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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

POTATO*

UPOV Code(s): SOLAN_TUB

Solanum tuberosum L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Solanum tuberosum</i> L.	Potato	Pomme de terre	Kartoffel	Papa, Patata

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 *Solanum tuberosum* L.

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 tubers.

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

100 tubers for each growing cycle

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.

3.4 *Test Design*

- 3.4.1 Each test should be designed to result in a total of at least 60 plants, which should be divided between at least two replicates.
- 3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.
- 3.4.3 The assessment of lightsprout characteristics should be carried out on at least 5 tubers.

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 10 plants or parts of plants taken from each of 10 plants and any other observations made on all plants in the test, disregarding any off-type plants.

In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 1.

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 vegetatively propagated 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 For the assessment of uniformity, a population standard of 1% and an acceptance probability of at least 95% should be applied. In case of a sample size of 60 plants, 2 off-types are allowed. In case of a sample size of 5 tubers, no off-type is allowed.

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 or plant 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) Lightsprout: proportion of blue in anthocyanin coloration of base (characteristic 4)
 - (b) Corolla: *intensity* of anthocyanin coloration on inner side (characteristic 27)
 - (c) Corolla: proportion of blue in anthocyanin coloration on inner side (characteristic 28)
 - (d) Plant: time of maturity (characteristic 31)
 - (e) Tuber: color of skin (characteristic 34)
- 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)-(e) | See Explanations on the Table of Characteristics in Chapter 8.1 | |
| 7 | Growth stage key | See Explanations on the Table of Characteristics in Chapter 8.3 | |

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

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	QN	VG	(a)				
	Lightsprout: size	Germe : taille	Lichtkeim: Größe	Brote: tamaño			
	very small	très petite	sehr klein	muy pequeño			1
	very small to small	très petite à petite	sehr klein bis klein	muy pequeño a pequeño			2
	small	petite	klein	pequeño	Laura		3
	small to medium	petite à moyenne	klein bis mittel	pequeño a medio			4
	medium	moyenne	mittel	medio	Diamant, Victoria		5
	medium to large	moyenne à grande	mittel bis groß	de medio a grande			6
	large	grand	groß	grande	Solist		7
	large to very large	grande à très grande	groß bis sehr groß	grande a muy grande			8
	very large	très grande	sehr groß	muy grande			9
2. (*)	PQ	VG	(+)	(a)			
	Lightsprout: shape of base	Germe : forme de la base	Lichtkeim: Form der Basis	Brote: forma de la base			
	globose	globuleuse	kugelförmig	globose	Albatros		1
	ovoid	ovoïde	eiartig	ovoïde	Laura		2
	conic	conique	kegelförmig	cónica	Bintje, Solist		3
	broad cylindrical	cyllindrique large	breit zylindrisch	cilíndrica ancha	Diamant, Innovator		4
	narrow cylindrical	cyllindrique étroite	schmal zylindrisch	cilíndrica estrecha	Cecile		5
3. (*)	QN	VG	(a), (b)				
	Lightsprout: anthocyanin coloration of base	Germe : pigmentation anthocyanique de la base	Lichtkeim: Anthocyanfärbung der Basis	Brote: pigmentación antociánica de la base			
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Estima		1
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil			2
	weak	faible	gering	débil	Solist		3
	weak to medium	faible à moyenne	gering bis mittel	débil a media			4
	medium	moyenne	mittel	media	Arielle		5
	medium to strong	moyenne à forte	mittel bis stark	media a fuerte			6
	strong	forte	stark	fuerte	Abbot, Victoria		7
	strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte			8
	very strong	très forte	sehr stark	muy fuerte	Agria, Red Emmalie		9

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4.	(*)	QN	VG	(+)	(a)			
		Lightsprout: proportion of blue in anthocyanin coloration of base	Germe : proportion de bleu dans la pigmentation anthocyanique de la base	Lichtkeim: Blauanteil der Anthocyanfärbung der Basis	Brote: proporción de azul en la pigmentación antocianica de la base			
		absent or low	absente ou faible	fehlend oder gering	ausente o baja	Arielle, Solist, Victoria	1	
		medium	moyenne	mittel	media	Abbot	2	
		high	élevée	hoch	alta	Agria, Purple Majesty	3	
5.	(*)	QN	VG	(+)	(a)			
		Lightsprout: hairiness of base	Germe : pilosité de la base	Lichtkeim: Behaarung der Basis	Brote: vellocidad de la base			
		absent or very sparse	absente ou très lâche	fehlend oder sehr locker	ausente o muy laxa	Slaney	1	
		very sparse to sparse	très lâche à lâche	sehr locker bis locker	muy laxa a laxa		2	
		sparse	lâche	locker	laxa	Goldmarie	3	
		sparse to medium	lâche à moyenne	locker bis mittel	laxa a media		4	
		medium	moyenne	mittel	media	Albatros, Laura	5	
		medium to dense	moyenne à dense	mittel bis dicht	media a densa		6	
		dense	dense	dicht	densa	Abbot	7	
		dense to very dense	dense à très dense	dicht bis sehr dicht	densa a muy densa		8	
		very dense	très dense	sehr dicht	muy densa	Oxania	9	
6.		QN	VG	(+)	(a)			
		Lightsprout: size of apex in relation to base	Germe : taille de l'apex par rapport à la base	Lichtkeim: Größe der Spitze im Verhältnis zur Basis	Brote: tamaño del ápice en relación con la base			
		very small	très petite	sehr klein	muy pequeño		1	
		very small to small	très petite à petite	sehr klein bis klein	muy pequeño a pequeño		2	
		small	petite	klein	pequeño	Laura	3	
		small to medium	petite à moyenne	klein bis mittel	pequeño a medio		4	
		medium	moyenne	mittel	medio	Albatros, King Edward	5	
		medium to large	moyenne à grande	mittel bis groß	medio a grande		6	
		large	grand	groß	grande	Abbot	7	
		large to very large	grande à très grande	groß bis sehr groß	grande a muy grande		8	
		very large	très grande	sehr groß	muy grande		9	

