

Recommended list of sugar beet varieties 2020 (Based on trials from 2016-2018)

Rz1 rhizomania varieties				BTS 860	Sabatina KWS	Cantona KWS	Cayman	Hornet	Firefly	Haydn	Daphna	BTS I 140	Kortessa KWS	Advena KWS	Lightning	BTS4 100	Vixen	BTS 3325	Conger	Puffin	Degas	Flixtor	Gauguin	Philina KWS	Smart Janninka KWS
Status: (C) = control variety ¹	Control Value			R	R(C)	R	R(C)	R(C)	R	R	PR3	PR2	PR2	PR1	PR1	PR1	PR1	PR3	PR1	PR1	PR3	PR2	PR2	PS2	PS1
AYPR/BCN/ALS (per Breeder Claim)				-	-	BCN	-	-	-	-	BCN	-	-	-	-	-	-	-	-	-	-	BCN	BCN	AYPR	ALS
CROP YIELDS	MEAN																								
Adj tonnes % of C=100% ²	112.0 t/ha	100		102.1	102.0	101.8	99.4	99.3	97.9	97.9	105.4	104.9	104.7	104.0	102.6	101.8	101.6	101.5	101.3	100.9	100.1	99.1	99.0	102.7	90.1
Sugar yield % of C=100% ²	17.1 t/ha			101.9	102.1	101.5	99.3	99.1	97.8	97.8	105.6	104.9	104.8	103.9	103.0	101.5	101.6	101.3	101.4	100.9	99.9	99.7	99.1	102.8	90.2
Root yield % of C=100% ²	95.1 t/ha			100.5	102.8	100.0	99.0	97.9	97.6	97.3	106.6	104.8	105.4	102.4	105.2	98.8	102.1	99.8	101.7	101.1	98.6	102.8	99.8	102.9	90.1
Sugar content %	17.9%			18.2	17.8	18.2	18.0	18.2	18.0	18.1	17.8	18.0	17.9	18.2	17.6	18.4	17.9	18.2	17.9	17.9	18.2	17.4	17.8	17.9	18.0
BOLTERS per 100,000 plants/ha	MEAN	95% lsd	99.9% lsd																						
"X" Unsuitable for sowing BEFORE Mid March				X	X	X	-	-	-	-	-	X	-	-	X	-	-	-	-	-	X	-	-	X	X
Early sown, on or before 5 March ³	2,141/ha	3,365	4,459	3,831	3,406	4,000	1,443	3,064	1,891	1,667	2,882	5,138	2,573	2,475	4,495	2,062	1,692	2,606	2,776	2,048	3,688	3,325	1,455	9,023	3,375
Normal sowing	16/ha	64	98	26	23	57	19	26	16	30	84	30	0	0	9	0	0	19	0	0	40	14	14	54	0
PRE-GAPPING ESTABLISHMENT ⁴																									
Control	100%			101.4	98.6	99.5	100.3	101.5	100.3	99.9	99.0	99.7	99.5	96.7	100.6	97.8	98.7	97.9	96.3	100.4	100.3	99.2	98.3	99.8	96.2
DISEASE																									
1 = high; 9 = very low (leaf infection) ⁵																									
Rust	5.4			5.6	5.8	5.9	5.0	6.3	3.2	4.8	5.7	(4.7)	(7.9)	(5.0)	(7.1)	(4.9)	(7.6)	5.3	(5.8)	(3.5)	5.2	2.2	(3.4)	(4.1)	(4.8)
RL SYSTEM																									
Year first listed				2016	2015	2016	2011	2014	2016	2013	2017	2018	2018	2019	2019	2019	2019	2017	2019	2019	2017	2016	2018	2018	2019
BREEDER/UK CONTACT ⁶																									
Breeder				BTS	KWS	KWS	SV	SV	SV	STR	KWS	BTS	KWS	KWS	SV	BTS	SV	BTS	SV	SV	STR	MH	STR	KWS	KWS
UK Agent				LG	KWS	KWS	SV	SV	SV	STR	KWS	LG	KWS	KWS	SV	LG	SV	LG	SV	SV	STR	MH	STR	KWS	KWS

Mean of control values include KWS Salamanca and Aurora which are no longer listed.

