

Sugar Beet Varieties 2024

SEEDING
THE FUTURE
SINCE 1858



Welcome to KWS’ Sugar Beet Varieties 2024

With the increasing need for resilience in the arable rotation we’re pleased to share the choices provided by KWS UK for your sugar beet crop in 2024.

While yield improvement remains a core task for sugar beet breeding we continue to see other characteristics take on additional importance in protecting the sugar beet crop - particularly as many of our important active ingredients are at risk.

Recent developments such as CONVISO® SMART and MARUSCHA KWS continue to offer choice, for weed control and tolerance to BMVYV respectively, to sugar beet farmers and we hope to introduce new characteristics in the near future - including CR+ which offers excellent levels of Cercospora tolerance combined with high yields both with and without infection.

KWS’ breeding and development work is underpinned by our trials capability in the UK - look out for a few facts through this booklet and please do get in touch if you’d like to see or hear more about the amazing work our AgroService, Consultancy and Trials Teams are doing to support your choices for sugar beet.

Best wishes for a safe and productive crop in 2023.



Ben Bishop
Country Manager Sugar Beet UK

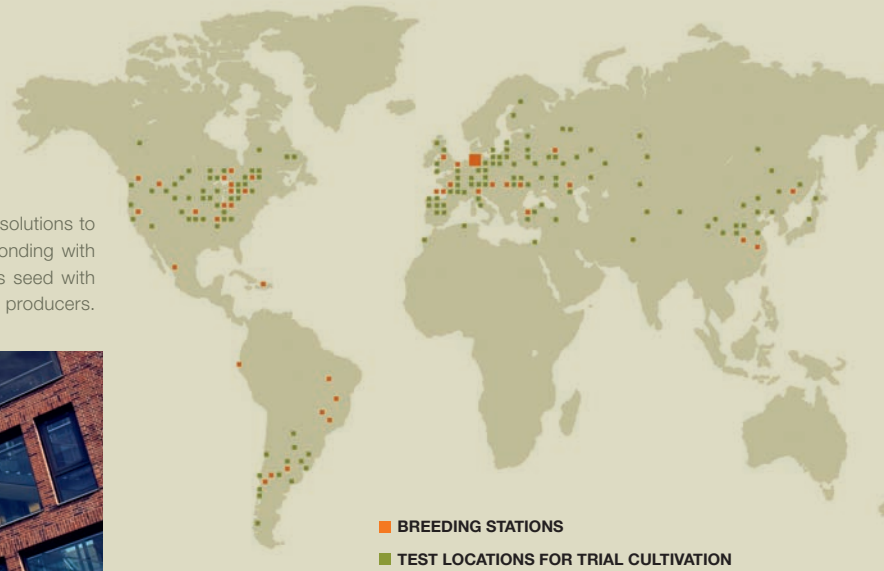


Content	04-05	KWS GROUP
	06-07	SUGAR BEET VARIETIES FOR DRILLING IN 2024
	08-09	OVERVIEW OF VARIETIES AND RESISTANCES
	10-11	EPD2.0 AND BEET SEED SERVICE
	12-17	CONVISO® SMART INTEGRATED RESISTANCE MANAGEMENT STEWARDSHIP PRINCIPLES HOW TO APPLY CONVISO® ONE CORRECTLY
	16-17	SMART VESNICA KWS
	18-19	MARUSCHA KWS
	20-26	CLASSICAL VARIETIES BEET CYST NEMATODE DAPHNA HARRYETTA KWS KATJANA KWS ANNATINA KWS PHILINA KWS
	26	KWS SUGAR BEET TEAM

KWS GROUP

Serving farmers
for **over 165 years**

KWS is one of the world's leading seed suppliers offering innovative solutions to farmers in 70 countries. Focusing on grower's challenges and responding with innovative tools, technology and hybrid performance, KWS provides seed with high-performing genetics supporting today's progressive farmers and producers.



KWS seeds the future

Our high-yield seeds and extensive knowledge make us a trusted partner of farmers – for generations. In this way, we contribute to solutions for the nutrition of a steadily growing world population. KWS invests almost 20 % of its net sales on research. Our portfolio includes 11 from the 13 most cultivated crops worldwide.



