Sugar Beet Guide 2023

The best choice for the UK

SEEDING
THE FUTURE
SINCE 1856

KWS

Content

04 Overview of varieties and resistances
05 Margin over seed cost

06 Virus Yellows Protect
08 **MARUSCHA KWS**

10 CONVISO® SMART
11 Get the power with CONVISO® SMART
12 How to apply CONVISO® ONE correctly
14 The new standard in sugar beet weed control
15 **SMART RIXTA KWS**

16 EPD 2.0 seed treatment
17 BeetSeedService
18 BBRO Recommended List 2023
20 Beet Cyst Nematode
21 **DAPHNA**
22 **HARRYETTA KWS**
23 **KATJANA KWS**
24 myKWS
26 **KORTESSA KWS**
27 **ANNATINA KWS**
28 **EVALOTTA KWS**
29 **PHILINA KWS**
30 Notes
31 Want more information?

Overview of varieties and resistances

Choose the right combination for your needs

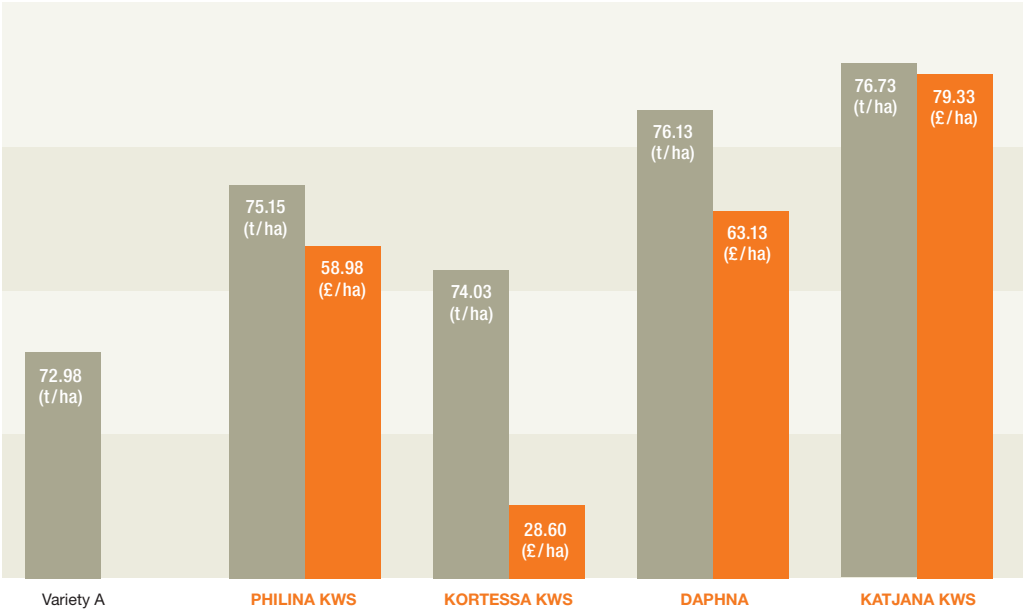
KWS sugar beet seed at a glance

	NEW FOR 2023	Rhizomania Protect	Rhizomania Protect 2.0	Nematode Protect	Virus Yellows Protect	CONVISO® SMART	EPD2.0	Suitable for early drilling
DAPHNA		✓		✓			✓	✓
KORTESSA KWS		✓					✓	✓
HARRYETTA KWS	✓	✓		✓			✓	✓
KATJANA KWS		✓		✓			✓	✓
ANNATINA KWS	✓	✓					✓	✓
EVALOTTA KWS		✓					✓	✓
PHILINA KWS		✓	✓				✓	
MARUSCHA KWS		✓			✓		✓	
SMART RIXTA KWS		✓				✓	✓	

Source: KWS recommendations.

Margin over seed cost

What's the additional yield worth to you?



■ Actual yield ■ Additional margin compared to Variety A

Seed cost Variety A:	£205.43 (£171.98 per unit x 1.2 units/ha)
Seed cost PHILINA KWS and KORTESSA KWS:	£205.18 (£170.98 per unit x 1.2 units/ha)
Seed cost DAPHNA and KATJANA KWS:	£227.35 (£189.46 per unit x 1.2 units/ha)