- Newly listed varieties (PR1/PS1) have results from three years using approximately 2 kg breeders' seed. Thereafter commercial seed should be used in RL trials. (See supplementary provenance table).
 - Yields based on an average plant population of 106,000 plants/ha in these trials. Differences in yields of less than 4% should be treated with reserve.
 - The bolters from normal sowings are applicable for sowing after mid-March in most seasons.
 - Differences of 4% or less in the variety establishment scores are not statistically significant.
 - Observations taken from inoculated trials not taken to yield.
 - BTS = Betaseed, KWS = KWS UK Ltd, LG = Limagrain UK Ltd, MH = MariboHillesthög, STR = Strube Sugar Beet UK Ltd, SV = SESVanderHave UK Ltd
- () - Limited data.

Rz1 rhizomania varieties 3-year data					BTS 860	Sabatina KWS	Cantona KWS	Cayman	Hornet	Firefly	Haydn	Daphna	BTS1140	Kortessa KWS	Advena KWS	Lightning	BTS4100	Vixen	BTS 3325	Conger	Puffin	Degas	Flixtor	Gauguin	Philina KWS	Smart Janninka KWS		
Status: (C) = control variety					R	R(C)	R	R(C)	R(C)	R	R	PR3	PR2	PR2	PR1	PR1	PR1	PR1	PR3	PR1	PR1	PR3	PR2	PR2	PS2	PS1		
AYPR/BCN (per Breeder Claim)					-	-	BCN	-	-	-	-	BCN	-	-	-	-	-	-	-	-	-	-	BCN	BCN	AYPR	ALS		
ADJUSTED TONNES (Gapped Trials) t/ha			Control Value																									
% Mean of (C)	Mean	112.0	100		102.1	102.0	101.8	99.4	99.3	97.9	97.9	105.4	104.9	104.7	104.0	102.6	101.8	101.6	101.5	101.3	100.9	100.1	99.1	99.0	102.7	90.1		
	2018	103.6			104.1	101.1	102.3	100.7	101.4	97.6	101.0	104.7	101.8	104.2	106.3	104.7	102.7	102.7	102.4	101.1	99.4	100.5	98.1	97.9	101.9	92.3		
	2017	126.2			100.7	103.8	101.8	97.8	97.4	96.9	96.0	106.9	106.5	107.3	102.9	102.5	101.8	101.5	100.8	101.8	101.5	98.7	99.2	98.3	106.5	89.4		
	2016	106.9			101.6	101.1	101.2	99.7	99.3	99.1	97.0	104.7	106.3	102.6	103.1	100.9	101.0	100.6	101.4	100.9	101.7	101.1	100.0	100.9	99.7	88.8		
SUGAR YIELD (Gapped Trials)																												
% Mean of (C)	Mean	17.1			101.9	102.1	101.5	99.3	99.1	97.8	97.8	105.6	104.9	104.8	103.9	103.0	101.5	101.6	101.3	101.4	100.9	99.9	99.7	99.1	102.8	90.2		
	2018	15.9			103.7	101.2	101.8	100.6	101.2	97.2	100.7	104.6	101.9	104.3	105.9	104.9	102.2	102.6	102.2	101.1	99.3	100.3	98.9	97.9	101.7	92.4		
	2017	19.2			100.5	104.0	101.7	97.8	97.3	96.9	96.0	107.1	106.4	107.3	102.8	103.0	101.5	101.5	100.6	101.9	101.4	98.6	99.5	98.4	106.5	89.4		
	2016	16.3			101.6	101.1	101.1	99.5	99.0	99.1	96.8	105.0	106.3	102.8	103.1	101.2	100.7	100.9	101.3	101.1	101.8	100.8	100.8	101.0	100.1	88.9		
ROOT YIELD (Gapped Trials)																												
% Mean of (C)	Mean	95.1			100.5	102.8	100.0	99.0	97.9	97.6	97.3	106.6	104.8	105.4	102.4	105.2	98.8	102.1	99.8	101.7	101.1	98.6	102.8	99.8	102.9	90.1		
	2018	89.6			101.3	101.6	99.0	100.5	100.7	95.8	99.5	104.6	101.5	104.5	103.4	106.3	98.9	102.5	100.3	100.7	99.9	99.3	102.2	98.2	101.2	92.3		
	2017	104.5			99.2	104.9	100.6	97.5	95.8	97.1	96.4	108.1	106.3	107.7	100.6	106.3	98.5	101.8	98.7	102.2	100.5	97.1	101.5	99.3	106.6	89.2		
