion crops and minimising soil disturbance. These changes need measuring over time and we will be looking at how data from technologies can help improve decision making through periods of change.

A year ago we would never have anticipated being in such volatile times. It will be ever more critical to make well

informed decisions to ensure the best possible chance of increasing profitability and productivity over the coming years. We very much hope to see you at our events from early June onwards so we can help with those decisions.

- 11 《Heli》 National Technology Farm — Wednesday 13th July
- 12 Heli East Anglia Tuesday 14th June
- 13 Heli Yorkshire Thursday 16th June
- 14 ♦ Heli ≥ Oxfordshire Tuesday 21st June
- 15 @Heli Northumberland Tuesday 28th June
- 16 Heli Fife Wednesday 29th June
- 17 @Heli Agroecology Farm Tuesday 5th July



Harvest 2022 & Beyond

Meeting the Challenge in volatile times

Current unprecedented times pose many questions around the viability of broadacre cropping amidst rising input prices and volatile output markets. Our farm business consultants have summarised below the *challenges* and *solutions* that can be reasonably foreseen for harvests 2022 and 2023.

Challenges:

Solutions to help:

Increasing fertiliser prices and varying availability

- Thorough Nutrient Management Planning and NUE analysis.
 Make better use of organic manures.
- Ensure soil structure and nutrient availability do not limit N uptake.
- Include N fixing crops, and low N requirement cereals in rotations.
- Use alternative products e.g., bio-stimulants.
- Employ technology e.g., variable rate applications.

The importance of cashflow

- Reduce spend, with less input intensive cropping in the rotation.
- Redeploy marginal areas to reduce losses and increase income.
- Consider timing of input purchases and output sales.
- Reinvest remaining BPS income/any grant funding.
- Calculate peak expenditure periods and discuss potential borrowing.
- Ensure required financing solutions are in place.

Rising fuel prices

- Thoroughly assess field situation before deciding on cultivation.
- Reduce cultivation depth where possible.
- Use appropriate tyre pressures.
- Employ contractors with specialist machinery.
- Review straw/stubble management when combining.
- Consider and restructure logistics operations on farm.

Input pricing inflation

- Calculate cost of production and sell forward at known margins.
- Utilise Omnia and TerraMap technology e.g., variable rate applications.
- Broaden rotation with crops needing less inputs.
- Use Omnia cost of production mapping to identify marginal areas.
- Replace high risk crops with guaranteed stewardship income.



- In-hand farming
- Contract farming agreement (CFA)
- Farm business tenancy (FBT)
- Share farming
- Basic Payment Schemes (BPS) and Countryside Stewardship Schemes (CSS)
- Financial reporting and planning
- Purchasing and selling strategy
- Diversification planning and implementation
- Farm sustainability strategy
- Omnia Business planning

CONSULTANCY:

- Business reviews and structuring
- Grant applications and business planning
- Diversification farming and non-core farming
- Environmental and sustainability strategy
- Compensation claims
- Tenancy and contract matters
- Alternative land use appraisals (renewables, development, carbon)

Contact us with any questions or for further information: information @hlhltd.co.uk

Cashflow

Greater investment in the growing crop brings the challenge of added exposure to risk. This directly impacts cashflow, increasing the importance of financial management planning and the reliance on exceeding breakeven yields.

Oxbury Farm Credit - a flexible way to fund farm inputs

Oxbury Farm Credit is a specialist input finance facility to fund farm inputs purchased through Hutchinsons. Existing farm lending products do not match the seasonality of farm cashflows. All Oxbury's products are designed by farmers for farmers. Understanding farm businesses has resulted in technology that is simple to use and automates invoice management.

> The potential benefits of utilising Oxbury include:

An additional line of credit Flexible repayments No need to switch banks Less administration hassle **Reduces pressure on Cashflow Competitive interest rates**

Catch & Cover Crop Mixes

Catch and cover crops are widely used to improve key soil functions, add organic matter and cycle nutrients for the following crop.

Hutchinsons are pleased to offer our own range of catch and cover crop mixes. The key aim of each mix is to provide as much diversity as possible, while considering cost, reliability and confidence in performance.

Speak to us for advice on getting the best from your cover crops.

Download our Catch & Cover Crop Guide for more information on the mixes available.

hlhltd.co.uk/resources



NEW
for 2022!
Maxi Companion
a companion mix for

Oilseed Rape.





Spring Cropping OVERVIEW





In spring 2022 we saw significantly more hectares enter the ground than first anticipated due to the very bullish grain prices. Spring barley still offers the best option for rotational suppression of blackgrass, whilst wheat currently offers excellent margin returns.

Spring Barley: –

RGT PLANET historically took the largest proportion of spring barley area for several years, however, LAUREATE is now the number one in the marketplace, outselling its competitors whilst offering dual purpose end markets. Whilst spring 2023 is some way off, we do not envisage the market shares changing dramatically. PROPINO has seemingly had its day, as it becomes outclassed and superseded. LG DIABLO, now fully approved for malting and distilling has also taken some of the market again being dual purpose, COSMOPOLITAN, PROPINO and SIENNA have been removed from the list, with the former unable to make malting quality.

Newer varieties include **SY SPLENDOR** (brewing) and **SY TUNGSTEN** (potential for brewing and malt distilling), both are provisionally approved by MBC.

New variety **SKYWAY** offers potential brewing ability and is under test by MBC. It looks to have potential, but we await the consumer outcome. It probably has the edge over **JENSEN**.

There are **FOURTEEN** (yes FOURTEEN) new malting candidates and at this stage, with limited data, too early to judge.

Feed varieties - **KELIM** still sells well for this market, but arguably the malting varieties offer better yield.

Spring Wheat: -

MULIKA remains the most widely grown variety and the only group 1, but now at significant yield deficit and should only be considered if a guarantee of grade 1 quality is a given. KWS LADUM is a new variety that has given treated yields that are a significant step up in its UKFM Group 1 segment. Limited data suggests that KWS LADUM has no major disease weaknesses, with high resistance to mildew, brown rust and Septoria tritici. It will be a consideration for next spring.

KWS COCHISE, KWS CHILHAM and **KWS GIRAFFE** provide alternatives in the group 2 sector which is little changed.

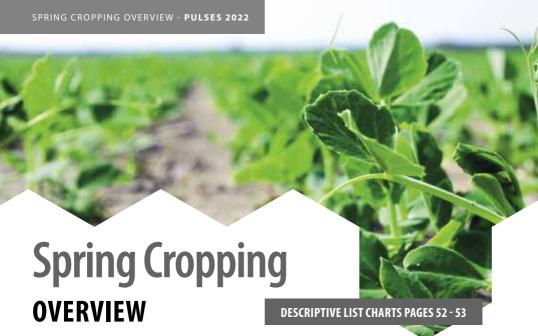
WPB ESCAPE, which was the highest yielding spring wheat available in spring 2022, will undoubtedly meet competition from the newly recommended highest yielding spring wheat on the list (when commercial seed becomes available from this harvest), with KWS FIXUM performing consistently in all three years it has been under test. It is a relatively latematuring variety. Limited data suggests that KWS FIXUM has no major disease weaknesses, with high resistance to yellow rust, mildew and brown rust.