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7.	QN	VG	(+)	(a)				
	Lightsprout: habit of apex	Germe : aspect de l'apex	Lichtkeim: Wuchsform der Spitze	Brote: porte del ápice				
	closed	fermé	geschlossen	cerrado	Laura		1	
	closed to intermediate	fermé à intermédiaire	geschlossen bis mittel	cerrado a intermedio			2	
	intermediate	intermédiaire	mittel	intermedio	Arielle		3	
	intermediate to open	intermédiaire à ouvert	mittel bis offen	intermedio a abierto			4	
	open	ouvert	offen	abierto	Diamant, Solist		5	
8.	QN	VG	(a), (b)					
	Lightsprout: anthocyanin coloration of apex	Germe : pigmentation anthocyanique de l'apex	Lichtkeim: Anthocyanfärbung der Spitze	Brote: pigmentación antocianica del ápice				
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Estima, Innovator		1	
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil			2	
	weak	faible	gering	débil	Solist		3	
	weak to medium	faible à moyenne	gering bis mittel	débil a media			4	
	medium	moyenne	mittel	media	Laura, Spunta		5	
	medium to strong	moyenne à forte	mittel bis stark	medio a fuerte			6	
	strong	forte	stark	fuerte	Agria		7	
	strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte			8	
	very strong	très forte	sehr stark	muy fuerte	Blaue St. Galler		9	
9.	QN	VG	(+)	(a)				
	Lightsprout: hairiness of apex	Germe : pilosité de l'apex	Lichtkeim: Behaarung der Spitze	Brote: vellosidad del ápice				
	absent or very sparse	absente ou très lâche	fehlend oder sehr locker	ausente o muy escaso	Goldmarie		1	
	very sparse to sparse	très lâche à lâche	sehr locker bis locker	muy laxa a laxa			2	
	sparse	lâche	locker	laxa	Laura		3	
	sparse to medium	lâche à moyenne	locker bis mittel	laxa a media			4	
	medium	moyenne	mittel	media	Albatros		5	
	medium to dense	moyenne à dense	mittel bis dicht	media a densa			6	
	dense	dense	dicht	densa	Abbot		7	
	dense to very dense	dense à très dense	dicht bis sehr dicht	densa a muy densa			8	
	very dense	très dense	sehr dicht	muy densa	Camilla		9	

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10. (*)	QN	VG	(a)			
	Lightsprout: number of root tips	Germe : nombre de radicules	Lichtkeim: Anzahl Wurzelhöcker	Brote: número de radículas		
	very few	très petit	sehr gering	muy bajo		1
	very few to few	très petit à petit	sehr gering bis gering	muy bajo a bajo		2
	few	petit	gering	bajo	Estima, Solist	3
	few to medium	petit à moyen	gering bis mittel	bajo a medio		4
	medium	moyen	mittel	medio	Arielle, Bintje	5
	medium to many	moyen à élevé	mittel bis groß	medio a alto		6
	many	élevé	groß	alto	Innovator	7
	many to very many	élevé à très élevé	groß bis sehr groß	alto a muy alto		8
	very many	très élevé	sehr groß	muy alto		9
11.	QN	VG	(+)	(a)		
	Lightsprout: length of lateral shoots	Germe : longueur des ramifications latérales	Lichtkeim: Länge der Seitentriebe	Brote: longitud de las ramificaciones laterales		
	very short	très courte	sehr kurz	muy corta		1
	very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta		2
	short	courte	kurz	corta	Laura, Producent	3
	short to medium	courte à moyenne	kurz bis mittel	corta a media		4
	medium	moyenne	mittel	media	Estima, Princess	5
	medium to long	moyenne à longue	mittel bis lang	media a larga		6
	long	longue	lang	larga	Spunta	7
	long to very long	longue à très longue	lang bis sehr lang	larga a muy larga		8
	very long	très longue	sehr lang	muy larga		9
12.	QN	VG	(+)	51-69		
	Plant: foliage structure	Plante : structure du feuillage	Pflanze: Laubstruktur	Planta: estructura del follaje		
	stem type	type à tiges	Stängeltyp	tipo ramificado	Agria, Estima	1
	intermediate type	type intermédiaire	Zwischentyp	tipo intermedio	Premiere	2
	leaf type	type à feuilles	Blatttyp	tipo foliar	Kennebec	3