Assumed beet price: £27.00 per tonne

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

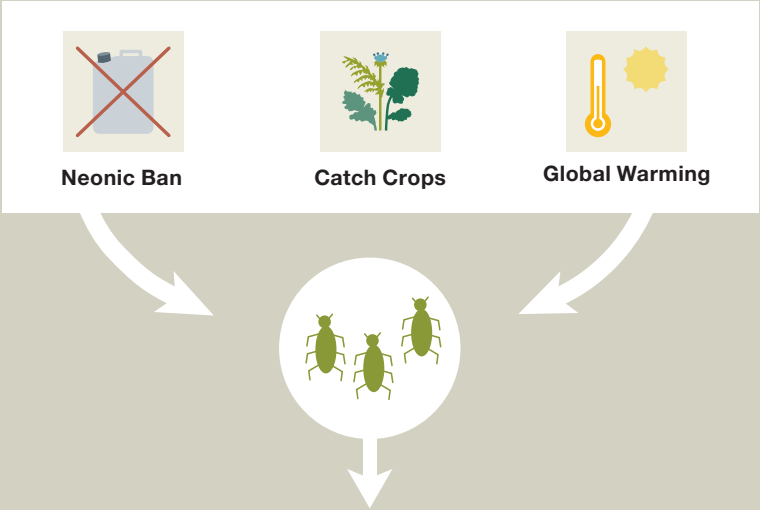
Source: KWS calculations May 2022.

Virus Yellows Protect

The new approach to control yellowing viruses

Reasons why we have to act

With the loss of neonicotinoid sugar beet seed treatment, combined with a wider use of catch crops and global warming, Virus Yellows (VY) presents a serious threat to sugar beet.



- **Less aphid control**
- **Increasing aphid populations**

Virus Yellows causes damages in the field:

The earlier and higher the aphid pressure (especially of Peach Potato Aphid) the higher the risk of virus infection in the field. Virus infection in sugar beet leads to reduced sugar yield.

Virus Yellows Protect

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

Integrated Solutions

Good Practice

- Crop rotation
- Trap crops
- Field hygiene
- Tillage intensity

KWS Breeding

- Virus tolerant varieties
- Pest tolerant varieties

Crop Protection

- Foliar insecticides
- Seed treatment (Chemicals and Biologicals)

Strengthening the sugar beet's own defense with innovative breeding programs will supply the grower with Virus Yellows tolerant varieties – a powerful tool to keep sugar beet competitive:

- KWS has a focused breeding program for Virus Yellows
- The first generation of KWS Virus Yellows tolerant varieties, MARUSCHA KWS, is available to UK sugar beet growers now.

MARUSCHA KWS

- Competitive yields
- Strong tolerance to Beet Mild Yellowing Virus (BMYV)
- Visibly greener canopy

The new approach to controlling Virus Yellows

MARUSCHA KWS has shown excellent tolerance to BMYV in UK trials over the last three years and can offer growers a new tool as part of an integrated approach to managing Virus Yellows. In addition, MARUSCHA KWS also shows a competitive response to Beet Yellowing Virus (BYV).

- Under BMYV infection MARUSCHA KWS shows losses of 4% but still yields over 15t/ha more than the mean of KWS control varieties
- Under BYV infection MARUSCHA KWS can show losses of 37% in yield, however it still yields 10t/ha more than the mean of KWS UK control varieties
- Lower symptom expression - a greener canopy

For best results, MARUSCHA KWS should be drilled from mid-March onwards.

MARUSCHA KWS symptom expression in UK trials

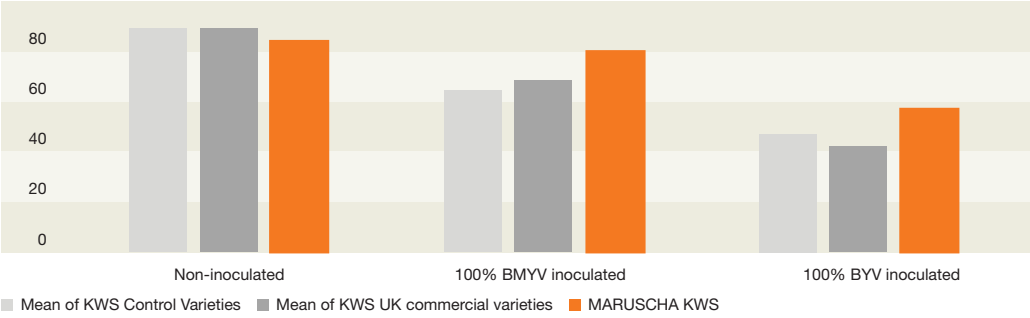
(1-9 rating used for symptom expression: 1 = low symptoms, 9 = high symptoms)

	BMYV 3 year mean	BYV 2 year mean
MARUSCHA KWS	3.7	4.4
Mean of KWS controls	6.2	5.7
Mean of KWS UK commercial varieties	5.8	5.3

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

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

Note: BMYV results are 3 year mean from 2018-20 and BYV is 2019 only so should be treated with reserve



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

CONVISO® SMART

I'VE GOT THE POWER

to save time with
a single application

For further information please scan the QR code.