Spring Oats: -

WPB ELYANN and WPB ISABEL are the current market leaders, with new varieties MELRIN and LION also attracting interest for evaluation. Suggestions are that ISABEL will attract the greatest demand.

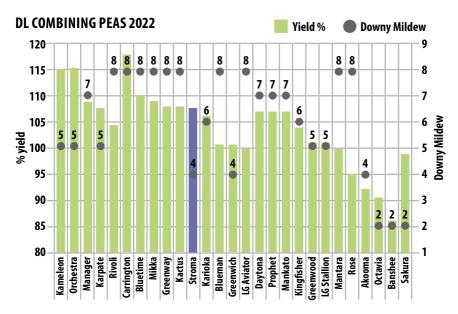
The end market will dictate the preferred variety in this market. Essentially the key to growing spring oats is rainfall in June (key for all oat crops) and timeliness of harvest.





Combining Peas

The change in classification of peas is aligning more to international standards and moving to a descriptive list. Large blues are now listed as **Green/Blue** and whites as **Yellow/White**, the **Maple** and **Marrowfats** classifications remain unchanged.





- The only NEW addition to the list this year is Carrington (117) LS Plant Breeding. It is the top yielding variety (117%) and has a very good rating for downy mildew (8). It is yielding 7% above its nearest rival.
- Following on is Bluetime (110) year 5 and Mikka (109) year 4 on the list.
- Last year's additions include Stroma (107) LS Plant
 Breeding, which drops down the yielding order this
 year, yet still retains the highest TGW in the group at
 303g. Greenway (108) and Mikka (109) steps up
 slightly in the yield ranking, both from IAR Agri and
 both similar in terms of agronomics.
- Kactus (108), Greenwich (102) and LG Aviator (100)
 all received listings in 2020. Kactus being the highest
 yielding of all three with good agronomics as well
 (shortness of straw, standing ability and downy mildew
 rating). Greenwich with a grain size of 320g is the
 largest of the group (potentially suited to micronizing).
- Manato (96) KWS moves to P4 recommendation
- Karioka (106) and Blueman (102) all progressed to recommended last year. Blueman stands out in its rating of 8 to downy mildew, it also has a high resistance to powdery mildew.



Marrowfats: the second largest sector if judged by seed production at around 40% of the market.

- Akooma (96) has maintained its yield of 10% above Sakura and has very large seed. It is a tall variety which has a low rating for standing. With a slightly higher rating for downy mildew, as well as being a bold seeded variety.
- Sakura (86) is fully recommended.
- Banasee (86) Senova and Octavia (88) IAR Agri
 continue to year five of trials, both have short to medium
 straw, better standing ability than most marrowfats and
 are late maturing with low ratings for downy mildew.

All marrowfats have lower downy mildew ratings this year in comparison to 2021 (because of the season). It should be noted that some varieties showed a different resistance pattern to that normally seen. Different races of downy mildew exist, and varietal resistance may vary depending upon the race(s) present in the soil.

Yellow/White-seeded:

- A NEW addition for 2022 is Rivoli (103) from Senova, although lower yielding than some it has a better downy mildew score (8).
- Kameleon (115) Senova and Orchestra (111) LS Breeding move to the five-year status. Kameleon has exceptional yields, out yielding its nearest rival by 4%. With good standing ability and earliness to maturity, it has some outstanding credentials. Its grain size makes it suitable to the whole grain packet and split pea market, as well general suitability to the animal feed sector. Orchestra is a medium plant height with moderate standing ability, with a medium maturity. The TGW of 311g will make it attractive to some high value niche markets.

Maple peas:

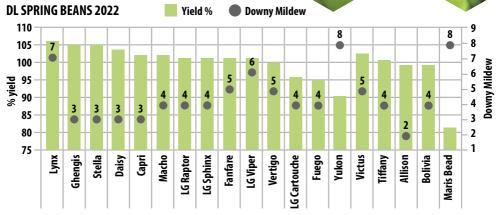
 Mantara (92) and Rose (89) remain the only two recommended varieties in this category.

Spring Beans

The descriptive list for 2022.

There were no new additions to the list in 2022, consequently the list just reflects how the varieties performed last season.

DESCRIPTIVE LIST CHARTS PAGES 54



Tables: taken from the PGRO Descriptive List 2022.

Pale Hilum

Lynx (106) reclaims the highest yielder spot for 2022 from Stella.

Stella (105), Capri (103), and **Daisy (104)** all new last season (from Saaten Union) were added in 2021. Stella (105) previously 108 was the highest yielding variety, so from being 2% above Lynx has dropped to be 1% below, allowing Lynx to reclaim the top spot. Capri and Daisy have similar characteristics to Stella although higher protein content is offset by a smaller seed size.

Two varieties that were new last season from Limagrain: **LG Viper (102)** was vying for top spot alongside Lynx last season, although its yields have dropped back this year. It ticks all the boxes agronomically. **LG Sphinx (102)** is on par with LG Viper.

Pale Hilum & LVC

A new sub-category was established last year (LVC) - linked to low Vicine and Convicine. These are glycosides, antinutritional compounds and they hamper the development of fava beans as a worldwide food and feed crop. High LVC's in beans cause a disease called favism, a hemolytic response to the consumption of fava beans in people who have an inherited absence of the enzyme glucose-6-phosphate dehydrogenase (G6PD) in their red blood cells. It is estimated more than 100 million people worldwide are genetically deficient in G6PD. The incidence of this genetic deficiency is as high as 50% in some populations.

Victus 103 and **Tiffany 101** were joined in this sub-category on the list in 2021 by **Bolivia** and **Allison**.

The latter two varieties are from LS Plant Breeding and have been included again - both are low LVC varieties. **Allison (98)** only 5% behind Victus, an early maturing variety, short variety with good standing ability, although a low rating for downy mildew. **Bolivia (98)** is a slightly later maturing variety, with similar agronomic characteristics and with better downy mildew resistance, although an inferior seed size.

Maize **Variety Options**

Demand for maize seed in the UK has continued at an all-time high for the last few years and is likely to remain so for 2022.

Our portfolio is selected from material produced by top breeders, with performance data supplemented by our regional trials and feedback from our national network of agronomists. This enables us to offer independent advice on the range of varieties best suited to individual farm location and conditions.

Varieties have been selected for their consistency, yield, quality and agronomics.

Best-selling varieties for 2022 by maturity class

Amaroc

FAO FORAGE **BIOGAS** GRAIN χ **Augustus** 160 Very early maturing Duxxbury 160 X varieties Perez 160 X **Prospect** 170 **Early** maturing Autens varieties Debalto **Ability** 180 P7326 P7034 180 Intermediate maturing varieties Mantilla Neutrino Late maturing Indexx varieties

Hutchinsons have access to varieties from all of the main maize breeders including:















Download our Maize Variety Guide for more information hlhltd.co.uk/resources







High definition soil mapping

A ground-breaking system offered by Hutchinsons.

TerraMap provides more definition and detailed soil maps than any other system, enabling you to farm more accurately.