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13. (*)	QN	VG	(+)	51-69				
	Plant: growth habit	Plante : port	Pflanze: Wuchsform	Planta: hábito de crecimiento				
	upright	dressé	aufrecht	erecto	Victoria			1
	upright to semi-upright	dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semierecto				2
	semi-upright	demi-dressé	halbaufrecht	semierecto	Desiree, Secura			3
	semi-upright to spreading	demi-dressé à étalé	halbaufrecht bis breitwüchsig	semierecto a extendido				4
	spreading	étalé	breitwüchsig	extendido	Solist			5
14. (*)	QN	VG	(+)	(b)	51-69			
	Stem: anthocyanin coloration	Tige : pigmentation anthocyanique	Stängel: Anthocyanfärbung	Tallo: pigmentación antociánica				
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Estima			1
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil				2
	weak	faible	gering	débil	Victoria			3
	weak to medium	faible à moyenne	gering bis mittel	débil a media				4
	medium	moyenne	mittel	media	Laura, Saturna			5
	medium to strong	moyenne à forte	mittel bis stark	media a fuerte				6
	strong	forte	stark	fuerte	Desiree			7
	strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte				8
	very strong	très forte	sehr stark	muy fuerte	Blaue St. Galler, Vitelotte Noir			9
15.	QN	VG	(c)		51-69			
	Leaf: size	Feuille : taille	Blatt: Größe	Hoja: tamaño				
	very small	très petite	sehr klein	muy pequeño				1
	very small to small	très petite à petite	sehr klein bis klein	muy pequeño a pequeño				2
	small	petite	klein	pequeño	King Edward			3
	small to medium	petite à moyenne	klein bis mittel	pequeño a mediano				4
	medium	moyenne	mittel	medio	Laura			5
	medium to large	moyenne à grande	mittel bis groß	medio a grande				6
	large	grande	groß	grande	Kennebec			7
	large to very large	grande à très grande	groß bis sehr groß	grande a muy grande				8
	very large	très grande	sehr groß	muy grande				9

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	QN	VG	(+)	(c)	51-69			
	Leaf: arrangement of leaflets	Feuille : disposition des folioles	Blatt: Anordnung der Blattfiedern	Hoja: disposición de los folíolos				
	overlapping	se recouvrant	überlappend	solapados	Albatros			1
	overlapping to touching	se recouvrant à tangents	überlappend bis sich berührend	solapados a en contacto				2
	touching	tangents	sich berührend	en contacto	Premiere, Solist			3
	touching to free	tangents à disjoints	sich berührend bis freistehend	en contacto a libres				4
	free	disjoints	freistehend	libres	Goldmarie			5
17.	QN	VG	(+)	(c)	51-69			
	Leaf: number of secondary leaflets	Feuille : nombre de folioles secondaires	Blatt: Anzahl sekundärer Blattfiedern	Hoja: número de folíolos secundarios				
	very few	très petit	sehr gering	muy bajo				1
	very few to few	très petit à petit	sehr gering bis gering	muy bajo a bajo				2
	few	petit	gering	bajo	Goldmarie			3
	few to medium	petit à moyen	gering bis mittel	bajo a medio				4
	medium	moyen	mittel	medio	Solist			5
	medium to many	moyen à élevé	mittel bis hoch	medio a alto				6
	many	élevé	hoch	alto	Victoria			7
	many to very many	élevé à très élevé	hoch bis sehr hoch	alto a muy alto				8
	very many	très élevé	sehr hoch	muy alto				9
18.	QN	VG	(+)		51-69			
	Leaf: intensity of green color	Feuille : intensité de la couleur verte	Blatt: Intensität der Grünfärbung	Hoja: intensidad del color verde				
	very light	très claire	sehr hell	muy clara				1
	very light to light	très claire à claire	sehr hell bis hell	muy clara a clara				2
	light	claire	hell	clara	Solist			3
	light to medium	claire à moyenne	hell bis mittel	clara a media				4
	medium	moyenne	mittel	media	Kuras, Victoria			5
	medium to dark	moyenne à foncée	mittel bis dunkel	media a oscura				6
	dark	foncée	dunkel	oscura	Spunta			7
	dark to very dark	foncée à très foncée	dunkel bis sehr dunkel	oscura a muy oscura				8
	very dark	très foncée	sehr dunkel	muy oscura				9