Get the power with CONVISO® SMART

CONVISO® SMART broadens up the world of weed control in sugar beet growing.

The system consits of two components:

SMART KWS seeds
SMART KWS varieties, bred by KWS, specifically tolerant to CONVISO® ONE

CONVISO® ONE herbicide
CONVISO® ONE herbicide developed by Bayer

Your SMART benefits:

- Best crop safety with SMART varieties
- Efficient weed control with only 1 application
- Strong solution against hard to fight weeds
- More sustainable sugarbeet cultivation

Further information is available on:
www.convisosmart.co.uk or in the **myKWS App**

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).

I'VE GOT THE POWER

Aiming for two to four true leaves of the fat hen

Too small

Correct target size

Too big

Always follow the label recommendations of CONVISO® ONE.

*Country specific recommendations apply

CONVISO® SMART

The new standard in sugar beet weed control

SMART RIXTA KWS

- High yielding herbicide tolerant variety
- Best drilled from mid-March onwards
- For use as part of the CONVISO® SMART weed control system for sugar beet

I'VE GOT THE POWER

SMART KWS seeds

+

CONVISO® ONE

> It's the best crop of sugar beet we have grown in many years, if not ever.
>
> **Alistair Bowring**
> Assarts Farm, Warsop, Nottinghamshire

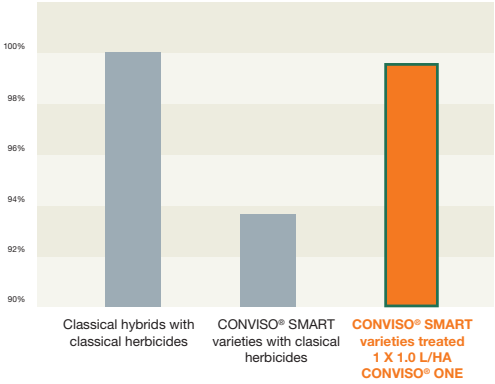
In a changing world of sugar beet weed control with less products, CONVISO® SMART brings back efficient management to your sugar beet.

Reliability
High efficacy weed control in combination with best crop safety.

Simplicity
Broadest weed control spectrum with a single application of the Bayer herbicide CONVISO® ONE.

Best Crop Safety
More independence from the size of sugar beet and weather conditions – just focus your weed control on the key weeds! Profit from vigorous growth and protect your full yield potential.

The yield benefit of using the CONVISO® SMART system rather than classic herbicides



Source: CONVISO® SMART System trials, 2018, 2019, 2020; KWS (plots harvested and analysed by BBRO).

Improved yield with CONVISO® SMART technology

SMART RIXTA KWS offers good yields with the CONVISO® SMART technology. When used with CONVISO® ONE herbicide, SMART RIXTA KWS will deliver yields close to controls.

With below average bolters in the normal sown window, growers can choose SMART RIXTA KWS with confidence. It is recommended to drill CONVISO® SMART varieties from mid-March onwards to limit vernalisation.

SMART RIXTA KWS - for the CONVISO® SMART weed control system

Adjusted tonnes (% of controls)

Source: [1] BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021) 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).

Choose EPD 2.0 seed treatment from KWS

my KWS

Your crop. Your choice. Our technology

EPD 2.0 seed treatment is the result of years of development by KWS, utilising a complete system approach to seed preparation and coating.

The benefits of choosing EPD 2.0 for your sugar beet crop:

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

> KWS EPD 2.0 seed gives us very even emergence with our sugar beet. Doubles and misses are few and far between - which has to be down to the consistent size and shape of the seed.
>
> **Richard Cobbald**, Bartlow Estate, Cambrige

Comparative performance of KWS EPD and EPD 2.0 processed seed

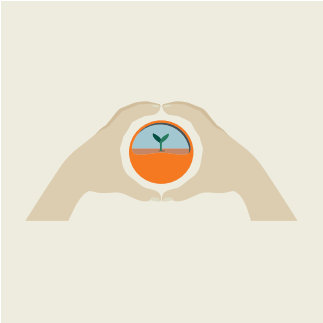
Adjusted yield (t/ha)

Source: KWS UK Seed Technology Trials 2016 – 2018 (conducted by BBRO).