- More than 28 map layers available
- 800 data points per hectare why have one data point with another system?
- Not affected by soil moisture, compaction or cover crop
- Repeatable, consistent and reliable results enable confidence in decisions
- The only soil scanning system in the UK to measure active and organic carbon in the soil - how can you manage carbon without measuring it?



omniaprecision.co.uk

Omnia E-Seed

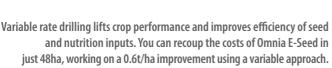


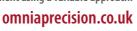
Convert your drill to variable rate

Don't let the cost of a new variable rate drill be a barrier to a variable approach!

Omnia E-Seed is a conversion kit that enables a standard land metered drill to be converted simply and efficiently into variable rate.

- Can be easily fitted to any seed drill, irrespective of age
- Any variable rate plans can be uploaded and used by the system
- It has been developed closely with growers who have trialled and adapted the system
- All control is via an iPad which talks to the box, so once variable rate plans are uploaded onto the iPad, they can be sent seamlessly and wirelessly
- Tested and validated at the Hutchinsons Helix farms





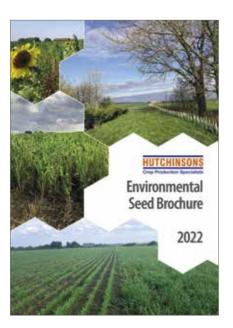




Environmental Services

The switch from direct support to environmentally-focused payments presents massive challenges over coming years, with BPS reducing even further this year. The options you choose should be delivering for biodiversity, soil health and the farm business.

Our team of specialists are helping growers plan the best way forward to benefit from the opportunities available, with practical advice and support on a range of agri-environment areas.





NEW for 2022!

Each mix has been selected for its ease of management and ability to deal with problems such as weeds and unfavourable soil conditions. These mixes have been tested at field scale on our Environmental Trial Site in Cambridgeshire.

Speak to us for advice on getting the best from your environmental mixes.

Download our **Environmental Seed Brochure** for more information.

hlhltd.co.uk/resources



Winter triticale Descriptive List 2022/23

RECOMMENDEDLISTS

AHDB		,				,				DL Candidate	(%g) a
DESCRIBED	Kasyno	SU Libonoui	KWS EI90	coumeT	Belcanto	Tender P20	Oython	onoT	Fribeca	† opermud	SJ egenevA
Variety status	o		o								
Grain yield (as % treated control)											
Fungicide-treated (10.7 t/ha)	101	88	88	8	98	98	z	æ	91		9.2
Number of trials	12	10	12	10	10	12	12	12	10		
Agronomic features											
Lodging (%)	[0]		[0]			[16]	[0]	[0]	[6]		5.6
Straw length (cm)	101	[106]	110	[106]	[109]	124	86	8	116		6.4
Ripening (days +/- Agostino, -ve = earlier)	<u>-</u>	[0]	0	<u>-</u>	[*	[0]	[0]	[0]	[0]		2.4
Grain quality											
Specific weight (kg/hl)	73.1	72.1	75.5	71.2	8.77	74.0	72.7	70.9	71.5		1.5
Protein content (%)	11.9	12.1	11.5	11.7	12.6	12.3	12.0	12.3	12.0		9.0
Disease resistance											
Yellow rust (1-9)		7	9	7	7	2	4	20	7		6.0
Breeder/UK contact											•
Breeder	Dank	Nord	Lant	Lant	Dank	В	Hod	Hod	Desp	Lank	
UK contact	Sen	38	Sen	Sen	Sen	Sen	Dalt	Dalt	Els	Sen	
Status in DL system											
Year first listed	18	21	#	21	21	50	16	8	12		
DL status		2		P2	2						

Varieties no longer listed: Agostino.

The data in this table is provided for information only and does not constitute a recommendation.

On the 1-9 scale, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

† Data cannot be published as variety has not completed National List testing.

C = Yield control (for current table) [] = Limited data

P2 = Second year of listing

Dank = Danko Hodowla Roslin, Poland (danko.pl.) strzelce.pl) Desp = Maison Florimond Desprez, France Dalt = Dalton Seeds (dalmark.co.uk) Els = Elsoms Seeds (elsoms.com) (florimond-desprez.com)

at the 95% confidence level Nord = Nordsaat, Germany (nordsaat.de)

SU = Sasten Union UK (sasten-union.co.uk)

apart are significantly different Average LSD (5%): Varieties that are more than one LSD

LSD = Least significant

Hod = Hodowla Roslin Strzeice, Poland (hr-

IGP = I.G. Pflanzenzucht, Germany Lant = Lantmannen SW Seed BV Sen = Senova (senova.uk.com)

RECOMMENDEDLISTS 图图

Winter rye Descriptive List 2022/23

AHDB AHDB	DESCRIBED

AHDB																Dt. Candidate	dates		
DESCRIBED	ofel SWA	lawait US	outries SWX	Winohari Ud	xillned US	beori3 US	R-VY FIS	ellenuri US	nobieso ^q	INSAMO US	chaintquill US	HAMIN UR	properties	Ohisho	[†] wgi awa	[†] votriened divos	† wam	* esonn	THE CO. I SHARE
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Variety status	N.	MEM		o	MEN	_		NEW											
Grain yield (as % treated control)																			
Fungicide-treated (10.2 thal)	104	362	102	900	8	8	8	28	48	8	8	8	z	8					-
Number of trials	1	=	13	22	F	=	2	=	2	\$	2	2	2	22					
Agronomic features																			
Ledging (%)	100	[94]	Ŧ	(13)	[16]	[17]	[50]	138	Œ.	188	[5e]	[10]	Del	(27)					-
Straw langth (cm)	128	423	130	128	130	130	134	127	130	126	128	128	143	140					•
Ripersing (days +/- SU Mephisto, -ve = earler)	÷	Ŧ	ż	0	Ţ	Ŧ	Ţ	Ŧ	0	0	•	0	0	0					_
Grain quality																			
Protein contest (%)	9.6	9.0	9.6	9.5	9.9	9.6	9.4	9.3	10.2	9.7	9.7	9.6	10.2	9.9					0
Hapberg Falling Number	200	502	208	204	216	231	107	212	111	162	529	215	216	508					24
Specific weight (kg/h))	78.6	77.5	76.7	77.4	77.3	78.9	76.7	77.2	75.9	76.6	76.5	76.3	77.9	27.8					-
Disease resistance																			
Brown rust (1-8)	Е	藍		4	Ŧ	壑	*	[4]	*		0	9	*	4					_
Breeder/UK contact																			
Breeder	KWSCmbh	Hybre	KWSCHER	Hybro	Hybro	Hypeo	cadyl	Hypno	2	ng	Hybre	Hydro	g-le	Hybro	KWSCHEN	кумболен	нуве	Hybro	
UK comtact	SWA	36	NAME	SE	3	98	3	SU	Dollar	3	36	35	26	200	SWON	SWOR	36	38	-
Status in DL system																			3
Year first listed	22	S	ē	13	R	R	5	22	ē	2	2	54	2	17		,		,	9
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The data in this table is provided for information only and does not constitute a recommendation. On the 1-8 scale, high figures indicate that a variety shows the character to a high degree (e.g. high resistance)

If Data cannot be published as variety has not completed National List testing.