Focus on Your Growth



SOLUTIONS



PERFORMANCE



INNOVATION



RESEARCH



SERVICES



Sugar beet varieties for drilling in 2024 | Adapted from BBRO recommended list of Sugar Beet Varieties 2024

Rz1 rhizomania varieties			BTS1915	DAPHNA	BTS1140	HARRYETTA KWS	KATJANA KWS	ANNATINA KWS	Wren						
Status: (C) = control variety ¹		Y4 (C)								Y7 (C)	Y6 (C)	Y2	Y3	Y2	Y3
AYPR/BCN/ALS/VY as claimed by the Breeder ⁶		-								BCN	-	BCN	BCN	-	-
CROP YIELDS	MEAN														
Adjusted tonnes % of C=100% ²	103.3 t/ha	103.9								101.5	99.1	102.9	101.6	100.4	99.2
Sugar yield % of C=100% ²	16.53 t/ha	103.9	101.5	99.1	102.9	101.6	100.4	99.2							
Root yield % of C=100% ²	95.4 t/ha	104.5	101.8	99.5	103.8	101.2	99.3	102.4							
Sugar content %	17.20%	17.1	17.2	17.2	17.1	17.3	17.4	16.7							
BOLTERS per 100,000 plants/Ha	MEAN														
“X” Unsuitable for sowing BEFORE Mid March		X													
Early sowing, before 5 March ³	1,735 /ha	4117	1729	1564	1344	1118	1748	1904							
Normal sowing	26 /ha	21	7	64	0	9	9	72							
PRE-GAPPING ESTABLISHMENT ⁴															
Control	100%	100.6	100.8	100.5	99.1	101.3	97.1	102.9							
DISEASE															
(1 = high leaf infection 9 = very low leaf infection) ⁵															
Rust	5.7	6.8	4.8	6.5	3.5	2.8	5.5	5.7							
Powdery mildew	5.0	5.1	4.9	4.5	4.6	4.9	4.8	4.8							
Cercospora	6.5	[6.6]	[6.8]	[6.1]	[6.3]	[6.4]	[5.9]	[6.5]							

Mean of control varieties includes Kortessa KWS and Evalotta KWS which are no longer listed.

¹ Newly listed varieties (PR1/PS1) have results from three years using approximately 2 kgs breeders’ seed. Thereafter commercial seed should be used in RL trials.

² Yields based on an average plant population of 99,000 plants/ha in these trials. Differences in adjusted tonnes of less than 3.8% should be treated with reserve.

³ The ratings from normal sowings are applicable for sowing after mid-March in most seasons.

								PHILINA KWS	BTS Smart 9485	NEW SMART VESNICA KWS	MARUSCHA KWS
Osprey	BTS3610	Morgan	Button	BTS3020	Adder	Tawny	Stewart				
Y1	Y3	Y2	Y2	Y3	Y2	Y2	Y2				
AYPR	-	-	BCN	-	-	-	-				
99.2	98.9	98.8	98.2	98.0	98.0	97.6	97.2	97.5	94.3	94.0	89.9
99.2	98.9	98.8	98.2	98.0	98.0	97.6	97.2	97.5	94.3	94.0	89.9
100.6	98.1	98.5	99.4	96.3	100.7	99.1	96.7	98.4	96.4	92.6	88.6
16.9	17.4	17.2	17.0	17.5	16.8	17.0	17.3	17.1	16.9	17.4	17.4
X								X			X
[2020]	2170	3385	1547	1023	3169	2802	1871	3375	1489	1972	4200
26	0	28	9	21	9	47	16	47	21	12	76
								102.4	97.5	101.3	97.1
102.8	99.3	100.3	101.9	100.8	102.0	101.7	99.0				
[4.7]	(6.2)	4.1	4.5	8.1	5.7	6.8	2.8				
[4.2]	5.2	4.0	4.7	5.2	5.0	5.1	4.0				
[7.6]	[6.9]	[6.0]	[6.3]	[7.2]	[6.5]	[7.3]	[5.5]	[6.7]	[6.0]	[7.0]	[8.5]

⁴ Differences in establishment of less than 4.2% should be treated with reserve.

⁵ Cercospora ratings should be treated with caution as newly observed disease and are based on 2020 and 2021 data only.