Beet Seed Service – Your partner if you need to re-sow

Register your sugar beet fields in Beet Seed Service and 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.
- Now also available in **myKWS App**.



The steps for using the Beet Seed Service

1. Ensure you have EPD 2.0 treated seed.
2. Register for **myKWS** online.
3. Enter the field details in the Beet Seed Service portal.
4. Only if necessary, you can register a claim for poor establishment, and we will discuss your options.
5. If re-sowing is required KWS shall supply new seed directly and invoice at 50 % of your initial invoice price.

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

Sugar beet varieties for drilling in 2023
Adapted from BBRO recommended list of Sugar Beet Varieties 2023

Rz1 rhizomania varieties		DAPHNA	BTS1140	KORTESSA KWS	BTS1915	NEW HARRYETTA KWS	KATJANA KWS	NEW ANNATINA KWS	BTS3610	WREN	MORGAN	STEWART	TAWNY	EVALOTTA KWS	ADDER	BTS3020	BTS5770	BUTTON	LACEWING	PHILINA KWS	MARUSCHA KWS	BTS SMART 9485	SMART RIXTA KWS
Status: (C) = control variety [1]		R(C)	R(C)	R(C)	PR3	PR1	PR2	PR1	PR1	PR2	PR1	PR1	PR1	PR3	PR1	PR2	PR2	PR1	PR2	PS3(C)	PS1	PS1	PS1
AYPR/BCN as claimed by the Breeder		BCN	–	-	–	BCN	BCN	-	–	–	–	–	–	–	–	–	–	BCN	BCN	AYPR	V[6]	ALS	ALS
CROP YIELDS	**MEAN**																						
Adjusted tonnes % of C=100 % [2]	112.0 t/Ha	101.5	101.1	98.7	107.1	103.5	102.3	102.1	101.6	101.3	101.3	100.7	100.4	100.3	100.3	100.1	99.8	99.2	97.3	100.2	92.1	96.0	92.1
Sugar yield % of C=100 % [2]	17.9 t/Ha	101.5	101.1	98.7	107.1	103.5	102.3	102.1	101.6	101.3	101.3	100.7	100.4	100.3	100.3	100.1	99.8	99.2	97.3	100.2	92.1	96.0	92.1
Root yield % of C=100 % [2]	104.3 t/Ha	101.8	100.8	98.8	107.1	104.4	102.1	100.7	100.9	103.7	101.0	99.7	102.0	99.5	103.6	98.5	97.7	100.7	96.5	101.1	90.5	97.8	91.6
Sugar content %	17.1 %	17.1	17.2	17.1	17.1	17.0	17.1	17.4	17.3	16.7	17.2	17.3	16.9	17.3	16.6	17.4	17.5	16.9	17.3	17.0	17.4	16.8	17.2
BOLTERS per 100,000 plants/ha	**MEAN**																						
"X" Unsuitable for sowing BEFORE Mid March		–	–	–	X	–	–	–	-	-	X	-	X	–	X	–	–	–	–	X	X	–	–
Early sowing, before 5 March [3]	3,335 /Ha	3,416	3,864	3,064	6,925	2,342	2,155	4,715	3,498	3,989	5,339	2,917	5,368	4,224	5,950	1,388	1,864	1,793	2,090	6,228	7,241	2,327	4,358
Normal sowing	38 /Ha	15	107	15	37	15	0	0	0	65	34	15	15	46	15	21	15	0	34	87	75	0	37
PRE-GAPPING ESTABLISHMENT [4]																							
Control	100 %	99.1	98.5	98.7	102.4	98.3	100.4	95.7	101.3	100.4	100.4	99.2	102.6	100.8	101.1	101.2	101.3	103.0	101.5	103.8	97.4	97.3	101.8
DISEASE 1 = high; 9 = very low (leaf infection) [5]																							
Rust	5.0	5.5	5.9	7.7	7.2	5.0	4.3	5.1	(5.9)	(5.5)	4.0	3.7	5.7	2.4	6.2	7.6	8.2	3.9	4.4	2.5	5.9	4.9	4.6
Powdery mildew	4.7	5.4	4.5	5.7	4.4	5.3	5.3	4.5	5.2	5.2	5.4	5.0	5.6	4.6	5.2	4.8	5.0	5.0	4.2	4.6	2.8	5.9	4.8
Cercospora	6.9	7.1	6.1	7.3	6.6	6.3	6.6	6.0	(6.6)	(6.6)	6.6	6.1	7.4	5.4	6.5	7.0	7.1	6.9	6.8	7.0	8.0	6.0	6.4

