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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

FODDER BEET

UPOV Code(s): BETAA_VUL_GVA

Beta vulgaris L. Fodder Beet Group

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from France

to be considered by the

*Technical Working Party for Agricultural Crops at its fifty-fourth session,
to be held in Arusha, United Republic of Tanzania, from 2025-05-19 to 2025-05-22*

Disclaimer: this document does not represent UPOV policies or guidance

Alternative Names:*

Botanical name	English	French	German	Spanish
<i>Beta vulgaris</i> L. Fodder Beet Group, <i>Beta vulgaris</i> L. ssp. <i>vulgaris</i> var. <i>alba</i> DC., <i>Beta vulgaris</i> L. ssp. <i>vulgaris</i> var. <i>crassa</i> Alef., <i>Beta vulgaris</i> L. ssp. <i>vulgaris</i> var. <i>crassa</i> Mansf., <i>Beta vulgaris</i> L. ssp. <i>vulgaris</i> var. <i>rapacea</i> K. Koch	Fodder beet	Betterave fourragère	Runkelrübe	Remolacha forrajera

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Beta vulgaris* L. Fodder Beet Group.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of naked seeds.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

350 g

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 *Number of Growing Cycles*

3.1.1 The minimum duration of tests should normally be two independent growing cycles.

3.1.2 The two independent growing cycles should be in the form of two separate plantings.

3.1.3 The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.

3.2 *Testing Place*

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness".

3.3 *Conditions for Conducting the Examination*

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.3.2 The optimum stage of development for the assessment of each characteristic is indicated by a number in the Table of Characteristics. The stages of development denoted by each number are described in Chapter 8.

3.4 *Test Design*

Each test should be designed to result in a total of at least 200 plants which should be divided between at least 2 replicates.

3.5 *Additional Tests*

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 *Distinctness*

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of Plants or Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 45 plants or parts of plants taken from each of 45 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the Table of Characteristics (see document TGP/9 "Examining Distinctness", Section 4 "Observation of characteristics"):

MG: single measurement of a group of plants or parts of plants

MS: measurement of a number of individual plants or parts of plants

VG: visual assessment by a single observation of a group of plants or parts of plants

VS: visual assessment by observation of individual plants or parts of plants"):

Type of observation: visual (V) or measurement (M)

"Visual" observation (V) is an observation made on the basis of the expert's judgment. For the purposes of this document, "visual" observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 *Uniformity*

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 These Test Guidelines have been developed for the examination of cross-pollinated and hybrid varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.

4.2.3 The assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.4 The recommended sample size for the assessment of uniformity is indicated by the following key in the table of characteristics:

A sample size of 100 plants/parts of plants

B sample size of 200 plants

4.2.5 If not otherwise indicated, for the assessment of uniformity, a population standard of 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 200 plants, 7 off-types are allowed. For the assessment of uniformity of ploidy, a population standard of 10% and an acceptance probability of at least 95% should be applied. In the case of a sample of 15 plants, 1 off-type is allowed.

4.2.6 For root characteristics, the assessment of uniformity can be done in 2 steps. In a first step, 45 roots are observed. If 3 or less off-types are observed, the variety is declared to be uniform. If more than 3 off-types are observed, an additional sample of 55 roots must be observed.

4.3 *Stability*

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new seed stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

- (a) Germity (characteristic 1)
- (b) Ploidy (characteristic 2)
- (c) Root: shape (characteristic 15)
- (d) Root: color below ground (characteristic 21)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 "Examining Distinctness".

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 *States of Expression and Corresponding Notes*

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.2.2 All relevant states of expression are presented in the characteristic.

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 "Development of Test Guidelines".