⁶ Breeders claims are for tolerance to some of the yellowing viruses

[] denotes limited data

Overview of varieties and resistances

Choose the right combination for your needs

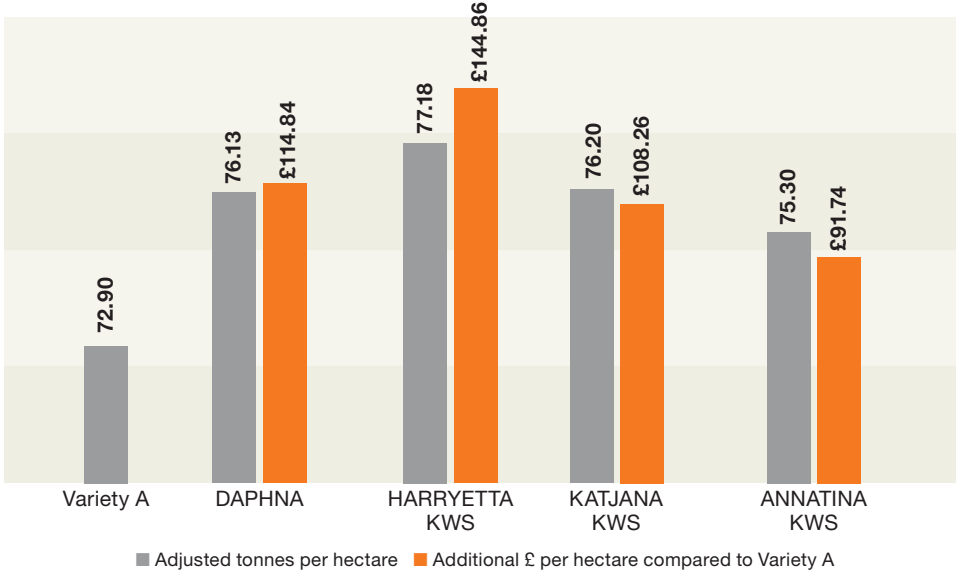
KWS sugar beet seed at a glance

	NEW FOR 2024	Rhizomania Protect	Rhizomania Protect 2.0	Nematode Protect	Virus Yellow's Protect	CONVISO® SMART	EPD 2.0	Suitable for early drilling
DAPHNA		✓		✓			✓	✓
HARRYETTA KWS		✓		✓			✓	✓
KATJANA KWS		✓		✓			✓	✓
ANNATINA KWS		✓					✓	✓
PHILINA KWS		✓	✓				✓	
SMART VESNICA KWS	✓	✓				✓	✓	
MARUSCHA KWS		✓			✓		✓	

Source: KWS recommendations

DID YOU KNOW?

KWS has over 40 sites with observational strip trials or whole field demonstrations of current and new varieties and products in 2023.



Seed cost Variety A: £233.90 (£194.92 per unit x 1.2 units/ha)

Seed cost DAPHNA: £248.06 (£206.72 per unit x 1.2 units/ha)

Seed cost HARRYETTA KWS: £260.04 (£216.70 per unit x 1.2 units/ha)

Seed cost KATJANA KWS: £257.64 (£214.70 per unit x 1.2 units/ha)

Seed cost ANNATINA KWS: £222.84 (£185.70 per unit x 1.2 units/ha)

Assumed beet price: £40.00 per tonne

75 t/ha used as base yield. Varieties that yield more than 100% of controls do yield more than 75 t/ha in this example.

Source: KWS calculations April 2023.

Protect the establishment of your sugar beet fields with EPD2.0 seed treatment from KWS



The benefits of choosing EPD2.0 for your sugar beet crop:

- Fast and even germination
- Fast and even emergence
- Early and rapid plant development for early crop vigour

1.5% higher yielding than KWS' EPD seed treatment*

*KWS UK Seed Technology Trials 2016 - 2018 (conducted by BBRO)

DID YOU KNOW?