Mean of control varieties includes ADVENA KWS which is no longer listed and PHILINA KWS which submitted Breeders seed in 2021.
[1] Newly listed varieties (PR1/PS1) have results from three years using approximately 2 kgs breeders' seed.
[2] Yields based on an average plant population of 100,900 plants/ha in these trials. Differences in adjusted tonnes of less than 2.5% should be treated with reserve.
[3] The ratings from normal sowings are applicable for sowing after mid-March in most seasons.
[4] Differences in establishment of less than 3.3% should be treated with reserve.
[5] Cercospora ratings should be treated with caution.
[6] Breeders claims are for tolerance to some of the yellowing viruses

Source: Taken from BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021).
Full data set can be found at **www.bbro.co.uk**

DAPHNA

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

Beet Cyst Nematode - A small pest with a huge impact

What are Beet Cyst Nematodes (BCN)?

BCNs are 1mm long eelworms that invade and feed from the root cells. Each cyst holds up to 200 eggs and larvae. The nematodes infest the root system of the host plant and severely affect plant metabolism.

Symptoms

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

The clear symptom is the pinhead-sized, white females or brown cysts that are temporarily visible to the naked eye on the lateral roots.

!

Effects: 30-60% yield losses

The first 10% of yields losses mostly show no visible symptoms.

What to do against nematodes?

1

Choose a tolerant variety

There are no yield penalties for BCN tolerant varieties from KWS.

2

Use a wide crop rotation

BCN infestation decreaes by approx. -40% per year in non-host plants.

3

Observation & sampling

Do regular soil and crop checks for BCN infestations and make use of annual soil samplings.

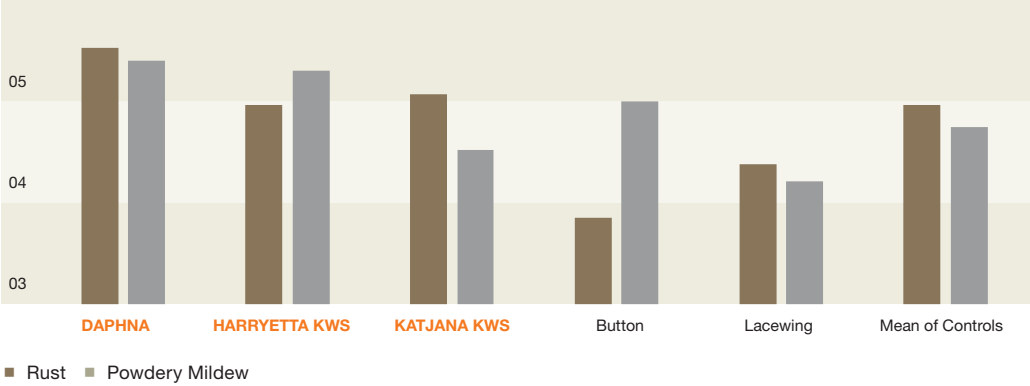
BCN tolerance through a long growing season

Another strong showing on the 2023 RL from DAPHNA continues to prove that there is no need to compromise on yield to protect against BCN.

With low bolters in both the early and normal sowing windows and good disease resistance DAPHNA is a great choice for a long growing season and well suited to all farm situations and locations.

DAPHNA offers a healthy canopy in the BCN segment

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



Source: BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021).

HARRYETTA KWS

- Second highest yielding variety for 2023
- Highest yielding BCN tolerant variety
- Low bolting

NEW

KATJANA KWS

- Top 3 yield performance
- BCN tolerant
- Low bolting

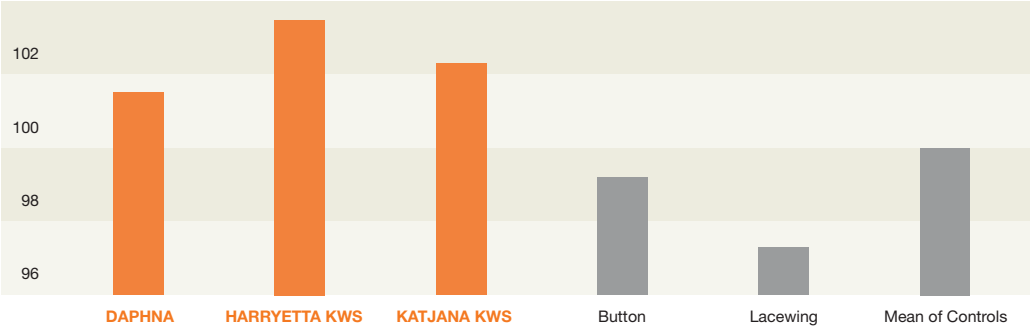
Leading the pack for BCN tolerant varieties

New for 2023 HARRYETTA KWS continues KWS' tradition of delivering BCN tolerance without any yield penalty.