6.3 *Types of Expression*

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 *Example Varieties*

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 Legend

English				français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1	2	3	4	5	6	7			
		Name of characteristics in English		Nom du caractère en français		Name des Merkmals auf Deutsch	Nombre del carácter en español		
		states of expression		types d'expression		Ausprägungsstufen	tipos de expresión		

- | | | | |
|---|---|---|---------------------|
| 1 | Characteristic number | | |
| 2 | (*) | Asterisked characteristic | – see Chapter 6.1.2 |
| 3 | Type of expression | | |
| | QL | Qualitative characteristic | – see Chapter 6.3 |
| | QN | Quantitative characteristic | – see Chapter 6.3 |
| | PQ | Pseudo-qualitative characteristic | – see Chapter 6.3 |
| 4 | Method of observation (and type of plot, if applicable) | | |
| | MG, MS, VG, VS | | – see Chapter 4.1.5 |
| 5 | (+) | See Explanations on the Table of Characteristics in Chapter 8.2 | |
| 6 | (a)-(x) | See Explanations on the Table of Characteristics in Chapter 8.1 | |
| 7 | Growth stage key (if applicable) | See Explanations on the Table of Characteristics in Chapter 8.3 | |

7. Table of Characteristics/Tableau des caracteres/Merkmalstabelle/Tabla de caracteres

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	(*)	QN	VG	(+)		10-20			
		Germity							
		monogerm						Brick	1
		partly monogerm/ partly multigerm							2
		multigerm						Jaune d'Eckendor	3
2.	(*)	PQ	MS	(+)		10-20			
		Ploidy							
		diploid						Brick	2
		triploid						Jamon	3
		tetraploid							4
		polyploid							5
3.		PQ	VG/VS	(+)		10-20			
		Hypocotyl: color							
		white							1
		green						Bergman, Perrine	2
		yellow						Bangor, Cerise	3
		orange						Splendide	4
		pink						Brick	5
		red							6
		red purple							7
4.		QN	VG B	(+)		33-39			
		Leaf: attitude							
		erect							1
		erect to semi-erect						Cerise	2
		semi-erect							3
		semi-erect to intermediate							4
		intermediate						Jamon	5
		intermediate to semi-prostrate							6
		semi-prostrate							7
		semi-prostrate to prostrate							8
		prostrate							9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5.	(*)	QN	VG B			33-39			
	Leaf: blistering								
	weak							Brunium	1
	weak to medium							Jamon	2
	medium							Brick	3
	medium to strong							Eloquenta KWS	4
	strong								5
6.		QN	VG B			33-39			
	<i>Propose to delete</i> Leaf: glossiness								
	absent or weak								1
	weak to medium								2
	medium								3
	medium to strong								4
	strong								5
7.		QN	VG B			33-39			
	Leaf: undulation of margin								
	weak							Brunium, Cerise	1
	weak to medium								2
	medium							Perrine	3
	medium to strong							Eloquenta KWS	4
	strong								5
8.		QN	VG B			33-39			
	Leaf blade: intensity of green color								
	very light								1
	very light to light								2
	light							Lactimo	3
	light to medium								4
	medium							Jamon, Perrine	5
	medium to dark								6
	dark							Laurena KWS	7
	dark to very dark								8
	very dark								9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9.	(*)	QN	MS/VG B	(+)		33-39			
		Leaf: length							
		very short							1
		very short to short							2
		short						Eloquenta KWS	3
		short to medium						Bergman, Brunium	4
		medium						Jamon, Laurena KWS	5
		medium to long						Derixia, Girida	6
		long						Bolero	7
		long to very long							8
		very long							9
10.		QN	MS/VG B			33-39			
		Leaf: width							
		very narrow							1
		very narrow to narrow							2
		narrow						Laurena KWS	3
		narrow to medium						Bergman, Girida	4
		medium						Bolero, Brunium	5
		medium to broad						Derixia, Jamon	6
		broad						Géante Rouge	7
		broad to very broad							8
		very broad							9
11.		QN	MS/VG B			33-39			
		Leaf blade: width in relation to length							
		very narrow							1
		very narrow to narrow							2
		narrow							3
		narrow to medium						Brunium, Jamon	4
		medium						Bergman	5
		medium to broad						Bolero	6
		broad						Girida, Laurena KWS	7
		broad to very broad							8
		very broad							9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.		PQ	VG B	(+)		33-39			
	Leaf blade: shape of apex								
	strongly acute							Laurena KWS, Splendide	1
	right angle							Bolero, Brick, Jamon	2
	obtuse							Cerise, Feldherr, Kokomo	3
13.		QN	MS/VG B			33-39			
	Petiole: length								
	very short								1
	very short to short								2
	short							Bolero	3
	short to medium								4
	medium							Brick, Laurena KWS	5
	medium to long								6
	long							Girida	7
	long to very long								8
	very long								9
14.		QN	MG/VG B			49			
	Plant: natural height								
	short								1
	short to medium							Brunium	2
	medium							Bolero, Brick	3
	medium to tall							Enermax, Perrine	4
	tall							Abramo	5
15.	(*)	PQ	VG A	(+)		49			
	Root: shape								
	obloid								1
	elongated obloid								2
	obovoid							Aversa	3
	narrow obovoid								4
	obconic							Girida, Perrine	5
	broad obconic								6
	compressed oblong							Bolero	7
	oblong								8
	elongated oblong							Jaune d'Eckendor	9