Conv. = Conventional variety
C = Yeal control (for current table)
[] = Limited data
P1 = First year of latting
P2 = Second year of listing

Dait - Daiton Bendir (dalimant.co.uk)
Hybro - Hybro, Germany (saaden-union.co.uk)
KNS - KNS UK (two-uk.com)
KNSS-KNS UK (two-uk.com)
KNSSOnth - KNSS Lochow Grabit (twa-uk.com)

NS - Nordic Seed, Denmark PHP - P. H. Puterson, Germany (physotersom.com) SU - Sasten Union UK (seater-series.co.uk)



RECOMMENDEDLISTS Winter oilseed rape 2022/23 YIELD, QUALITY, AGRONOMY AND DISEASE RESISTANCE

AHDB	RECOMMENDED

Described variaties	pessag RCLX4	EWSD .		20		# W	2 12		100 11		. 83	9	- 1		* 10			6 121 146	-			100				
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AHDB	RECOMMENDED	Fallety type Stope of recommendation	Sense soles visit administra of	ı	(astiWest region (5.0 the))	doffin region (5.8 Mhs) and visid (5.8 Masted common	John Credition (4.7 Uha)	and/West region (4.6 biha)	deth region (5.3 shu)	intrested gross output, yield adjus	Integ Kingdom (5.11/ha)	Indicated send yield (% ormuseled	(Indeed Kingdoon (4.8 tithal)	gronnels hebres	Resistance to todging (1-8)	Sem suffices (15-0)	Shortness of stem (1-8)	Sent height don)	Latiness of Scienting (1-8)	admess of maturity (1-9)	Tod shaden mesidance	Speake resistance	ight heaf spot (1-6)	Nem camber (1-9)	NA.	Secretary of the same of the same of the same of

= Specific recommendation for growing on land infected with continon asserts of dubinor Beferred to be waistant to someon assets of obdeput, but this has not been voiffed in Recommended List tests. These varieties should only be used in this with AHDB cuboost C - Yeld control (for current table). For this table, Campus, DK Expansion, Egyst and Temptation seeks also The target deposit plant population is 40 plantaint for Rt, task, Maximum ened rate is 70 seedstant and may be timer if upoditions permit Goossenoods connects are taken from the transmit List Yeak data. only and are indicated in tasks

Unitwalted trials are incated for adentifrie at flowering

Turk's Tump pattern stea. R = Beteved to be maintent to the best (Turk's or god shatter), but this has not been verified in

- Variety no longer under last in Rt. Wats in supon A. Herbickle-scientri variety. The variety has a sperintazzolnom herbickles (a Charfielf" salety) control namenus but are no longer letted nded for the North region

UK - Recommended for both the EastWest and North Feld figures for regions where the sakety is not no

MEAR PRIST Environ Actid and semi-dwarf varieties are described. Data is previoled for information enty and dines On the 1-0 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

Varieties no knoper Talsod in the UK Bush EastWest and Morth regions; Stated, DK Espanson and Temptabl Varieties no knoper Stated in the EastWest region: Gosppa and PT275.

- » HOLL (High Oles, Low Linolenk) variety

LSD - Least rigolitizat difference Avvisage LSD (FV); Vivenius that are more than one LSD apart are significantly different at the 90%

A HDB

RECOMMENDEDLISTS

AHDB

Winter oilseed rape 2022/23

YIELD, QUALITY, AGRONOMY AND DISEASE RESISTANCE

RECOMMENDED RECOMMENDED RECOMMENDED Recommendation Recommendatio	AHDB				Recommended for the EastWest region only	ded for	Ne East	Mestrag	din only				To the	e Morth	-				
Hybert H	RECOMMENDED	alnobA 9J	had	Tennyson	sugitinA &J							MIZZS CF *	ополять	nezal8	Average LSD (5%			W 37	18
E.W	Variety type	Hybrid	Hybrid	Hybrid	Hybrid	-15-		Ц		D		Hybrid	Conv	Com					Ď
1504 1523 1523 1514 1510 1599 1544 1547 1549 1544	Scope of recommendation	EW	E/W	EVV	EW					П	-	UW Sp	z	N					į
104 103 103 103 104 104 105 105 104 104 105 105 104 104 105	Variety status	NEW	MEM	MEM		_	-						NEW	٠			-	į	ě.
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100 104 103 104 104 104 107 109 104 107 109 104 107	North region (5.8 tha)	103	(BB)	1961	103	8	[26]	88	66	46	26	06	108	101	5.5				4
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	Agronomic features															4		NAME OF	Ė
0	Resistance to lodging (1-9)	[8]	[6]	101	[0]	E	[6]	[60]		8			(6)	101	0.3		h		į
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146 150 150 156 156 150 153 148 152 147 143 145 145 147 145	Shortness of stem (1-9)		0	*	9	φ		9			9		*		0.3	2	1.36	b	3
7 7 8 7 8 8 7 7 8 8 7 8 8 7 8 8 7 8	Plant height (cm)	149	150	150	\$	8	951	180	153	148	152	147	143	148	3.5		ř		ð
5 5 5 6 5 4 6 5 6 6 5 6 5 5 6 6 5 5 7 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Earliness of flowering (1-9)		1	۰	4		9				9	7	4		9	The second		A	
7 7 7 6 6 7 7 6 0 5 5 6 6 8 8 7 7 7 8 8 8 7 9 9 9 9 9 9 9 9 9 9 9	Earliness of maturity (1-9)	so.	ın	10	9	un	*		40	9	φ	40	wn	w	0.4	110			d
7 7 7 6 6 7 7 8 6 0 5 5 6 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Pod shaffer resistance	4	+	ij.	R	4	4	œ	×	H	7.6	+	7.4	(100)			×.		Š
7 7 7 6 0 5 5 6 7 9 3 9 3	Disease resistance																į	X	()
8 7 9 7 7 8 7 8 8 5 6 9 8 8 8 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9	Light leaf spot (1-9)		4	7	9	۰	7	e.			up			1	90		Š	į	Ü
R R R R R R R R R R R R	Stem canker (1-9)	00	1	œ	1	1	00	7	60	80	vn	9	9	w	0.9	A STATE OF			
1) 46.4 45.5 46.2 46.9 44.8 45.2 46.0 46.1 44.8 44.7 45.1 45.1 10.0 14.9 11.9	Turv	×	Œ	×	×	ē	æ	œ	×	æ	,	110010	œ	1		all of the			
1) 464 455 462 464 449 448 452 460 461 448 447 451 87 100 11.1 115 118 120 122 122 11.1 109 149 119	Seed quality (at 9% moisture)	A 201 LIST 1		000			100	9	10.00							4			
8.7 10.0 11.1 11.5 11.6 12.0 12.2 11.1 10.9 14.9 11.9	Oil content, fungicide-treated (%)	46.4	45.5	45.2	45.4	6.14	100			M	64.8	44.7	45.1	44.5	8		alle a		Ç,
	Glucosinolate (jumoles/g)	9.7	10.0	1173	11.5	11.8					10.9	14.9	11.9	10.7		A MARK	e e		