With low bolters in both the early and normal sowing windows making it suitable for drilling before mid-March HARRYETTA KWS is expected to be a popular choice – whether BCN is a problem or not.

HARRYETTA KWS leads the way in the BCN segment

Adjusted yield (% of control varieties)



Source: BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021).

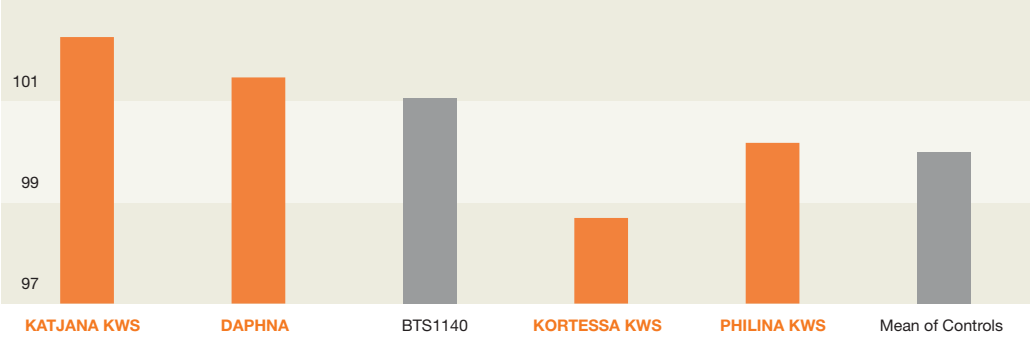
BCN tolerance combined with high yields and low bolters

KATJANA KWS maintains its position in the top 3 of the 2023 RL to offer a choice of high yielding varieties in the BCN segment.

Very low bolters in the normal sowing window and suitable for drilling before mid-March KATJANA KWS will appeal to growers looking to maximise yields – particularly where BCN is a problem.

KATJANA KWS outperforms all control varieties

Adjusted yield (% of control varieties)



Source: BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021).

Sign up to **myKWS** today…

- Free online tools to help you get the best from your farm
- Technical e-newsletters and notifications based on your own personal crop preferences
- Maize and Beet Seed Services – financial help towards the cost of resowing (subject to terms & conditions)
- Enhanced daily weather data

CROP TYPE

Cereals | Maize | Beet

TOOL	DESCRIPTION	CROP TYPE	STAGE
	Seed Rate Calculator Calculate seed rates, row spacing and seed volume requirements.		Seed Selection
	Variety Comparison Tool Neutrally compare KWS cereal varieties against others on the AHDB Recommended List to help you select the right variety for your farming situation.		Seed Selection
	Beet Seed Service* Receive digital field-specific advice and financial support if you require seed for re-sowing on all KWS EPD 2.0 sugar beet varieties.		Preparation
	Maize Seed Service* Financial support towards the cost of re-sowing any KWS Maize seed, treated with Initio Bird Protect suffering damage from bird predation or frost.		Preparation

TOOL	DESCRIPTION	CROP TYPE	STAGE
	Variable Seed Rate* Adjust and define the ideal seed rates for cereals and maize based on specific field conditions, using satellite images and breeder knowledge.		Preparation
	Soil Temperature Provides maize growers with a clear indication of soil temperature, to help select the right sowing window to ensure strong germination and emergence.		Preparation
conviso SMART	**CONVISO® SMART Tool** Get advice on the stewardship of CONVISO® SMART with the digital grower manual or by using the decision support tool to help correct timing for the application of CONVISO® ONE.		Mid-Season
	Field Vitality Checker* Track crop development throughout the season. Highlight areas of disease, compaction and other plant stress factors, such as blackgrass, using satellite imagery to pick out any differences within the field and help you plan accordingly.		Mid-Season
	Damage Finder Get a comprehensive overview of the most important damage and disease images throughout the season.		Mid-Season
	Field Scout Create important geo-based notes for site specific observations and reminders on your fields.		Mid-Season
	Heat Unit Tool Allows growers to check predicted harvest date based on FAO and average heat units		Harvest

** field registration required for this tool*

KORTESSA KWS

- Popular choice and proven performance on farm
- Good adjusted yield
- Excellent leaf disease package