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	QN	MS/VG A			49			
	Root: length							
	very short							1
	very short to short							2
	short						Brick	3
	short to medium						Energarcí	4
	medium						Cerise	5
	medium to long						Bangor, Ribambelle	6
	long						Géante Blanche	7
	long to very long							8
	very long							9
17.	QN	MS/VG A			49			
	Root: width							
	very narrow							1
	very narrow to narrow							2
	narrow						Géante Blanche	3
	narrow to medium						Bangor	4
	medium						Brick, Cerise	5
	medium to broad						Ribambelle	6
	broad							7
	broad to very broad							8
	very broad							9
18.	QN	MS/VG A			49			
	Root: length in relation to width							
	very short							1
	very short to short							2
	short							3
	short to medium						Brick	4
	medium						Energarcí, Ribambelle	5
	medium to long							6
	long						Bangor	7
	long to very long							8
	very long						Géante Blanche	9

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	QN	MS/VG A	(+)		49			
	Root: position in soil							
	very shallow							1
	very shallow to shallow							2
	shallow						Feldherr	3
	shallow to medium							4
	medium						Tarine	5
	medium to deep						Cerise	6
	deep						Brick, Eloquenta KWS	7
	deep to very deep							8
	very deep							9
20.	PQ	VG A			49			
	Root: color above ground							
	white							1
	green						Brick, Laurena KWS	2
	yellow							3
	orange							4
	red						Kokomo	5
	red purple							6
21.	(*)	PQ	VG A		49			
	Root: color below ground							
	white						Brick, Laurena KWS	1
	yellowish white							2
	yellow						Cerise	3
	yellow orange						Feldherr	4
	orange						Valence	5
	orange red						Dynamo, Kokomo	6
	red						Caribou	7
	light pink						Tarine	8
	pink						Merveille	9
	red purple							10

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22.		QN	MG/MS	(+)		49			
	Root: dry matter content								
	very low								1
	very low to low								2
	low								3
	low to medium								4
	medium							Jamon	5
	medium to high							Valence	6
	high							Brunium	7
	high to very high							Enermax, Tarine	8
	very high							Brick, Perrine	9

8. Explanations on the Table of Characteristics

8.1 *Explanations for individual characteristics*

Ad. 1: Germity

Germity should be observed on 100 seeds.

The attribution of notes for state of expressions is as follows:

Note 1 = monogerm with equal or more than 95% of monogerm seeds

Note 2 = partly monogerm/partly multigerm with less than 95% and more than 15% monogerm seeds Note 3 = multigerm with equal or less than 15% monogerm seeds

For partly monogerm/partly multigerm varieties this characteristic should not be used to establish distinctness.

Ad. 2: Ploidy

Observations should be done on at least 5 plants. If any off-type is observed in a sample of 5 plants, another 10 plants should be observed.