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	QN	VG	(+)	(b), (c)	51-69			
	Leaf: anthocyanin coloration of midrib		Feuille : pigmentation anthocyanique de la nervure médiane		Blatt: Anthocyanfärbung der Mittelrippe	Hoja: pigmentación antocianica del nervio central		
	absent or very weak		absente ou très faible		fehlend oder sehr gering	ausente o muy débil	Solist	1
	very weak to weak		très faible à faible		sehr gering bis gering	muy débil a débil		2
	weak		faible		gering	débil	Russet Burbank	3
	weak to medium		faible à moyenne		gering bis mittel	débil a media		4
	medium		moyenne		mittel	media	Laura	5
	medium to strong		moyenne à forte		mittel bis stark	media a fuerte		6
	strong		forte		stark	fuerte	Romanze	7
	strong to very strong		forte à très forte		stark bis sehr stark	fuerte a muy fuerte		8
	very strong		très forte		sehr stark	muy fuerte	Bildtstar , Roseval	9
20.	QN	VG	(+)	(c)	51-69			
	Second pair of lateral leaflets: width in relation to length		Seconde paire de folioles latérales: largeur par rapport à la longueur		Zweites Paar Seitenblattfiedern: Breite im Verhältnis zur Länge	Segundo par de folíolos laterales: anchura en relación con la longitud		
	very narrow		très étroite		sehr schmal	muy estrecha		1
	very narrow to narrow		très étroite à étroite		sehr schmal bis schmal	muy estrecha a estrecha		2
	narrow		étroite		schmal	estrecha	Innovator, Russet Burbank	3
	narrow to medium		étroite à moyenne		schmal bis mittel	estrecha a media		4
	medium		moyenne		mittel	media	Desiree	5
	medium to broad		moyenne à large		mittel bis breit	media a ancha		6
	broad		large		breit	ancha	Cayenne	7
	broad to very broad		large à très large		breit bis sehr breit	ancha a muy ancha		8
	very broad		très large		sehr breit	muy ancha		9
21.	QN	VG	(+)		51-69			
	Terminal and lateral leaflets: frequency of coalescence		Folioles terminales et latérales: fréquence de la coalescence		End- und Seitenblattfiedern: Häufigkeit von Verwachsungen	Folíolos terminales y laterales: frecuencia de la coalescencia		
	absent or very few		absente ou très faible		fehlend oder sehr gering	ausente o muy baja	Courage	1
	few		faible		gering	baja		2
	medium		moyenne		mittel	media	Goldmarie	3
	many		élevée		hoch	alta		4
	very many		très élevée		sehr hoch	muy alta	Cardinia	5

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22.	QN	VG	(+)	(b)	55			
	Flower bud: anthocyanin coloration	Bouton : pigmentation anthocyanique	Blütenknospe: Anthocyanfärbung	Botón floral: pigmentación antociánica				
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Solist			1
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil				2
	weak	faible	gering	débil	Pompadour			3
	weak to medium	faible à moyenne	gering bis mittel	débil a media				4
	medium	moyenne	mittel	media	Victoria			5
	medium to strong	moyenne à forte	mittel bis stark	media a fuerte				6
	strong	forte	stark	fuerte	Osprey			7
	strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte				8
	very strong	très forte	sehr stark	muy fuerte	Blaue St. Galler, Cayenne			9
23. (*)	QN	VG	(+)		60-69			
	Plant: number of inflorescences	Plante : nombre d'inflorescences	Pflanze: Anzahl Blütenstände	Planta: número de inflorescencias				
	absent or very few	absent ou très petit	fehlend oder sehr gering	ausente o muy bajo	King Edward			1
	very few to few	très petit à petit	sehr gering bis gering	muy bajo a bajo				2
	few	petit	gering	bajo	Arielle			3
	few to medium	petit à moyen	gering bis mittel	bajo a medio				4
	medium	moyen	mittel	medio	Laura			5
	medium to many	moyen à élevé	mittel bis hoch	medio a alto				6
	many	élevé	hoch	alto	Agria, Innovator			7
	many to very many	élevé à très élevé	hoch bis sehr hoch	alto a muy alto				8
	very many	très élevé	sehr hoch	muy alto	Euroresa			9
24.	QN	VG	(+)	(d)	60-69			
	Inflorescence: size	Inflorescence : taille	Blütenstand: Größe	Inflorescencia: tamaño				
	very small	très petite	sehr klein	muy pequeño				1
	very small to small	très petite à petite	sehr klein bis klein	muy pequeño a pequeño				2
	small	petite	klein	pequeño	Estima, Solist			3
	small to medium	petite à moyenne	klein bis mittel	pequeño a medio				4
	medium	moyenne	mittel	medio	Goldmarie			5
	medium to large	moyenne à grande	mittel bis groß	medio a grande				6
	large	grande	groß	grande	Innovator, Victoria			7
	large to very large	grande à très grande	groß bis sehr groß	grande a muy grande				8
	very large	très grande	sehr groß	muy grande				9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.	QN	VG	(b), (d)	60-69		
	Peduncle: anthocyanin coloration	Pédoncule : pigmentation anthocyanique	Blütenstandsstiel: Anthocyanfärbung	Pedúnculo: pigmentación antociánica		
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Estima, Solist	1
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil		2
	weak	faible	gering	débil	Victoria	3
	weak to medium	faible à moyenne	gering bis mittel	débil a media		4
	medium	moyenne	mittel	media	Saturna	5
	medium to strong	moyenne à forte	mittel bis stark	media a fuerte		6
	strong	forte	stark	fuerte	Desiree	7
	strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte		8
	very strong	très forte	sehr stark	muy fuerte	Blaue St. Galler	9
26.	QN	VG	(d)	60-69		
	Corolla: diameter	Corolle : diamètre	Krone: Durchmesser	Corola: diámetro		
	very small	très petit	sehr klein	muy pequenõ		1
	very small to small	très petit à petit	sehr klein bis klein	muy pequenõ a pequenõ		2
	small	petit	klein	pequenõ	Sommergold	3
	small to medium	petit à moyen	klein bis mittel	pequenõ a medio		4
	medium	moyen	mittel	medio	Laura	5
	medium to large	moyen à grand	mittel bis groß	medio a grande		6
	large	grand	groß	grande	Innovator	7
	large to very large	grand à très grand	groß bis sehr groß	grande a muy grande		8
	very large	très petit	sehr klein	muy pequenõ	Roseval	9
27. (*)	QN	VG	(b), (d)	60-69		
	Corolla: <u>intensity</u> of anthocyanin coloration on inner side	Corolle : <u>intensité</u> de la pigmentation anthocyanique sur la face interne	Krone: <u>Intensität</u> der Anthocyanfärbung an der Innenseite	Corola: <u>intensidad</u> de la pigmentación antociánica de la cara interna		
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Solist	1
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil		2
	weak	faible	gering	débil	Laura, Pirol, Secura	3
	weak to medium	faible à moyenne	gering bis mittel	débil a medio		4
	medium	moyenne	mittel	medio	Osprey, Quadriga	5
	medium to strong	moyenne à forte	mittel bis stark	medio a fuerte		6
	strong	forte	stark	fuerte	Courage	7
	strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte		8
	very strong	très forte	sehr stark	muy fuerte	Ramona	9