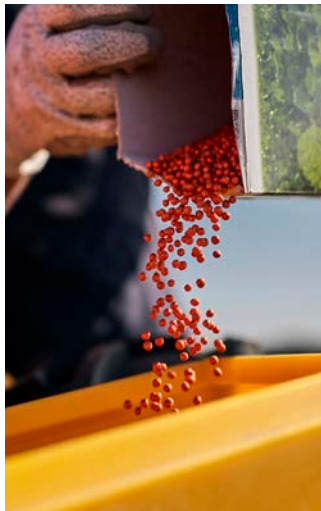
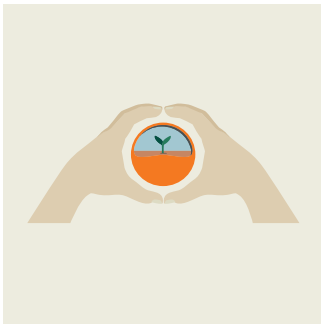
KWS has contracted over 200 plots of replicated trials in the UK to test new seed treatment technologies in 2023.

Register your sugar beet fields with KWS Beet Seed Service to benefit from:

- **50% of the initial sales price for replacement seed** if you need to re-sow
- Field specific advice
- Exclusively for KWS sugar beet varieties with **EPD 2.0 seed treatment**
- Now available in **myKWS App**



To register for Beet Seed Service scan the QR Code or visit www.beetseedservice-uk.com



I'VE GOT THE POWER
to save time with
a single application.



Push the button for **more efficient weed control** in sugarbeet.



INTEGRATED RESISTANCE MANAGEMENT

Rotation is the key!

Reduce the risk of resistance by alternating herbicides with different modes of action in your crop rotation.

Chemicals



Use herbicides with different modes of action.

Maximise herbicidal efficacy with:

Use the full rate.

Proper timing of application.

Optimum application conditions.

Avoid using ALS herbicides in your rotation after growing CONVISO® SMART varieties.

Cultural



Make a diversified rotation including spring and autumn crops.

Sow cover crops, as green fertilization, fix N, reduce weeds and nematodes.

Have a competitive crop, with adequate density and good establishment.



Efficient weed management is in your hands: choose the best strategies according to the weed population in your fields.

STEWARDSHIP PRINCIPLES

The three key principals of stewardship for CONVISO® SMART weed control system for sugar beet are:

- To prevent seed return – minimising the weed seed bank
- To protect the Mode of Action – retaining the use of the active ingredient
- To ensure accurate use of the system – reducing resistance risk

STEWARDSHIP PROGRAMME

Users and advisors of the CONVISO® SMART system will need to manage and record activities to the Stewardship Principles.

1. Traceability of CONVISO® SMART sugar beet

Record the location and variety to ensure the crop can be managed affectively (e.g. correct herbicide applications, following crop choice etc.)

2. Control of bolters and groundkeepers

Prevention of beet seed return to prevent herbicide tolerant weed beet in following and/or subsequent crops.

3. Correct use of CONVISO® One herbicide

Following the label recommendations to maximise the efficacy of CONVISO® SMART

4. Actions to minimise risk of weed resistance

CONVISO® SMART should be used as a weed control tool across the whole rotation along with other control methods to reduce resistance risk (e.g. choice of rotation, alternative Modes of Action etc.).

5. Keep sufficient records

Record actions taken to demonstrate responsible use of CONVISO® SMART – particularly the points above

6. Provide information to users

Giving all users and operators suitable and sufficient information to maximise the efficacy of CONVISO® SMART.

CONVISO®
SMART

HOW TO APPLY CONVISO® ONE CORRECTLY

Standard recommendation

- Max. yearly dose rate 1.0 L/ha as a single application
- Registered application window: 4 - 8 true leaves of sugar beet
- Apply using a pressure of 2.5 - 3.0 bar and a spray quality of fine to medium (BCPC category)
- Correct application timing: max. 4 true leaves of fat hen
- If no fat hen is in the field: apply when the first plants of other weed species reach max. 4 true leaf stage (BBCH 14)



✗ Too small

Aiming for two to four true leaves of the fat hen



✓ Correct target size

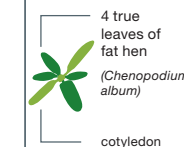


✗ Too big

! Always follow the label recommendations of CONVISO® ONE.

single application

1.0 L/ha
CONVISO® ONE





NEW

The next step in performance with CONVISO® SMART



CONVISO® SMART VARIETIES

Get the Power with SMART VESNICA KWS

High yielding herbicide tolerant variety

Good tolerance to Rust and Cercospora

For use as part of the CONVISO® SMART weed control system for sugar beet

New for 2024 drilling, SMART VESNICA KWS offers farmers a step forward in yield and leaf disease tolerance with the CONVISO® SMART technology. When used with the dedicated CONVISO® ONE herbicide, SMART VESNICA KWS will deliver yield very close to controls. With normal sown bolters well below average, sugar beet farmers can choose SMART VESNICA KWS with confidence. It is recommended to drill CONVISO® SMART varieties from mid-March onwards to limit vernalisation.