The state of expression 5 - Polyploid is a mixture of diploids, triploids and tetraploids. For polyploid varieties this characteristic should not be used to establish distinctness

Ad. 3: Hypocotyl: color

Observations should be made on at least 100 seedlings, grown in the greenhouse, when plants are about 5 cm high. The occurrence of more than one color should not be regarded as a lack of uniformity but for varieties with more than one color this characteristic should not be used to establish distinctness.

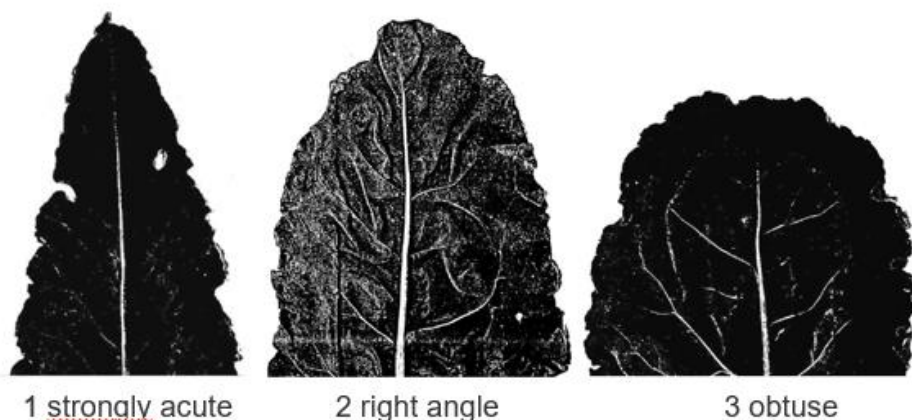
Ad. 4: Leaf: attitude

Observations should be made from the angle formed by the petiole and the vertical axis through the root.

Ad. 9: Leaf: length

Observation should be made on the largest, fully expanded leaf including the petiole.

Ad. 12: Leaf blade: shape of apex



1 strongly acute

2 right angle

3 obtuse

Ad. 15: Root: shape



1 – obloid



2 - elongated
obloid



3 - obovoid



4 – narrow obovoid



5 - obconic



6 – broad
obconic



7 –
compressed
oblong



8 – oblong



9 – elongated
oblong

Ad. 19: Root: position in soil

Observations should be made on the roots by measuring the height above the soil, without harvesting.

Ad. 22: Root: dry matter content

Observations should be made either on a bulk sample of 30 roots or on a sample of 30 individual roots.

8.2 Additional Explanations on the Table of Characteristics

Growth stage of *Beta vulgaris* L. adopted to the BBCH scale (Meier U., 1993)

Code Description

Principal growth stage 0: Germination

- 00 Dry seed
- 01 Imbibition – seed begins to take up water
- 03 End of seed imbibition – seed coat opened (pellet cracked)
- 05 Radicle emerged from seed
- 07 Shoot emerged from seed (pellet)
- 09 Emergence - shoot emerges at the soil surface

Principal growth stage 1: Leaf development (youth stage)

- 10 Cotyledons horizontally unfolded; 1st leaf of pin-head-size
- 11 1st pair of leaves visible, of pea-size
- 12 2 leaves (first pair) unfolded
- 14 4 leaves (second pair) unfolded
- 15 5 leaves unfolded

So on to...

- 19 9 and more leaves unfolded

Principal growth stage 3: Rosette growth (crop cover)

- 30 Beginning of crop cover formation - leaf contact of 10 % of plants in adjacent rows
- 33 Contact of 30 % of plants in adjacent rows
- 39 Crop cover complete - contact of more than 90 % of plants in adjacent rows

Principal growth stage 4: Development of harvestable vegetative plant parts- Beet-root

- 49 Beet-root has reached harvestable size

Principal growth stage 5: Development of inflorescence/flower buds (2nd year of growth)

...