	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
28. (*)	QN VG	(+) (d)	60-69			
	Corolla: proportion of blue in anthocyanin coloration on inner side	Corolle : proportion de bleu dans la pigmentation anthocyanique sur la face interne	Krone: Blauanteil der Anthocyanfärbung an der Innenseite	Corola: proporción de azul en la pigmentación antocianica de la cara interna		
	absent or low	absente ou faible	fehlend oder gering	ausente o baja	Laura, Osprey	1
	medium	moyenne	mittel	media	Courage, Secura	2
	high	forte	hoch	alta	Pirol, Quadriga	3
29. (*)	QN VG	(d)	60-69			
	Corolla: <u>extent</u> of anthocyanin coloration on inner side	Corolla : <u>étendue</u> de la pigmentation anthocyanique sur la face interne	Corolla: <u>Ausdehnung</u> der Anthocyanfärbung an der Innenseite	Corola: <u>extensión</u> de la pigmentación antocianica de la cara interna		
	absent or very small	absente ou très petite	fehlend oder sehr klein	ausente o muy pequeña	Vitelotte Noir	1
	very small to small	très petite à petite	sehr klein bis klein	muy pequeña a pequeña		2
	small	petite	klein	pequeña	Laura	3
	small to medium	petite à moyenne	klein bis mittel	pequeña a media		4
	medium	moyenne	mittel	media	Pirol	5
	medium to large	moyenne à grande	mittel bis groß	media a grande		6
	large	grande	groß	grande	Bildtstar	7
	large to very large	grande à très grande	groß bis sehr groß	grande a muy grande		8
	very large	très grande	sehr groß	muy grande	Courage	9
30.	QN VG		65-69			
	Plant: height	Plante : hauteur	Pflanze: Höhe	Planta: altura		
	very short	très courte	sehr niedrig	muy corta	Mimi	1
	short	courte	niedrig	corta		2
	medium	moyenne	mittel	media	Arielle, Leyla	3
	tall	haute	hoch	alta		4
	very tall	très haute	sehr hoch	muy alta	Agria, Pirol	5

	English		français		deutsch		español		Example Varieties Exemples Beispielssorten Variedades ejemplo		Note/ Nota
31. (*)	QN	MG	(+)		97						
	Plant: time of maturity	Plante : époque de maturité	Pflanze: Zeitpunkt der Reife	Planta: época de madurez							
	very early	très précoce	sehr früh	muy temprana				Leyla, Solist			1
	very early to early	très précoce à précoce	sehr früh bis früh	muy temprana a temprana							2
	early	précoce	früh	temprana				Princess			3
	early to medium	précoce à moyenne	früh bis mittel	temprana a media							4
	medium	moyenne	mittel	media				Laura			5
	medium to late	moyenne à tardive	mittel bis spät	media a tardía							6
	late	tardive	spät	tardía				Euroresa			7
	late to very late	tardive à très tardive	spät bis sehr spät	tardía a muy tardía							8
	very late	très tardive	sehr spät	muy tardía				Kuras, Producent			9
32. (*)	QN	MS/VG	(+)	(e)	99						
	Tuber: form	Tubercule : forme	Knolle: Form	Tubérculo: forma							
	round	arrondie	rund	redonda							1
	short-oval	oblongue courte	rundoval	ovalada corta				Courage			2
	oval	oblongue	oval	ovalada				Diamant, Ramona			3
	long-oval	oblongue allongée	langoval	ovalada larga				Innovator			4
	long	allongée	lang	alargada				Spunta			5
	very long	très allongée	sehr lang	muy alargada				Pompadour			6
33.	QN	VG		(e)	99						
	Tuber: depth of eyes	Tubercule : profondeur des yeux	Knolle: Augentiefe	Tubérculo: profundidad de los ojos							
	very shallow	très peu profonde	sehr flach	muy poco profunda				Nadine			1
	very shallow to shallow	très peu profonde à peu profonde	sehr flach bis flach	muy poco profunda a poco profunda							2
	shallow	peu profonde	flach	poco profunda				Agria, Innovator			3
	shallow to medium	peu profonde à moyenne	flach bis mittel	poco profunda a media							4
	medium	moyenne	mittel	media				Courage			5
	medium to deep	moyenne à profonde	mittel bis tief	media a profunda							6
	deep	profonde	tief	profunda				Kuras, Sommergold			7
	deep to very deep	profonde à très profonde	tief bis sehr tief	profunda a muy profunda							8
	very deep	très profonde	sehr tief	muy profunda				Vitelotte Noir			9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
34. (*)	PQ	VG	(e)	99		
	Tuber: color of skin	Tubercule : couleur de la peau	Knolle: Farbe der Schale	Tubérculo: color de la piel		
	light yellow brown	brun-jaune clair	hellgelbbraun	marrón amarillento claro	Nadine	1
	yellow	jaune	gelb	amarillo	Agria, Solist	2
	orange brown	brun orangé	orangebraun	marrón anaranjado	Karo, Velur	3
	light red	rouge clair	hellrot	rojo claro	Bildtstar	4
	medium red	rouge moyen	mittelrot	rojo medio	Laura	5
	dark red	rouge foncé	dunkelrot	rojo oscuro	Romanze	6
	mottled red	rouge tacheté	rot gefleckt	rojo jaspeado	Cara	7
	blue violet	violet-bleu	blauviolett	violeta azulado	Blaue St. Galler, Vitelotte Noir	8
	mottled blue violet	violet-bleu tacheté	blauviolett gefleckt	violeta azulado jaspeado	Catriona, Kestrel	9
35.	QN	VG	(e)	99		
	Tuber: texture of skin	Tubercule : texture de la peau	Knolle: Textur der Haut	Tubérculo: textura de la piel		
	smooth	lisse	glatt	suave	Laura	1
	medium	intermédiaire	mittel	media	Solist	2
	rough	rugueuse	rauh	áspera	Ivory Russet, Russet Burbank	3
36. (*)	PQ	VG	(+) (e)	99		
	Tuber: color of base of eye	Tubercule : couleur de la base de l'œil	Knolle: Farbe des Augengrundes	Tubérculo: color de la base del ojo		
	white	blanc	weiß	blanco	Nadine	1
	yellow	jaune	gelb	amarillo	Agria, Solist	2
	red	rouge	rot	rojo	Quarta, Romanze	3
	blue	bleu	blau	azul	Double Fun, Vitelotte Noir	4