(%S) OST offerony

RECOMMENDEDLISTS Winter wheat 2022/23

YIELD, QUALITY, AGRONOMY AND DISEASE RESISTANCE

RECOMMENDED	MAY ZAN	дукдиц	Crusoe	auoidaulii TOA	KWS Expire	mulbells4 SWX	WAS SHELD	Mayfower	WIND SWM	LG Prince	muhiti SWX	KWS Firefly	bides# TOR	atenimutti 0.1	19 Astronomer	StroM	lemaß BWX	Holi3
End-use group Scope of recommendation Visitely status	š	50	š	5	5	X X	30	N N	5 %	5	N.W	5	DATA GREE	2 ×	š		¥ ò	5
Fungicido-treated grain yield (% treated control)	8	10	8	8	101	100	3	40	400	199	400	100	900	909	400	8	8	
Sant Medion (10.7 bits)	8	200	8	8	100	8	8	8	305	100	101	101	100	901	100	101	8	8
West region (11,0 bha)	8	96	26	- 0.0	102	101	8	26	100	101	100	100	44	100	96	26	2	
North negion (11.1 tiths) Unitreated grain yield (% treated control)	8	8	×	z	8	[00]	82	590,1	[101]	8	(101)	8	(180)	101	26	8	ğ	201
United Kingdom (10.6 thlu) Agronomic features	2	R	Ľ	ě	00	8	8	8	2	8	06	2	£	2	8	6	22	7
Resistance to lodging without PGR (1-9) - see note below	60	80		4	1	1	9	9	7	7		60	40	4	7		*	
Resistance to lodging with PGR (1-9) - see note below	60	100	7	-	-		1		4	40		60	40	. 1		*	**	
Weight without PGR (onl)	18	3	29	88	8	2	20	60	8	8	92	83	98	63	20	88	2	8
Spening Ideas 4/- Skyfall, -ve = earler)	0	0			7	-	0	0	•	*	*	۳	7			•		
Resistance to aprouting (1-9) Disease resistance		40			E	2	wit.		r	E	÷	Œ	,t.	E	E	E	•	
Michee (1-9)	5.	9	*	1	1			9		+		10	*	9	*	*		
ratiow rust (1-9)		3	6		10	6	•		ø	*		9	40			60	*	
Mown rust (5-8)		-				10	45	40	**		40	ın					40	
Sectoria tribio (1-8)	0.1	5.3	6.2	5.7	7.8	7.4	6.5	0.4	4.7	0.4	5.4	5.7	6.9	6.1	0.0	8.8	4.3	Ī
Septons (100 (1-8) - one-year falling - see note below	8.8	5.5	8.9	5.4	7.3	7.2	6.5	8.2	8.0	9.6	9.6	4.9	8.4	8.6	6.2	82	**	
yeapot (1-9)	9	70	*	70		100	•	100	141	40	M	0	E	10	40		*	
Justifum our blight (1-5)		4	1		9				1			10	7	9	9			9
Chances wheat blossom midde	2	α		1000	1000	0.00		10000	œ	a	-	α	æ	æ	α	œ	œ	

2222

90

20002

222222

On the 1-9 scales, right figures indicate that a variety shows the character to a high degree (n.g. high resistance). Companisons of variables across regions are not valid.

C = Yest control (for current table)

• Venety no knoper under test in PL triels
POR = Plant grouth regulator

UK = Recommended for the East region
W = Recommended for the East region
W = Recommended for the West region
N = Recommended for the West region UASM = UK Rour Milers

Varieties no longer listed: NNS Krietic, LG Detrot, LG Cussar, LG Sardance and Shabras. Companions of twisters across majors are no young. An expension of the state of PGH programma. All yields in this sides are staten from treated trials receiving a laif languistic and PGH programma.

specific recommendation for resistance to Barlay yellow shard viture (BYDV). Resistance to BYDV has not been Sp. - Specific recommendation, RGT Wolverine has a verified in Recommended List tests



B B

Winter wheat 2022/23 YIELD, QUALITY, AGRONOMY AND DISEASE RESISTANCE RECOMMENDEDLISTS

AHDB	woten	cubba		***	PHD'S		lasko	30	100	-	н		nim	uco	mutne		Agus	12.0	mineri		
RECOMMENDED	MB TOR	eKws 91	448 TOR	048 TOR	edg gr	noint3	er sam	wollews	Champio	PO SMX	OK PURPLE	medD	PM SMM	ARKT DJ	KWR CH	marlanD	no tae	Committee	ow TOR	soboerfT	
cope of recommendation	š	š	5	š	3	z		z	5	š	š	Ä	EBN	š	5	5	ľ	Ä	8	×	
rankey states Fungicide-treated grain yield (% treated control)	eg.			WEW				STATE OF STREET	MON	MEM		u		B							
Jirited Kingdom (10.8 tha)	808	100	609	305	102	900	06	8	906	101	ğ	100	201	100	900					8	le:
Sant region (10.7 thu)	808	100	100	101	101	900	8	2	406	100	ğ	100	902	100	900	100	0	00 0			-
West region (11.0 tha)	808	100	909	908	100	950	2		100	901	0	100	103	100	304			ĺ			=
Acrit region (11.11ths)	1000	100	932	Hotel	101	101	100	101	1006	[1006]	909	100	Dod	bod	101	ĺ		Ī		Ę	F
Jetreahed grain yield (% treated control)				C.				0.000	00000	15.50											
Antoniomic features	12	Di .	18	2	4	#	2	22	8	81	我	OE .	E.	8	£	1	4		2		40
Sesistance to lodging without PQR (1-8) - see note below				wh	1		+	-					-	-	-	1		-	-		-
Sesistance to lodging with PGR (1-9) - see note below			7	1					*	1		4	4	*							4
Neight without PGR (om)	6	28	8	ä	80	90	87	8	20	×	22	87	2	20	2	=	=	0		Į	
Spaning (days +1- Skyfall, -ve in earlier)	-24	0	7	*		-	-	-10	0		•	0	*	**	*			*5			2
Sealance to sprouting (1-6)		æ	ĸ		E		w	ex.	*		区	**	**		麗		*		×	=	ga .
Michel (1-6)						+	+		*					*		1				E	-
Nellow mast (1-6)		1		4	**						10		•			1					4
Bown rust (9-6)	•		1	*			**		wh		10		*		*			40			
September 19-100	8.4	4.0	5.9	6.0	17	40	4.6	8.8	1.7	63	6.6	5.8	4.6	12	5.9			5.8			w.
Septenta trittol (1-4) - one-year rating - see note below	0.0	9.4	200	62	7	90	4.0	4.9	0.0	10	6.1	5.5	43	6.0	5.7	**	*		6. 5.7		
(hespot (1-8)	£	*	*	X		*		P.	£	100	*	*	*	100	*				*		90
Valantum ear bigger (1-6):							*	*0					*	40							-
Standar wheat blockon minba		*		4	-				=	4	*				E	7	*	*			6

