



Animal &  
Plant Health  
Agency

# United Kingdom Variety List Trials: Trial Procedures for Official Examination of Value for Cultivation and Use (VCU) Harvest 2024

Fodder Beet

## **Appendices**

September 2023

## Contents

United Kingdom Variety List Trials: Trial Procedures for Official Examination of Value for Cultivation and Use (VCU) Harvest 2024.....	1
Fodder Beet.....	1
Appendices.....	1
Changes.....	1
Appendix 1 – Approved Trial Organisers/ Operators for Fodder Beet.....	2
Appendix 2 – Seed treatment products for use on VL trials.....	3
Appendix 3 – Seed delivery deadline dates.....	4
Appendix 4 – VCU growing trial operators and trial locations for Fodder Beet.....	5
Appendix 5 – Control varieties for VCU assessments for Fodder Beet.....	6
Appendix 6 – Fungicide programme for Fodder Beet.....	7
Appendix 7 – Dates by which records should be sent to the trial design and data handling organiser.....	8
Appendix 8 – Assessment keys for Fodder Beet diseases.....	9
Leaf diseases.....	9
Infection disease severity description.....	9
Appendix 9 – Assessment keys for Fodder Beet root shape.....	10
Appendix 10 – Growth stage key of beet.....	11
Principal growth stage 0: Germination.....	11
Principal growth stage 1: Leaf development (youth stage).....	11
Principal growth stage 3: Rosette growth (crop cover).....	11
Principal growth stage 4: Development of harvestable vegetative plant parts Beet root	11

# Changes

## Appendix 1 – Approved Trial Organisers/ Operators for Fodder Beet

Activity	Organisers/Operators Responsible
Trials Organiser	BSPB
Growing Trial Operators	SESVanderHave UK Ltd
Seed Handling Operator	NIAB
Trial inspection Operator	BSPB
Technical Validation Operator	NIAB
Data Review and Standard Setting Operator	NIAB
Data Handling Operator	NIAB

## **Appendix 2 – Seed treatment products for use on VL trials**

The seed may be treated with a product currently approved for use in the UK – details of which will be advised by the Trials Organiser, if appropriate.

## Appendix 3 – Seed delivery deadline dates

VCU seed must be delivered to the Seed Handling Operator by **1<sup>st</sup> February**.

# Appendix 4 – VCU growing trial operators and trial locations for Fodder Beet

Growing Trial Operator	Seed Handling Operator (If not Trial Operator)	Location of Trial
SESVanderHave UK Ltd	NIAB	Baumber

## **Appendix 5 – Control varieties for VCU assessments for Fodder Beet**

Magnum  
Bangor  
Blizzard

## **Appendix 6 – Fungicide programme for Fodder Beet**

The fungicide program should follow best local practice.

## Appendix 7 – Dates by which records should be sent to the trial design and data handling organiser

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 Fodder Beet diseases

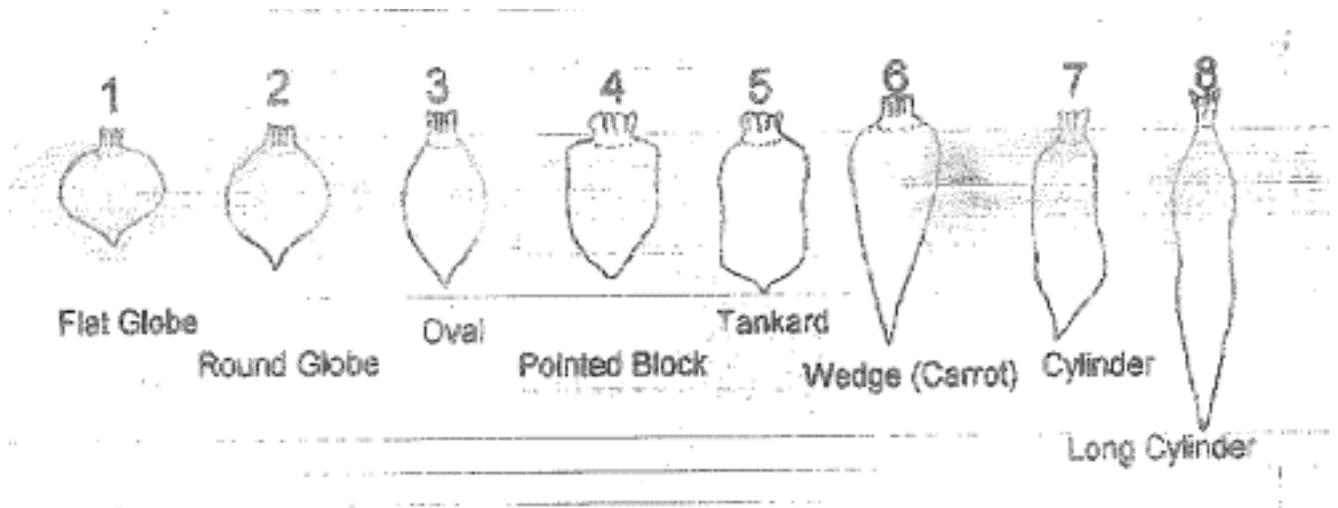
## Leaf diseases

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

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 – Assessment keys for Fodder Beet root shape



1 Diagram showing fodder beet root shape. 1- Flat globe, 2- Round globe, 3- Oval, 4- Pointed block, 5- Tankard, 6- Wedge (carrot), 7- Cylinder, 8- Long cylinder

# Appendix 10 – 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.
- 15 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.



© Crown copyright 2023

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v.3.

To view this licence visit [www.nationalarchives.gov.uk/doc/open-government-licence/version/3/](http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/) or email [PSI@nationalarchives.gsi.gov.uk](mailto:PSI@nationalarchives.gsi.gov.uk)

This publication is available at [www.gov.uk/government/publications](http://www.gov.uk/government/publications)

Any enquiries regarding this publication should be sent to us at

[webmaster@apha.gov.uk](mailto:webmaster@apha.gov.uk)

[www.gov.uk/apha](http://www.gov.uk/apha)

The Animal and Plant Health Agency (APHA) is an executive agency of the Department for Environment, Food & Rural Affairs, and also works on behalf of the Scottish Government and Welsh Government.