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
37. (*)	PQ	VG	(+)	(e)	99			
	Tuber: color of flesh	Tubercule : couleur de la chair	Knolle: Farbe des Fleisches	Tubérculo: color de la pulpa				
	white	blanc	weiß	blanco	Kuras, Russet Burbank	1		
	yellowish white	blanc jaunâtre	gelblichweiß	blanco amarillento	Desiree, Estima	2		
	light yellow	jaune clair	hellgelb	amarillo claro	Diamant, Solist	3		
	medium yellow	jaune moyen	mittelgelb	amarillo medio	Bildtstar , Quarta	4		
	dark yellow	jaune foncé	dunkelgelb	amarillo oscuro	Laura, Princess	5		
	red	rouge	rot	rojo	Red Emmalie	6		
	red parti-colored	rouge tacheté	rot gefleckt	parcialmente rojo	Early Rose	7		
	blue violet	violet-bleu	blauviolett	violeta azulado	Purple Majesty	8		
	blue violet parti-colored	violet-bleu tacheté	blauviolett gefleckt	parcialmente violeta azulado	Double Fun	9		

8. Explanations on the Table of Characteristics

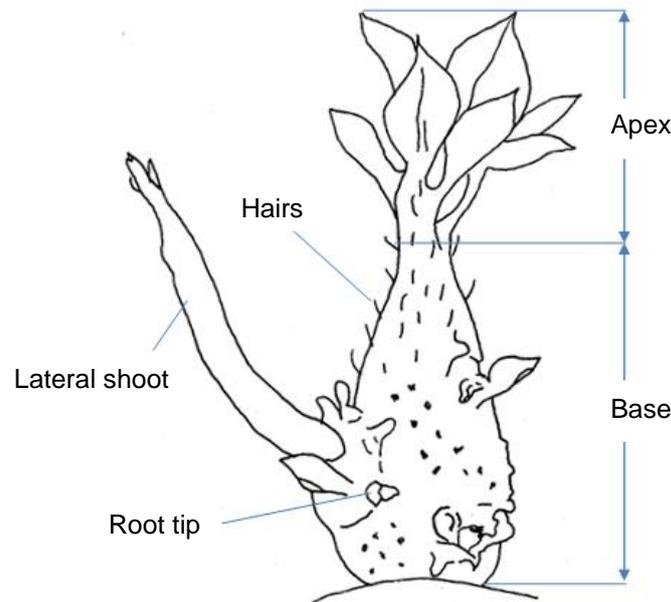
8.1 *Explanations covering several characteristics*

Characteristics containing the following key in the Table of Characteristics should be examined as indicated below:

- (a) Observations should be made on lightsprouts grown according to the following method:
The spectrum and the intensity of the light source are the most important factors for the expression of lightsprouts characteristics. This spectrum is defined by the type of lamps and the voltage used. When extremes of temperature are avoided, the influence of the temperature on the speed of development is small. A good expression of the characteristics is obtained when the lightsprouts are grown in a light-sealed cabinet at room temperature under continuous light provided by small incandescent bulbs (6V AC/0.05 A) giving an intensity of 7 to 11 lux (approximately 8 bulbs per square meter, 20-30 cm above the tubers).