DID YOU KNOW?

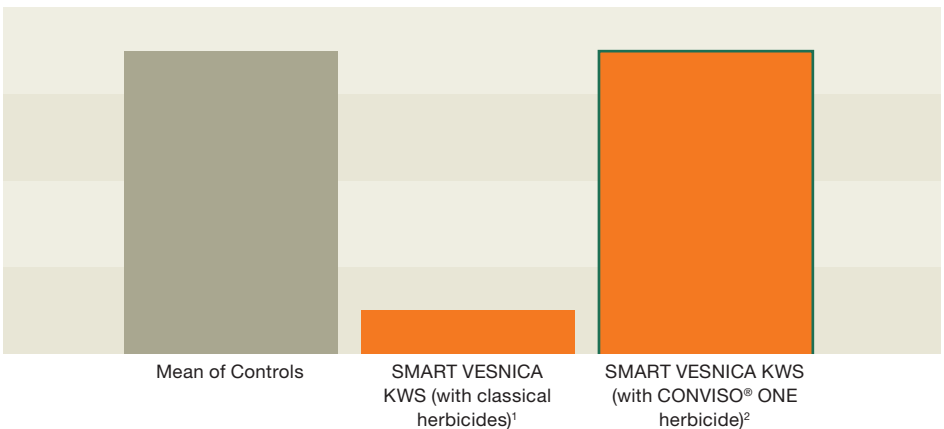
KWS will complete replicated plot trials at 4 locations in 2023 to measure the yield benefit of using CONVISO® ONE herbicide with SMART KWS varieties.



SMART VESNICA KWS with a single application of 1 x 1LT/Ha of CONVISO® ONE

Improved yield through better crop safety and weed control.

Adjusted tonnes (% of controls)



Source: ¹ BBRO Recommended List of Sugar Beet Varieties 2024 (based on trials from 2020 – 2022) using classical herbicides; ² includes 5.95% yield benefit from using CONVISO® ONE measured in CONVISO® SMART System Trials, 2018 – 2020 conducted by KWS UK (plots harvested and analysed by BBRO).



The new approach to controlling Virus Yellows



CLASSICAL VARIETIES – VIRUS YELLOWS

An integrated approach to managing Virus Yellows

Control of Virus Yellows requires an integrated approach including the development of tolerant sugar beet varieties, agronomic good practice and crop protection.

MARUSCHA KWS is the first generation of KWS Virus Yellows tolerant sugar beet and shows excellent tolerance to Beet Mild Yellowing Virus (BMV) and a competitive response to Beet Yellowing Virus (BYV).

DID YOU KNOW?

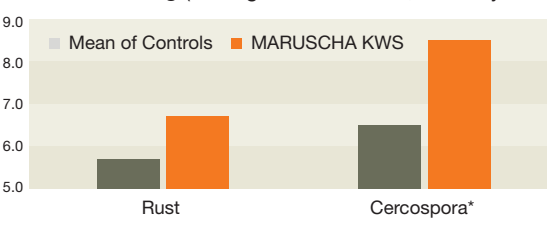
KWS has conducted Virus Yellows trials in the UK since 2017 and in 2022 alone used 400, 000 aphids to inoculate sugar beet plots at three locations.



A visibly greener canopy

- Competitive yields
- Strong tolerance to BMV
- Best drilled from mid-March onwards

Disease scoring (1 = high leaf infection, 9 = very low leaf infection)

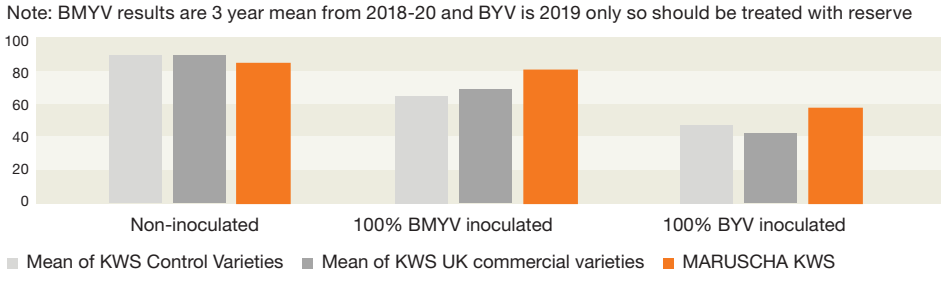


Source: ¹ BBRO Recommended List of Sugar Beet Varieties 2024 (based on trials from 2020 – 2022)