ANNATINA KWS

- High yielding
- High sugar content
- Low bolting

NEW

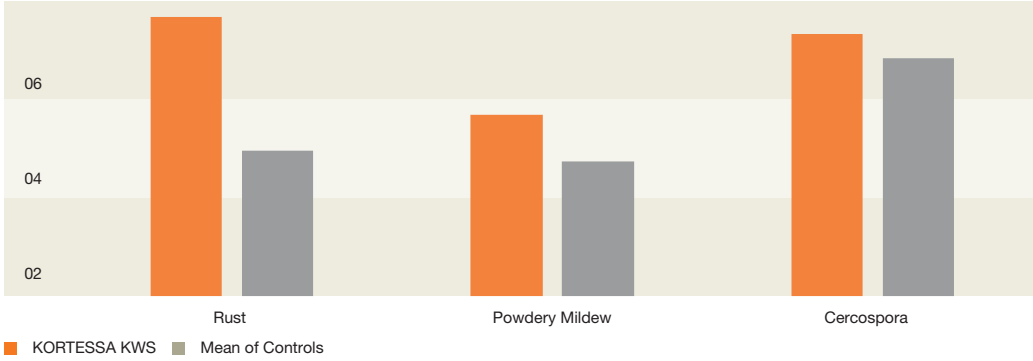
Proven yield and leaf disease resistance

Highly regarded by growers and with an incredibly clean canopy KORTESSA KWS will again be a popular choice for many in 2023.

Suitable for drilling before mid-March in combination with an RL high score of 7.7 for rust make KORTESSA KWS the proven choice to utilise a long growing season. Add in excellent scores for cercospora and powdery mildew its clear to see why KORTESSA KWS is a great option.

A healthy canopy with KORTESSA KWS

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



Source: BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021).

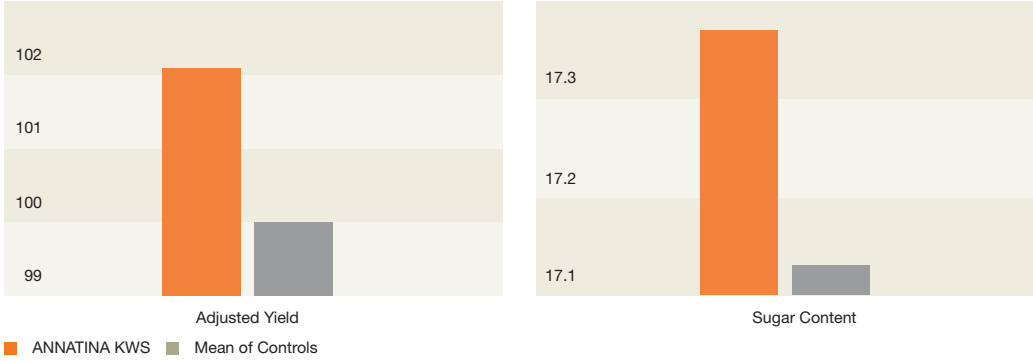
A sweet addition to the 2023 RL

New for 2023 ANNATINA KWS sits comfortably in the top 4 of the 2023 RL.

A high sugar content will favour growers needing to haul their beet further to the factory which coupled with very low bolters in the normal sowing window make ANNATINA KWS a good choice for growers looking to manage their workload through the year.

ANNATINA KWS for high sugar content and high yield

Adjusted yield (% of control varieties) and sugar content (%)



Source: BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021).

EVALOTTA KWS

- High yield rhizomania resistant variety
- Good establishment score
- Low bolting

PHILINA KWS

- Rz2.0 provides the best protection against rhizomania
- Specifically recommended for use against AYPR strains
- Best drilled from mid-March onwards

Good establishment for solid yields

EVALOTTA KWS delivers yields in excess of controls for a third year running.

Excellent establishment and sugar content make EVALOTTA KWS a sound choice for growers looking to harvest a high yielding crop early in the season – particularly where beet has to travel further to factory.