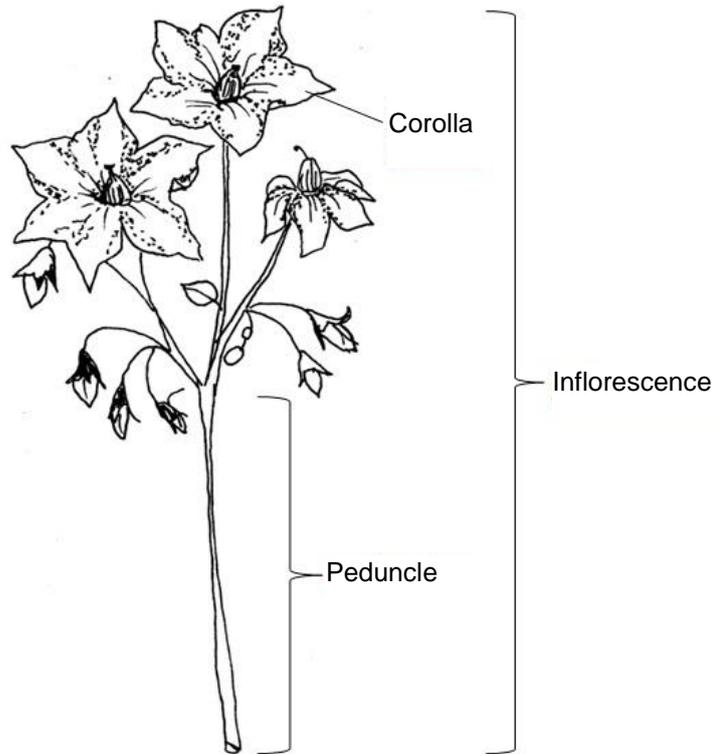
Observations should be made in a room with indirect day light when the characteristics 7 (habit of apex) and 11 (length of lateral shoots) have reached their maximum differentiation. Example varieties should be used to determine the optimal stage for observations.

The development of lightsprouts depends on the time of test after harvest. Development increases with age of tubers. If the test is started already about 100 days after harvest, the appropriate stage for observations might be reached only after about 14 weeks due to dormancy and/or slow development. If the test is started later, the appropriate stage for observations might be reached after a shorter period.



- (b) The intensity of the anthocyanin coloration should be observed. The extent and the distribution should not be considered.
- (c) Observations should be made on fully developed leaves from the center of the plant. One leaf from each of 10 plants should be picked from a main stem halfway between the top and the bottom of the plant.

(d)

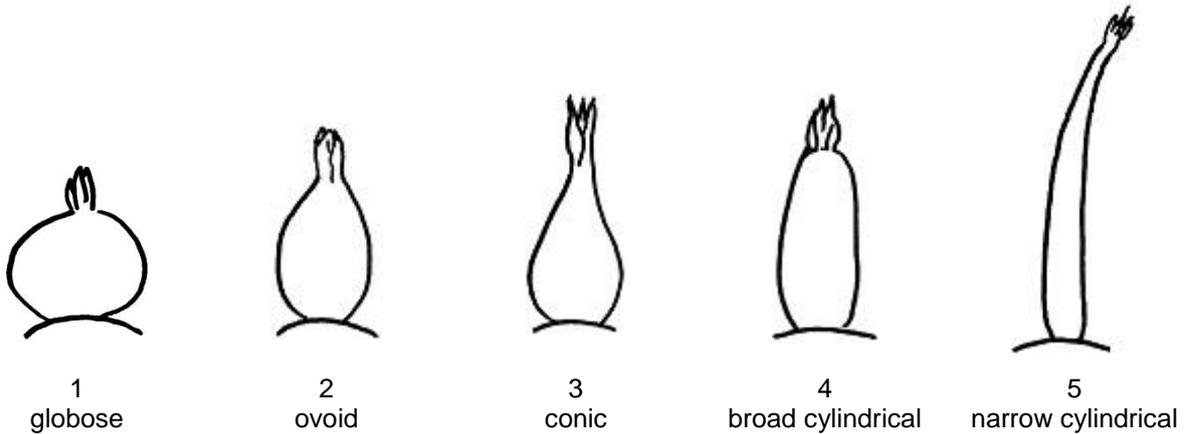


Observations of flower color should be made on the inner side of freshly opened flowers, the best moment is early in the morning.

(e) Observations should be made within two weeks after harvest. Tubers should be shielded from sunlight as this may have an effect on the color.

8.2 Explanations for individual characteristics

Ad. 2: Lightsprout: shape of base



Ad. 4: Lightsprout: proportion of blue in anthocyanin coloration of base

The color of anthocyanin results from a red and a blue component. If the proportion of blue is low the anthocyanin appears red violet. If the proportion of blue is high the anthocyanin appears blue violet.

Ad. 5: Lightsprout: hairiness of base

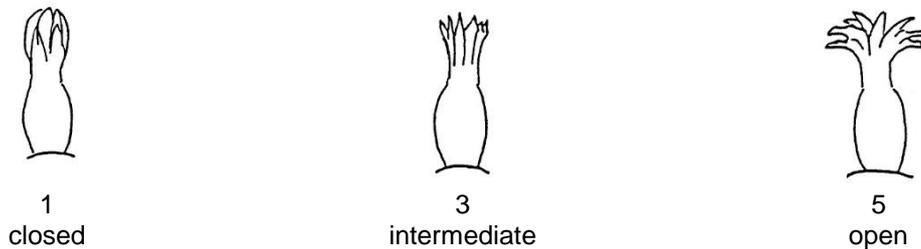
It is recommended to use a magnifier.