	2016	92.2			101.1	101.9	100.3	99.0	97.4	99.6	96.0	106.8	106.3	104.1	103.1	103.0	99.1	102.2	100.3	102.0	102.7	99.4	104.7	101.8	100.9	89.1		
SUGAR CONTENT (Gapped Trials) %																												
Sugar %	Mean	17.9			18.2	17.8	18.2	18.0	18.2	18.0	18.1	17.8	18.0	17.9	18.2	17.6	18.4	17.9	18.2	17.9	17.9	18.2	17.4	17.8	17.9	18.0		
	2018	17.8			18.2	17.8	18.3	17.8	17.9	18.0	18.0	17.8	17.9	17.8	18.2	17.6	18.4	17.8	18.2	17.8	17.7	17.9	17.2	17.7	17.9	17.8		
	2017	18.4			18.7	18.2	18.6	18.4	18.7	18.4	18.3	18.2	18.4	18.3	18.8	17.8	19.0	18.3	18.7	18.3	18.6	18.6	18.0	18.2	18.4	18.4		
	2016	17.7			17.8	17.6	17.8	17.8	18.0	17.6	17.9	17.4	17.7	17.5	17.7	17.4	18.0	17.5	17.9	17.6	17.6	18.0	17.1	17.6	17.5	17.7		
EARLY SOWN BOLTERS Mean of C			95% lsd	99.9% lsd																								
"X" Unsuitable for sowing BEFORE Mid March					X	X	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	X	-	-	X	X		
Bolters per 100,000 plants/ha. Sown on or before 5th March	Mean	2,141	3,365	4,459	3,831	3,406	4,000	1,443	3,064	1,891	1,667	2,882	5,138	2,573	2,475	4,495	2,062	1,692	2,606	2,776	2,048	3,688	3,325	1,455	9,023	3,375		
	2018	754	1,636	2,477	1,594	1,193	1,582	538	950	1,089	361	832	1,410	718	1,350	1,065	914	472	884	901	919	1,350	1,871	710	3,315	1,570		
	2017	1,642	3,111	4,551	3,093	2,698	2,793	879	1,917	742	1,410	3,009	5,124	1,339	1,748	3,955	1,344	1,061	2,083	923	892	2,802	2,251	172	8,247	1,716		
	2016	6,780	10,508	14,012	11,388	11,560	14,382	4,834	13,622	6,834	5,776	8,226	17,880	13,322	6,379	19,184	6,413	6,691	8,506	18,320	8,397	12,836	8,977	8,183	29,409	13,622		
NORMAL SOWN BOLTERS Mean of C			95% lsd	99.9% lsd																								
Bolters per 100,000 plants/ha	Mean	16	64	98	26	23	57	19	26	16	30	84	30	0	0	9	0	0	19	0	0	40	14	14	54	0		
	2018	12	67	106	26	0	0	0	35	28	0	0	57	0	0	0	0	0	30	0	0	30	0	0	0	0		
	2017	19	104	166	72	67	30	0	33	0	99	33	0	0	0	0	0	0	0	0	0	130	0	59	33	0		
	2016	23	107	167	0	19	140	52	21	21	21	213	38	0	0	28	0	0	28	0	0	0	38	0	132	0		
PRE-GAPPING Mean of C																												
Plant population - % mean of (C) . Seed sown at 6 or 9cm spacing	Mean	200			101.4	98.6	99.5	100.3	101.5	100.3	99.9	99.0	99.7	99.5	96.7	100.6	97.8	98.7	97.9	96.3	100.4	100.3	99.2	98.3	99.8	96.2		
	2018	219			98.3	98.3	98.2	99.0	102.5	100.4	100.4	96.6	98.8	100.1	97.1	101.9	96.5	101.0	98.0	96.8	98.6	99.2	96.4	98.9	101.3	94.9		
	2017	186			100.6	100.5	101.1	99.6	103.9	100.1	100.5	99.8	101.3	97.3	97.7	101.4	99.6	99.0	96.5	97.6	102.1	101.0	100.7	98.4	98.2	97.1		
	2016	194			105.2	97.2	99.5	102.2	98.4	100.3	98.9	100.7	99.2	100.7	95.4	98.4	97.7	96.0	98.9	94.5	100.9	100.8	101.0	97.5	99.5	96.9		
RUST Mean of C																												
% leaf infection. Natural & inoculated trials (means re-transformed)	Mean	12			11	11	10	14	9	24	15	11	15	5	14	7	14	6	13	11	22	13	33	23	18	15		
	2018	18			23	24	20	11	15	33	9	23	27	13	22	12	23	10	43	17	36	24	39	40	21	24		
	2017	18			16	8	14	29	15	31	41	16	19	5	-	-	-	-	14	-	-	14	58	28	35	-		
	2016	7			4	7	4	8	3	14	8	3	-	-	-	-	-	-	3	-	-	6	15	-	-	-		

Data in bold from commercial seed.