Lodging ratings for Rt. 2022/23

The vacion and its catculate the incipies for the R. 2022(23 have been adjusted to incide assuragethe and resoluted that points. The aim is to make the strong even asparagation of what is seen in the field and improve commission of the aim is societized to be constructed, to represent the contract of the second and the proper commission of the second and the secon

Without wheels appoint this (deesar enablation) and the control of the control of

RECOMMENDEDLISTS Winter barley 2022/23

MARKET OPTIONS, YIELD AND GRAIN QUALITY, AGRONOMY AND DISEASE RESISTANCE

Particle (Control of the branch grain) The control of the branch grain yell of the branch grain) The control of the branch grain yell of the branch gr	AHDB RECOMMENDED	unqo		elbneT 8V	wate	Bujuqui	жиеора	opzeg :	niethwork :	selmio sa	wepa	Bullimath SV	***	undig	EMIO SA	NS Creswell	aitai	Minnofile	elesso Sv	(S) OSJ eđeve
Attack grain yield (% breaded control) 10	dute once	13	20	A.M	98	'n	9	อา	97	A34	or		ng	97	es.	AM .	en.	10	A.M	**
C C C C C C C C C C	code of recommendation	¥	×	XI	i N	ĕ	ш	š	×	×	×	×	š	×	×	į	š	3	3	
and grainly yield (% treated control) 10-8 hould 10-8 hould 10-8 hould 10-8 hould 10-9 hould 10-	athety status		0		1	MEM	п	MEW	u								i e		i i	
Fig. 8 th will be set Fig. 1 to Fig.	ungicide-treated grain yield (% treated control)		2																	
State Stat	nded Kingdom (9.8 s/kg)	*	98	100	104	tos	100	103	100	105	101	101	101	101	100	100	8	8	205	27
Company Comp	est region (9.6 s/ha)	8	8	108	105	101	904	ğ	100	101	103	102	3	101	901	100	200	200	200	3.2
Any professional page one 10st 103 103 103 103 103 103 105 105 105 105 105 105 105 105 105 105	est region (10.0khu)	8	3	101	100	11031	101	[Joh]	100	100	101	101	100	100	101		8	8	8	3.0
Any model (%) treated controls) 73	onn region (10.0 Uhla)	2	98	101	103	103	100	100	100	8		8		100	88	100	8	1961	8	3.6
Quality The part of the pa	ntreated grain yield (% treated control)																			
Applications of F F F F F F F F F F F F F F F F F F	nibed Kingdom (9 8 0 hai)	R	10	982	Z,	99	- 91	202	2	2	8	- 18	29	10	98	R	a	ŧ.	1.0	9.0
Provide for Preving uses	ain market options																			
Page 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						٠					÷									
No Not Not Sign	rain quality																			
20 20 14 15 15 08 16 15 20 15 15 15 15 15 15 15 15 15 15 15 15 15	sectic weight (kg/hl)	70.0	70.4	202	600.5	0.00	70.7	689	10.5	808	9 69	9.00	70.1	9.07	1.0	1.00	70.8	2.60	72.1	80
59 6.2 6.1 4.2 5.6 2.7 5.4 6.0 5.9 37 5.6 4.7 37 4.6 5.6 5.7 7 <td< td=""><td>cheerings (% through 2.25 mm)</td><td>2.0</td><td>2.0</td><td>1.4</td><td>1.3</td><td>976</td><td>60</td><td>1.0</td><td>61</td><td>2.0</td><td>13</td><td></td><td>12</td><td>13</td><td>1.6</td><td>1.8</td><td>**0</td><td>978</td><td>22</td><td>0.7</td></td<>	cheerings (% through 2.25 mm)	2.0	2.0	1.4	1.3	976	60	1.0	61	2.0	13		12	13	1.6	1.8	**0	978	22	0.7
1.73 1477	creenings (% through 2.5 mm)	8.9	6.2	7	42	9.6	2.7	8.8	0.0	2.9	3.7	3.5	17	3.7	4.9	8.8	10	8 10	3.5	1.8
中	Impen content (N)	1.73	175				¥	3	7	V	¥		Att			*	,	×	Ť	0.20
# 15 12 22 22 22 22 23 25 25 25 25 25 25 25 25 25 25 25 25 25	Latus in RL system																			
7 7 8 7 8 7 8 7 1 1 1 0 0 0 0 7 7 7 7 7 7 7 7 7 7 7 7		#	16	. To	57	R	ñ	8	10	2	8	8	=	10	10	ti.	10	13	10	
	grenomic features																			
	esistance to lodging without PGR (1-8)					Œ.		E	۰	ø	e		1						1	7
## 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	esistance to lodging with PGR(1-8)	*			-			7	u				1	1		7		1	2	1.0
20 20 20 20 20 20 20 20 20 20 20 20 20 2	cas height without PGR (onl)	26	-00	18	8	1883	3	1963	2	201	26	1	8		00	8	1	8	8	8.0
A. op vesting 1. 0 0 0 0 0 1. 1. 1. 0 0 0 0 0 0 0 0 0	mas height with PGR jorni	8	×	×	69	z	2	8	2	8	1	92	12	16	28	2	2	8	2	2.7
	pening (+/-1035 Orwell, -ve + sarled)	+		0	0			0	10			Ŧ		ī	0		5		Ŧ	17
	isease rosintance.																			
	30m (1-9)			100		4			an .	1	10	10		107			100		es.	12
	open stati (1-8)									ø			1		-				-	1.0
	synchosponium (1-8)					•	*						1						w	7
	of blottch (1-8)			100	25	100	E	9			*		*		un.	*	E			+
	evalue.	æ	æ	æ	œ	ĸ	æ	Œ	œ	æ	æ		n	Œ	œ	æ		œ	æ	+

Lodging ratings for RL 2022/23

The scales used to educate the looking patings for the R. 2022/23 have been edicated to exclude succeptible and estatured food point. The aim is to make the natings more sponserables of what is seen in the field and improve consistency of the satings over years. This has contributed to a drop in reflect, compared to the SCST. R. Newwest is the does not make their succeptible since more succeptible since has become more succeptible since and results year, A first all status, satisfies a spellicemen (ASD) should be starn tries account when deciding if varieties have a different succeptibility to the task.

RECOMMENDEDLISTS

AHDB

Winter barley 2022/23

MARKET OPTIONS, YIELD AND GRAIN QUALITY, AGRONOMY AND DISEASE RESISTANCE

AHDB

(NG) ggg ső

	endation		ed grain yield (% treated control)	100100
End-use group	Scope of recomm	Variety status	Fungicide-trea	Children of Ministers of

North region (10.0 Uha) West region (10:00/ha) East region (9.5 Uha)

Untreated grain yield (% treated control) United ROugston (S.S. 176)

I

MBC materig approval for browing use Main market options

Grain quality

Screenings (% Drough 2.25 see) (ALGE) methy (10/14)

2.0

2 B 2

z

Boresmigs (% through 2.5 mm) Nongen content (%)

Status in Fil. system

Year first listed

Resistance to lodging without PGR (1-9) Agrobonic features

Resistance to lodging with PGR(1-9).