MARUSCHA KWS strip trials in field 2022
Source: KWS

MARUSCHA KWS yield performance in UK trials (adjusted tonnes per hectare)



Source: KWS UK replicated VY plot trials from 2018-2020: 100% inoculated trials.

Beet Cyst Nematode – a small pest with a huge impact

CLASSICAL VARIETIES – BCN

Yield losses of 30 – 60% may be possible

- The first 10% often show no visible symptoms

Typical Symptoms

- Patches of wilting leaves under midday sun
- Stunted and deformed root growth
- Roots with a “bearded appearance”
- Visible white or brown cysts on root hairs

WHAT TO DO TO PROTECT AGAINST BCN

- 1. Choose a tolerant variety**
There are no yield penalties with KWS
- 2. Use a wide crop rotation**
Non-host plants reduce BCN by c. 40% per year
- 3. Test**
Regular soil and crop checks for BCN



DID YOU KNOW?

KWS tests potential trial fields before selection to ensure they are free from BCN.

DAPHNA



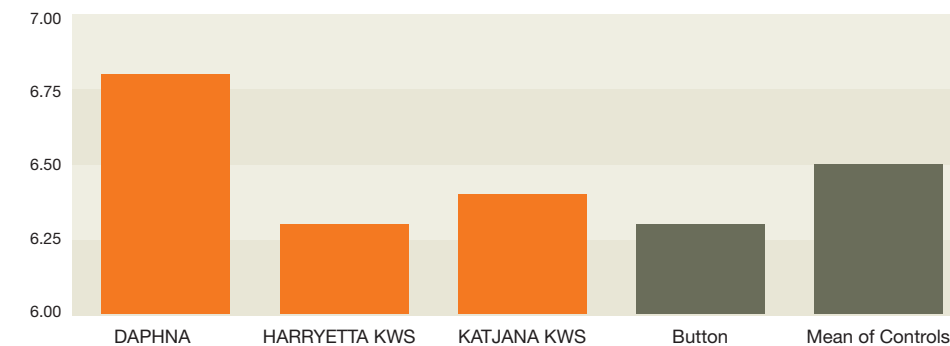
Proven performance across many years

- Popular and proven BCN tolerant variety
- Low bolting
- Good leaf disease scores

For 7 years DAPHNA has delivered excellent yields in both RL trials and most importantly, on farm. The variety that set the benchmark for BCN protection without yield penalty has another strong showing on the 2024 RL.

With low bolters and a good canopy late into the year DAPHNA is a great choice for a long growing season and well suited to all farm situations and locations.

Cercospora scoring (1 = high leaf infection, 9 = very low leaf infection) – BCN segment



Source: BBRO Recommended List of Sugar Beet Varieties 2024 (based on trials from 2020 – 2022)



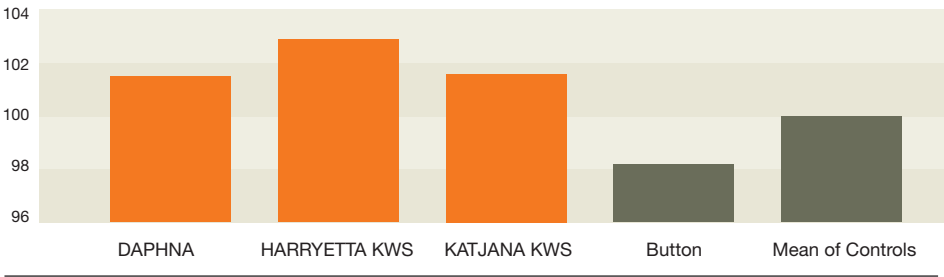
Leading the pack for BCN tolerant varieties

