Animal &
Plant Health
Agency

United Kingdom Variety List Trials: Trial Procedures for Official Examination of Value for Cultivation and Use (VCU) Harvest 2025

Sugar Beet

Appendices

May 2024

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Changes

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Appendix 1 – Approved Trial Organisers/ Operators for Sugar Beet

Activity	Organisers / Operators Responsible
Trials Organiser	BSPB
Trial Design and Data Handling Operator	NIAB
Growing Trial Operators	See Appendix 4
Seed Handling Operator	See Appendix 4
Seed Treatment Operator	Applicants
DUS Operator	NIAB
Trial inspection Operator	NIAB
Technical Validation Operator	NIAB
Harvest Trial Operator	See Appendix 4
Quality Testing Operator	See Appendix 4
Data Review and Standard Setting Operator	NIAB

Appendix 2 – Seed Treatment Products for Use on VL Trials – to be advised

The following procedure is carried out to pellet and treat sugar beet seed for trials

Seed shall be treated with the following PPPs at the registered rates applicable and in accordance with the manufacturer's label recommendation.

a) **Tachigaren 70 WP** To be applied as a surface coating to the pellet at **20 g product per unit** / 100,000 seeds
    i. hymexazol total 20g commercial product = **14g ai/unit**; FRAC 32
    ii. The hymexazol used shall be MAPP no: 17977

b) **Force ST** To be applied as a surface coating to the pellet at **50ml product per unit** / 100,000 seeds
    i. 200g tefluthrin per litre = **10g ai/unit;** Group 3A IRAC
    ii. The Force SB used shall be MAPP no: 19042

Appendix 3 – Seed Delivery Deadline Dates

VCU seed must be delivered to the Seed Handling Operator by: **1 February**

Appendix 4 – VCU Growing Trial Operators and Trial Locations for Sugar Beet

Growing Trial Operators/Seed Handling Operators

Growing Trial Operator	Seed Handling Operator (If not Trial Operator)	Location of Trial	Harvest Operator	Quality Test Operator
NIAB	Trial Operator	North Walsham	BBRO	British Sugar
BBRO	NIAB	Rougham	BBRO	British Sugar
SESVANDERHAVE	NIAB	Caythorpe	SESVANDERHAVE	SESVANDERHAVE
SESVANDERHAVE	NIAB	Dawsmere	SESVANDERHAVE	SESVANDERHAVE
SESVANDERHAVE	NIAB	Heacham	SESVANDERHAVE	SESVANDERHAVE
KWS	NIAB	Swaffham Prior	KWS	KWS

Appendix 5 – Control Varieties for VCU Assessments for Sugar Beet

The Control varieties are:

- Daphna
- BTS1915
- Katjana KWS
- Harryetta KWS
- Annatina KWS

Appendix 6 – Fungicide Programme for Sugar Beet

Fungicides should be applied at or before the level of infection in the most susceptible variety reaches 5% in the older leaves. The programme should follow best local practice and a second application if necessary.

Appendix 7 – Dates by which Records should be sent to the Trial Design and Data Handling Operator

Record	Latest date of receipt
Site data part 1 (including site sketch)	Within 5 days of drilling trial
Site data part 2 plus diary	Within 5 days of harvesting the trial
Harvest date	Within 2 days of harvest
Confirmation of Trial Layout	Within 5 days of drilling the trial
Plot records	Within 5 days of record being taken
Harvest records	Within 5 days of harvesting the trial

Appendix 8 – % Assessment Keys for Sugar Beet Diseases

Leaf diseases

1. Examine leaves in 3 areas of each plot.

2. Include all necrosis and chlorosis attributable to disease to be assessed.

3. Estimate % infection using the description below, interpolating values if necessary.

4. Record the average % infection from the 3 areas.

Infection Disease Severity Description

Code	Description of severity
0	No infection observed
0.1	Older leaves with a trace of infection, other leaves uninfected.
1	Older leaves with up to 10% infection, other leaves largely uninfected.
5	Older leaves with up to 25% infection, middle aged leaves with a trace of infection.
10	Older and middle-aged leaves with up to 25% infection, young leaves largely uninfected.
25	Leaves of all ages appear 50% infected 50% green on average
50	Leaves of all ages appear more infected than green on average
75	Very little green tissues left.
100	No green tissue left

Appendix 9 – Growth Stage Key of Beet

Beet Meier et al., 1993

Phenological growth stages and BBCH-identification keys of beet (Beta vulgaris L. ssp. vulgaris)

Code Description

Principal growth stage 0: Germination
00 Dry seed
01 Beginning of imbibition: seeds begin to take up water
03 Seed imbibition complete (pellet cracked)
05 Radicle emerged from seed (pellet)
07 Shoot emerged from seed (pellet)
09 Emergence: shoot emerges through soil surface

Principal growth stage 1: Leaf development (youth stage)
10 First leaf visible (pinhead-size): cotyledons horizontally unfolded
11 First pair of leaves visible, not yet unfolded (pea-size)
12 2 leaves (first pair of leaves) unfolded
14 4 leaves (2nd pair of leaves) unfolded
15 5 leaves unfolded
Stages continuous till . . .
19 9 and more leaves unfolded

Principal growth stage 3: Rosette growth (crop cover)
31 Beginning of crop cover: leaves cover 10% of ground
32 Leaves cover 20% of ground
33 Leaves cover 30% of ground
34 Leaves cover 40% of ground
35 Leaves cover 50% of ground
36 Leaves cover 60% of ground
37 Leaves cover 70% of ground
38 Leaves cover 80% of ground
39 Crop cover complete: leaves cover 90% of ground

Principal growth stage 4: Development of harvestable vegetative plant parts Beet root
49 Beet root has reached harvestable size

Appendix 10 – Control of Groundkeepers from ALS tolerant plots in subsequent years.

Groundkeepers from ALS tolerant plots need to be controlled in the following crop. Groundkeepers can be produced through either harvest losses or non-germinated seed. Whilst good gleaning at harvest will minimize the risk of groundkeepers in the following year the following control measures should be adopted. Measure 3 should be regarded as obligatory.

1. Ploughing post-harvest. This will bury and kill any groundkeepers that may have been present. Your host grower should be made aware of this.

2. Using a non-ALS herbicide. In the following crop a non-ALS herbicide that will kill any beet present including ALS-tolerant beets. Your host grower should be made aware of this.

3. Inspecting the trial field. This must be done in the following season for the presence of groundkeepers. If any ALS-tolerant groundkeepers are present they must be removed, normally by hand. The location of the ALS plots should be recorded and these specific areas can be targeted for inspection. A diary entry should be made of inspection date, findings and control measures taken.

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