Roeving (+1-KNS Owell, -ex + sailer) Streen height without PGR (cm) Braw height with PGR (sm)

Disease resistance Brown rast (3-8) Middow [1-9]

Rynchosponium (1-8) Nec beauth (1-5). Varieties no longer listed KVIS Tower, Libra and SV Seracoda. Competitions of variety performance access. sance across regions are not vaild.

 Specific recommendation, KNB frants has a specific commentation for beleasted to Bethy pellow dead visus (BYDV), waste to BYDV has not been varified to Recommended List twen mended for the North region sended for the West region UK + Reconsended for the UK

2222 0 0 2 8 2.5 12 13.2 22 Ħ On the 1-8 scales, high figures indicate that a variety shows the character to a high degree (a.g. high resistance). are not safe × × = 2 ı £ 2 74 z R

2 8

R = Belleved to be resistant to Barley with mosaic virus distMN) and to derlay yellow mosaic virus (SaYMI) strain t. (BakAN) and to Santay yestre-mosaic virus (SarNAI) strait but this has not been vertied in Recommended List lests. - Vanety no tonger under seat in Fit, trials

C + Yield control (for current tables PGR = Plant growth regulation | | = Limited date

- Hybrid variety

Average LSO (IN); Varieties that are none than one LSD apart are significantly different at the 90%. LSD - Least significant differents

YIELD, QUALITY, AGRONOMY AND DISEASE RESISTANCE

RECOMMENDEDLISTS Spring barley 2022/23

	nesnel	Skyway	xxolesi	elnov8 Y8	tenniqă	nategauT Y8	919 1 10 01	oteonus	vobraids YS	Jonel TDA	Fairing NWS Sassy	Louiney	Malvem	SibeC	_ exos 80	Average LSD (5
End-use group					all a	ang vari	. Ligo					•	dvante			
Scope of recommendation	š	š	š	š	N.	5	š	š	š	š	S Xn	ux ,	W ES	ERW LK	CK NASLOS	Los
Variety status	MEW			NE.W	MEW		9	٥		v			3		MEN	2
Fungicide-treated grain yield (% treated control)																
United Kingdom (7.4 tiha)	90%	106	103	103	100	100	102	102	905	8	82 83	1			101	
East region (7.3 Vha)	106	901	103	104	100	101	103	305	102	8	26 85	104	100	906 108		23
West region (7.1 Uha)	[1001]	9	100	1904	[1004]	00	101	100	100	8	26 26				[100]	
North region (7.8 t/ha)	101	100	104	102	101	101	102	305	100	8						
Untreated grain yield (% treated control)																
United Kingdom (7.4 UPa)	8	3	8	8	8	8	10	3	8	8	80 09	16	99	00 70	0.5	2.0
Agronomic features																
Resistance to lodging without PGR (1-9)	9	1	,	h	1	1		10	1	4	9	1	- 1		100	80
Straw height without PGR (om)	8	Z	8	E.	20	r.	I.	8	22	22	77 70	7.0 7	K .	99 #	2	1.6
Ripening (+/-RGT Planet, -ve = earlier)	÷	0	0	Ŧ	Ŧ	Ŧ	2	Ŧ	Ŧ		+1 42	-	+ 0		7	
Resistance to bracking (1-9)			80	9	10	10					9	9	9		9	6.0
Disease resistance																
Mildew (1-0)		m	8	æ	m		0		a		8 6				0	
Brown rust (1-9)		*	*	*	10	*	40	10		10	8 4	3		•		12
Rhynchosponum (1-9)	M	Ξ	m	E	Ŧ	•	w		¥	40		1	III D	121 141	181	
Main market options																
MBC matting approval for brewing use		a.		٠	-	a		u	а		N					
MSC matting approval for mait distilling use	,	0	a.				į.		F	z			100			
MBC meting approval for grain distilling use	,	٠	×	٠	· v		÷		-	z				į		

Comparisons of variety performance across regions are not vald. Varieties no longer listed: Cosmopolitan, Icoelc, Propino and Sienes C = Yield control (for current table). For this table, Cosmopolitan and Propino were also control varieties but are no longer listed " = Variety no longer under test in RL trials

E a Recommended for the East neganing W. Recommended for the West inegen 8g = Specific recommendation, Fairing is suitable for the production of mail for grain distilling. UK = Recommended for the UK

Average LSD (5%): Varieties that are more than one

LSD apart are significantly different at the 95% confidence level LSD = Least significant difference

N = Not approved by MBC in this segment P = Provisional MBC approval in this segment T = Under test for MBC approval in this F = Full MBC approved in this segment

PGR = Plant growth regulator (1) = Limbed data

- » Variety lacking a gene for lipogenase production (a NuthLos

Winter Beans PGR0 Descriptive List 2022

The control for yield is the mean of four and five year varieties (4.55t/ha.) Yield differences of less than 10.0% are not statistically different.



	Year n first listed
	No. years in matrix
aracters	Protein content (% dry)
Seed ch	Thousand seed weight (g) (@ 15% mc)
	Standing ability at harvest (1-9)
	Straw length (cm)
ic characters	Earliness of maturity (1-9)
Agronom	Flower
	Yield as % control
	UK Agent (see appendix)

	appendix)			(a-L)		(1-9)	(@ 15% mc)			
Pale Hilum										
Vespa	Sen	108	ပ	9	122	œ	682	26.2	ß	18
Vincent	Sen	106	O	2	123	œ	804	27.5	4	21
Bumble	Sen	102	ပ	4	126	7	289	25.8	ß	16
Norton	Sen	101	ပ	7	118	œ	869	26.3	4	21
Tundra	Ę	96	ပ	9	112	œ	633	26.2	ß	14
Honey	Sen	96	O	7	Ŧ	œ	683	26.1	ß	12
Pantani	LSPB	83	O	7	96	œ	069	24.3	ო	22
Wizard	Sen	95	O	9	115	œ	675	26.8	ß	83

(1-9) A high rating indicates that the variety shows the character to a high degree.

The scales of characters of winter beans do not necessarily correspond with those for spring beans. Wizard has resistance to leaf and pod spot (Ascochyta fabae).

© PGR0 2021 24.11.21



Combining Peas PGR0 Descriptive List 2022

The control for yield is the mean of four and five year varieties (4.05 t/ha.) Yield differences of less than 13.6% are not statistically different.