CLASSICAL VARIETIES – BCN

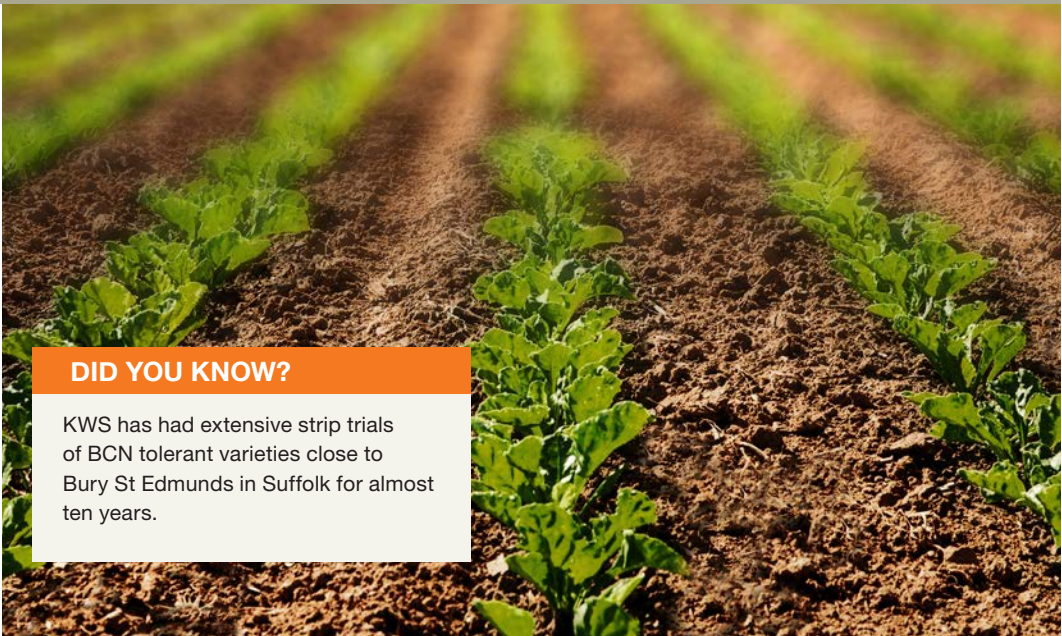
- Second highest yielding variety for 2024
- Highest yielding BCN tolerant variety
- Low bolting

With low bolters in both the normal and early sown windows combining with high yields HARRYETTA KWS will be a popular choice again for farmers in 2024 – whether BCN is an issue on farm or not.

Adjusted tonnes (% of controls) - BCN segment



Source: BBRO Recommended List of Sugar Beet Varieties 2024 (based on trials from 2020 – 2022)



DID YOU KNOW?

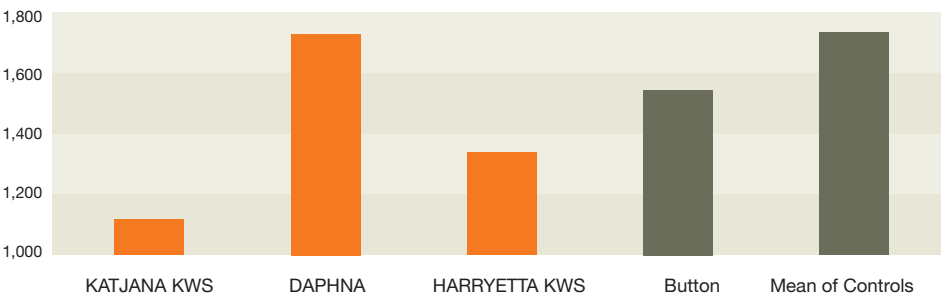
KWS has had extensive strip trials of BCN tolerant varieties close to Bury St Edmunds in Suffolk for almost ten years.



BCN tolerance with high yield and low bolters

- Top 3 yield performer
- BCN tolerant
- Low bolting

Early sown bolters per hectare



Source: BBRO Recommended List of Sugar Beet Varieties 2024 (based on trials from 2020 – 2022)

KATJANA KWS continues to maintain its position on the RL to offer a choice of high yielding varieties in the BCN segment.

Low early sown bolters make KATJANA KWS well suited for drilling before mid-March and will appeal to farmers looking to spread workload and maximise yield – particularly where BCN is a problem.