Provenance of sugar beet 2016 -2018

SEED PROVENANCE			Sown 2016		Sown 2017		Sown 2018	
Variety	STATUS (C) = control variety	"AYPR/BCN/ALS as claimed by the Breeder"	2017 RL rating	Provenance	2018 RL rating	Provenance	2019 RL rating	Provenance
BTS 860	R	-	PR1	Commercial bulk	PR2	Commercial bulk	PR3	Commercial bulk
Sabatina KWS	R(C)	-	PR2	Commercial bulk	PR3	Commercial bulk	R (C)	Commercial bulk
Cantona KWS	R	BCN	PS1	Commercial bulk	PR2	Commercial bulk	PR3	Commercial bulk
Cayman	R(C)	-	R (C)	Commercial bulk	R (C)	Commercial bulk	R (C)	Commercial bulk
Hornet	R(C)	-	PR3 (C)	Commercial bulk	R (C)	Commercial bulk	R (C)	Commercial bulk
Haydn	R	-	R (C)	Commercial bulk	R (C)	Commercial bulk	R	Commercial bulk
Firefly	R	-	PR1	Commercial bulk	PR2	Commercial bulk	PR3	Commercial bulk
Daphna	PR3	BCN	Year 3	Breeder's seed	PR1	Commercial bulk	PR2	Commercial bulk
BTS1140	PR2	-	Year 2	Breeder's seed	Year 3	Breeder's seed	PR1	Commercial bulk
Kortessa KWS	PR2	-	Year 2	Breeder's seed	Year 3	Breeder's seed	PR1	Commercial bulk
Advena KWS	PR1	-	Year 1	Breeder's seed	Year 2	Breeder's seed	Year 3	Breeder's seed
Lightning	PR1	-	Year 1	Breeder's seed	Year 2	Breeder's seed	Year 3	Breeder's seed
BTS4100	PR1	-	Year 1	Breeder's seed	Year 2	Breeder's seed	Year 3	Breeder's seed
Vixen	PR1	-	Year 1	Breeder's seed	Year 2	Breeder's seed	Year 3	Breeder's seed
BTS 3325	PR3	-	Year 3	Breeder's seed	PR1	Commercial bulk	PR2	Commercial bulk
Conger	PR1	-	Year 1	Breeder's seed	Year 2	Breeder's seed	Year 3	Breeder's seed
Puffin	PR1	-	Year 1	Breeder's seed	Year 2	Breeder's seed	Year 3	Breeder's seed
Degas	PR3	-	Year 3	Breeder's seed	PR1	Commercial bulk	PR2	Commercial bulk
Flixter	PR2	BCN	PS1	Breeder's seed	PR2	Breeder's seed	PR1	Commercial bulk
Gauguin	PR2	BCN	Year 2	Breeder's seed	Year 3	Breeder's seed	PR1	Commercial bulk
Philina KWS	PS2	AYPR	Year 2	Breeder's seed	Year 3	Breeder's seed	PS1	Commercial bulk
Smart Janninka KWS	PS1	ALS	Year 1	Breeder's seed	Year 2	Breeder's seed	Year 3	Breeder's seed

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Supplementary data for the sugar beet RL varieties for 2020

BOLTING EARLY SOWING (sown on or before 5th March)			
Year	Site	Sowing date	Number of Vernalisation days
2018	Beal	22-Feb	44.0
2018	Beal	09-Mar #	30.0
2018	Saxham	17-Feb	43.0
2018	Saxham	23-Feb	37.8
2018	Cranwell	23-Feb	37.1
2018	Cranwell	05-Mar	27.1
2018	Mean		36.5
2017	Beal	21-Feb	31.2
2017	Beal	02-Mar	25.7
2017	Saxham	17-Feb	24.2
2017	Saxham	24-Feb	22.5
2017	Cranwell	20-Feb	27.9
2017	Cranwell	27-Feb	25.8
2017	Mean		26.2
2016	Beal	25-Feb	41.1
2016	Beal	03-Mar	35.0
2016	Brooms Barn	25-Feb	40.3
2016	Cranwell	19-Feb	49.5
2016	Cranwell	26-Feb	45.0
2016	Mean		42.2

- project board agreed to include due to difficult winter conditions.



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