										1.00	Mills	Mar.	•	10	
	Year first listed		20	20	18	11	22		22	18	21	21	20	21	18
	No. years in matrix		2	2	2	2	က		က	ις	4	4	ις	4	2
acters	Protein content (% dry)		22.0	22.1	22.6	22.3	22.0		21.5	21.4	25.2	21.9	21.5	21.4	22.3
Seed characters	Thousand seed weight (g) (@ 15% mc)		296	311	275	285	272		234	279	290	289	276	309	248
o to	Powdery mildew *		[8]	[S]	[MR]	[S]	[8]		[8]	[S]	[S]	[8]	[S]	[S]	[8]
Resistance to	Downy mildew (1-9)		2	2	7	2	œ		œ	œ	œ	œ	œ	4	9
Œ	Pea wilt (Race 1)		œ	Œ	Œ	Œ	[S]		Œ	Œ	œ	œ	Œ	Œ	œ
racters	Standing ability at harvest (1-9)		7	9	7	9	7		7	9	7	9	7	9	9
Agronomic characters	Straw length (cm)		78	85	84	85	8		88	83	88	90	80	83	87
Agrono	Earliness of maturity (1-9)		9	9	9	9	9		9	4	2	2	2	9	2
Π	Yield as % control		115	Ξ	108	107	103		117	110	109	108	108	107	106
	UK Agent (see appendix)		Sen	LSPB	KWS	Sen	Sen		LSPB	LSPB	IARA	IARA	Sen	LSPB	Sen
THE REAL PROPERTY.	DGBO Supri	Yellow (white)	Kameleon	Orchestra	Manager	Karpate	Rivoli	Green (Blue)	Carrington	Bluetime	Mikka	Greenway	Kactus	Stroma	Karioka

- Z							7.1									
18	20	20	10	07	19	16	17	17		10	83		21	20	20	80
ß	S	4	2	S	4	4	ß	2		က	က		4	ß	2	Ŋ
23.0	22.3	22.2	21.7	21.5	22.2	21.5	20.9	22.2		22.7	24.8		23.1	23.4	22.9	23.2
231	320	276	264	296	249	255	220	264		235	249		405	392	385	377
[HH]	[8]	EH.	<u>[S]</u>	[S]	<u>s</u>	S	[HB]	[S]		S	S		<u>s</u>	[S]	S	S
80	4	œ	7	7	7	9	2	2		œ	œ		4	7	2	8
œ	Œ	Œ	Œ	Œ	Œ	Œ		Œ		Œ	S		œ	Œ	Œ	œ
7	9	7	9	9	7	7	9	7		9	2		ß	7	7	9
88	18	78	8	79	84	98	72	98		99	78		84	18	8	83
8	9	2	7	4	2	2	œ	4		9	7		4	8	ო	ß
102	102	100	86	46	96	96	95	90		92	88		96	88	98	98
LSPB	LSPB	Ě	Agrii	Ě	KWS	Ě	IARA	Ě		Ę	Dalt		LSPB	IARA	Sen	Dalt
Blueman	Greenwich	LG Aviator	Daytona	Prophet	Mankato	Kingfisher	Greenwood	LG Stallion	Maple	Mantara	Rose	Marrowfat	Akooma	Octavia	Banshee	Sakura

may vary in different regions as race structure of the disease changes. Pea wilt (Fusarium oxysporum f. sp. pisi)(race 1) R = Resistant; S = Susceptible. Data for new varieties supplied by SASA *Powdery mildew Breeders information - HR = High resitsance, MR = Moderate resistance, S = Susceptible. (1-9) A high rating indicates that the variety shows the character to a high degree. All varieties are semi-leafless. Downy mildew: Varietal resistance © PGR0 2021 24.11.21

Spring Beans PGR0 Descriptive List 2022

The control for yield is the mean of four and five year varieties (4.46 t/ha.) Yield differences of less than 7.2% are not significantly different.

The state of the s			Agi	Agronomic characters	characte	S	Resist	Resistance to	Seed characters	racters		
PGBO.	UK Agent (see appendix)	Yield as % control	Flower	Earliness of maturity (1-9)	Straw length (cm)	Standing ability at harvest (1-9)	Downy mildew (1-9)	Rust* (1-9)	Thousand seed weight (g) (@ 15% mc)	Protein content (% dry)	No. years in matrix	Year first listed
Pale Hilum												
Lynx	LSPB	106	O	9	114	80	7	4	220	27.4	ß	16
Ghengis	LSPB	105	O	7	118	œ	က	ß	222	27.5	ĸ	20
Stella	SU	105	O	7	116	œ	ო	ß	547	56.9	4	21
Daisy	SU	104	O	7	114	œ	ო	w	547	27.4	4	2
Capri	SU	103	O	7	114	œ	က	4	533	27.6	4	21
Macho	LSPB	103	O	9	114	œ	4	9	688	26.3	ıo	8
LG Raptor	Ě	102	O	7	114	80	4	ıo	553	27.1	ιc	20
LG Sphinx	Ě	102	O	9	114	80	4	4	523	27.5	4	21
Fanfare	LSPB	102	ပ	9	115	80	ıs	4	299	27.2	ĸ	13
LG Viper	ž	102	O	9	105	6	9	7	633	28.4	4	21
Vertigo	LSPB	100	O	7	114	80	2	4	290	27.1	ß	13
LG Cartouche	ž	96	O	9	107	6	4	9	554	29.1	ß	17
Fuego	Ě	92	O	7	110	80	4	4	286	27.7	ın	S
Yukon	LSPB	91	O	80	106	00	80	9	632	26.4	S	20
Pale Hilum & LVC												
Victus	LSPB	103	ပ	7	109	œ	ις.	4	269	27.4	2	19
Tiffany	LSPB	101	O	7	114	œ	4	4	539	28.2	ıo	19
Allison	LSPB	86	O	7	109	89	7	ß	572	26.1	4	2
Bolivia	LSPB	98	O	9	108	8	4	9	206	27.2	4	2

Key to Source of Varieties Agent Code On DL. UK Agent.	Agrii	Dalton Seeds	MR Agri	KWS UK Ltd	LS Plant Breeding	Limagrain UK Ltd	Sasten Union (Ut) VId	Senows 116	WA Church (Bures) 11st
Key to Source A	Agrii	Dalt	IARA	KWS	LSPB	rux	75	Ę	WAC

correspond with those for winter beans. a high degree. The scales of characters the variety shows the character to of spring beans do not necessarily (1-9) A high rating indicates that

The export market usually requires pale hilum types. LVC = Low Vicine & Low Convicine.

*Rust data influenced mostly by 4 trials in 2020. The Isd is approx 1 rating point. © PGR0 2021 24.11.21

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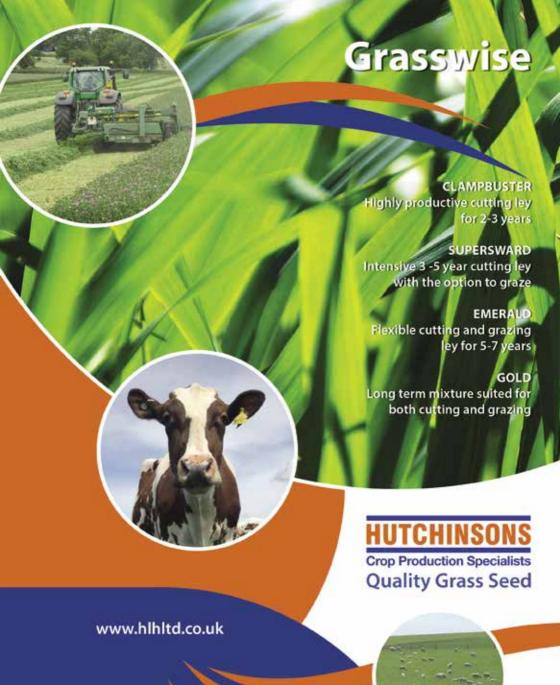
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82

Black Hilum, Tic Maris Bead





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