ANNATINA
KWS



The sweet choice for sugar beet farmers

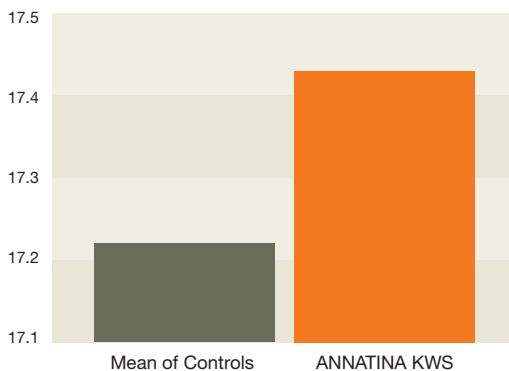
CLASSICAL VARIETIES – RHIZOMANIA

- High yielding
- High sugar content
- Low bolting

One of a small number of varieties yielding above 100% of controls and with a high sugar content of 17.4%, ANNATINA KWS will find favour with farmers needing to haul their beet further to the sugar factory.

With low bolters ANNATINA KWS is a good choice for farmers looking to manage their workload throughout the year.

Sugar content (%)



Source: BBRO Recommended List of Sugar Beet Varieties 2024 (based on trials from 2020 – 2022)

DID YOU KNOW?

KWS has an extensive network of sugar beet trials in the UK. In 2023 we have nearly 11,000 plots across 5 locations.

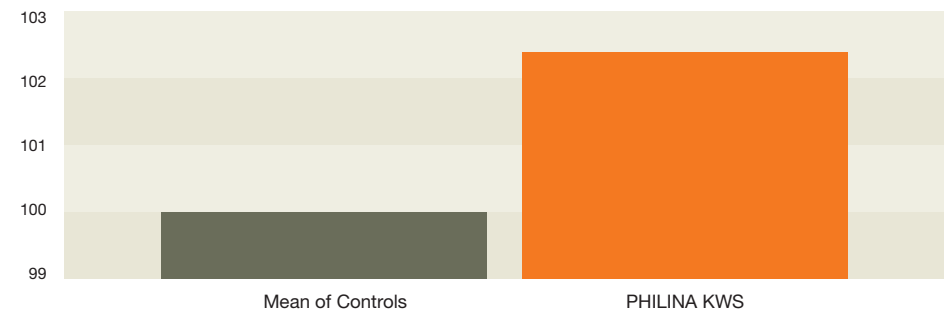
PHILINA
KWS



The best protection for AYPR situations

- Rz2.0 Gene
- Specifically recommended for use against AYPR strains
- Best drilled from mid-March onwards

Pre-gapping establishment (% of controls)



Source: BBRO Recommended List of Sugar Beet Varieties 2024 (based on trials from 2020 – 2022)

Containing the Rz2 gene in addition to the standard Rz1 that all varieties in the Recommended List have, PHILINA KWS offers double rhizomania protection.

PHILINA KWS provides sugar beet farmers the best tool if aggressive rhizomania is affecting your business performance.

KWS Contacts



Ben Bishop
Country Manager - Sugar Beet UK
T 01763 207304
E ben.bishop@kws.com



Martin Brown
AgroServices Manager - Sugar Beet UK
T 01763 207321
E martin.brown@kws.com



Daniel Godsmark
Trials Manager UK
T 01763 207431
E daniel.godsmark@kws.com



Ross Leopold
Station Technician UK
T 01763 207331
E ross.leopold@kws.com

Farm Visits and Advice

John Goodchild
Cambridgeshire, West Suffolk
and Essex
T 07836 525363

Angus Kennedy
(North) Cammbridgeshire,
Bedfordshire, Lincolnshire
T 07976 610838

Jonathan Pilbrow
Norfolk
T 07393 985457

Adrian Freeman
East Suffolk
T 07748 807107

James Kennedy
(North) Cambridgeshire,
Bedfordshire, Lincolnshire
T 07813 662847

Nick Wells
Lincolnshire
T 07768 608897

Steve Mackinder
Norfolk
T 07523 382940

John Emerson
East of England
T 07738 001034



KWS UK Limited
56 Church Street
Thriplow
Royston
Hertfordshire
SG8 7RE
www.kws-uk.com

We're social



@KWSUKLtd



@KWSUKLtd



@kwsukltd



KWS UK Ltd



CONVISO® is a registered trademark of Bayer.