9. Literature

- Meier, U.; L. Bachmann; H. Buhtz; H. Hack; R. Klose; B. Marlander; E. Weber (1993). "Phänologische Entwicklungsstadien der Beta-Rüben (*Beta vulgaris* L. ssp.). Codierung und Beschreibung nach der erweiterten BBCH-Skala (mit Abbildungen)". Nachrichtenbl. Deut. Pflanzenschutzd. 45: 37–41.

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

	Application date: (not to be filled in by the applicant)
--	---

TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights	
---	--

1. Subject of the Technical Questionnaire	
1.1.1 Botanical name	<input type="text" value="Beta vulgaris L. Fodder Beet Group"/> <input type="checkbox"/>
1.1.2 Common name	<input type="text" value="Fodder beet"/>

2. Applicant	
Name	<input type="text"/>
Address	<input type="text"/>
Telephone No.	<input type="text"/>
Fax No.	<input type="text"/>
E-mail address	<input type="text"/>
Breeder (if different from applicant)	<input type="text"/>

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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3. Proposed denomination and breeder's reference

Proposed denomination
(if available)

Breeder's reference

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross []

(please state parent variety)

(.....) x (.....)

female parent

male parent

(b) partially known cross []

(please state parent variety(ies))

(.....) x (.....)

female parent

male parent

(c) unknown cross []

4.1.2 Mutation

(please state parent variety)

4.1.3 Discovery and development

(please state where and when discovered and how developed)

4.1.4 Other

(Please provide details)

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4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

(a) Other (please provide details) []

4.2.2 Vegetative propagation

(a) Other (state method) []

4.2.3 Other
(Please provide details) []

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5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

	Characteristics	Example Varieties	Note
5.1 (1)	Germity		
	monogerm	Brick	1 []
	partly monogerm/ partly multigerm		2 []
	multigerm	Jaune d'Eckendor	3 []
5.2 (2)	Ploidy		
	diploid	Brick	2 []
	triploid	Jamon	3 []
	tetraploid		4 []
	polyploid		5 []
5.3 (3)	Hypocotyl: color		
	white		1 []
	green	Bergman, Perrine	2 []
	yellow	Bangor, Cerise	3 []
	orange	Splendide	4 []
	pink	Brick	5 []
	red		6 []
	red purple		7 []
5.4 (15)	Root: shape		
	obloid		1 []
	elongated obloid		2 []
	obovoid	Aversa	3 []
	narrow obovoid		4 []
	obconic	Girida, Perrine	5 []
	broad obconic		6 []
	compressed oblong	Bolero	7 []
	oblong		8 []
	elongated oblong	Jaune d'Eckendor	9 []

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	Characteristics	Example Varieties	Note
5.5 (21)	Root: color below ground		
	white	Brick, Laurena KWS	1 []
	yellowish white		2 []
	yellow	Cerise	3 []
	yellow orange	Feldherr	4 []
	orange	Valence	5 []
	orange red	Dynamo, Kokomo	6 []
	red	Caribou	7 []
	light pink	Tarine	8 []
	pink	Merveille	9 []
	red purple		10 []

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6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Root: shape</i>	<i>obloid</i>	<i>obconic</i>

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Comments

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#7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes ☐ No ☐

(If yes, please provide details)

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes ☐ No ☐

(If yes, please provide details)

7.3 Other information

Resistance to pests and diseases

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8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes ☐ No ☐

(b) Has such authorization been obtained?

Yes ☐ No ☐

If the answer to (b) is yes, please attach a copy of the authorization.

9. Information on plant material to be examined or submitted for examination

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a) Microorganisms (e.g. virus, bacteria, phytoplasma) Yes ☐ No ☐

(b) Chemical treatment (e.g. growth retardant, pesticide) Yes ☐ No ☐

(c) Tissue culture Yes ☐ No ☐

(d) Other factors Yes ☐ No ☐

Please provide details for where you have indicated "yes".

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes ☐

(please provide details as specified by the Authority)

No ☐

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name

Signature

Date

[End of document]