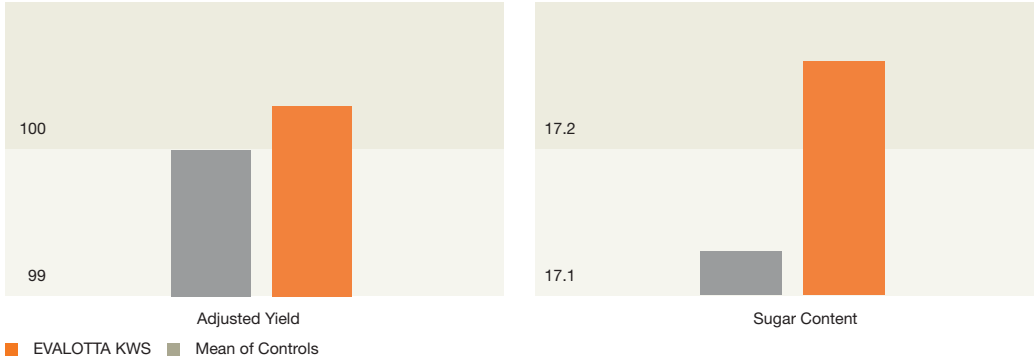
The best choice for AYPR situations

Containing the Rz2 gene in addition to the standard Rz1 all other varieties in the recommended list have, PHILINA KWS has double rhizomania protection and provides growers the only tool to beat the problem.

It is the variety to choose is aggressive rhizomania is affecting your business performance.

High sugar content leading to good yields with EVALOTTA KWS

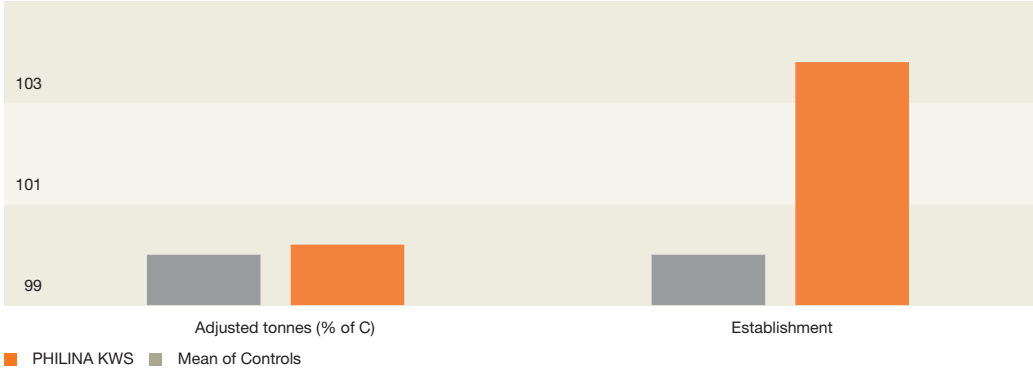
Adjusted yield (% of control varieties) and sugar content (%)



Source: BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021).

Excellent establishment and AYPR resistance with PHILINA KWS

Pre-gapping establishment (% of control varieties)



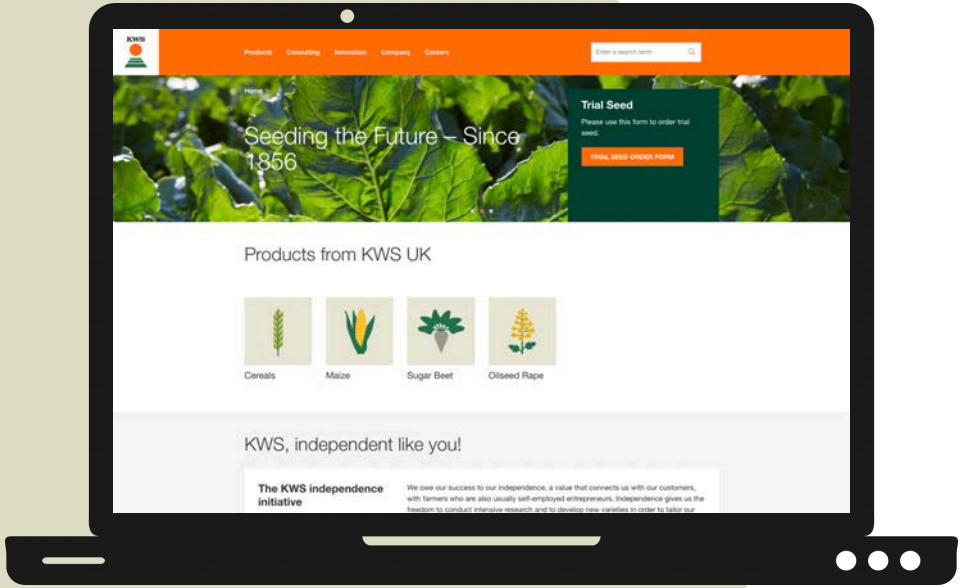
Source: BBRO recommended list of Sugar Beet varieties 2023 (Based on trials from 2019 – 2021).

Notes

Want more information?

Visit our website for any additional information you may require on any of our varieties or crops.

The site is easy to navigate, mobile friendly, nice to look at AND jam packed with content!



www.kws-uk.com

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