Hairiness is not always evenly distributed over the lightsprout. The total amount of hairiness of the base should be averaged over the total area of the lightsprout base.

Ad. 6: Lightsprout: size of apex in relation to base

The size of the apex should be examined in relation to the size of the base.

Ad. 7: Lightsprout: habit of apex

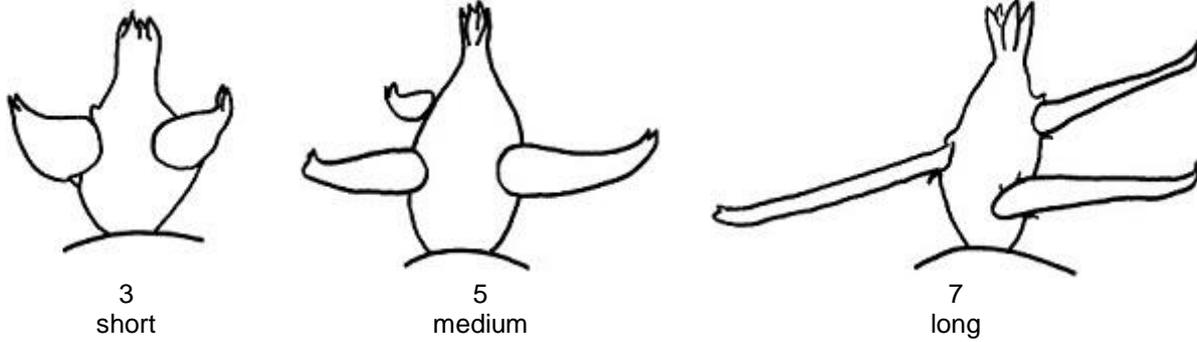


Ad. 9: Lightsprout: hairiness of apex

It is recommended to use a magnifier.

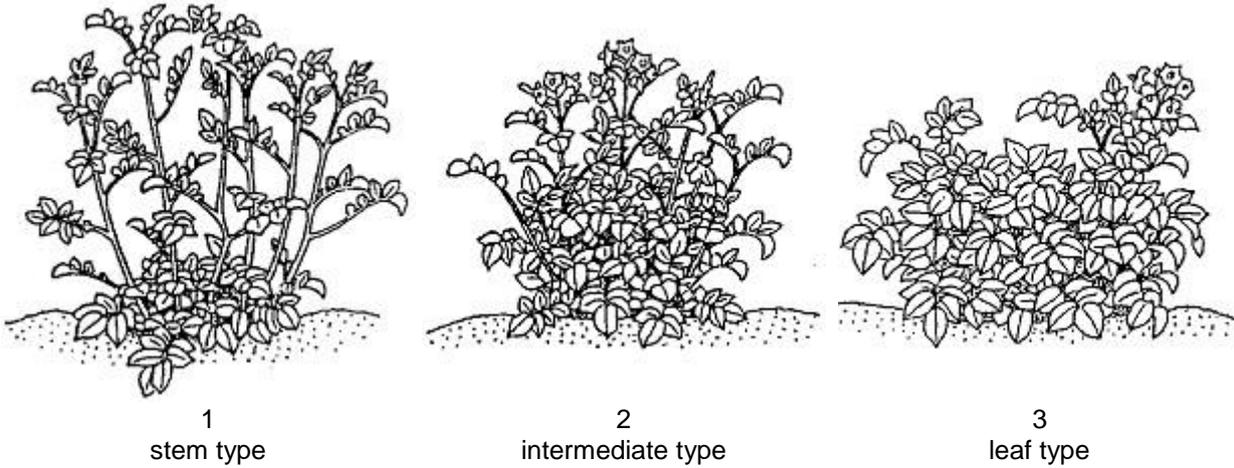
Hairiness is not always evenly distributed over the lightsprout. The total amount of hairiness of the apex should be averaged over the total area of the lightsprout apex.

Ad. 11: Lightsprout: length of lateral shoots

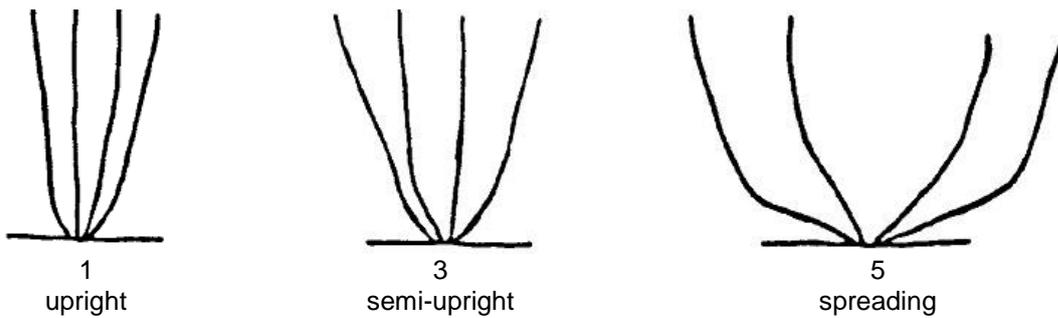


Ad. 12: Plant: foliage structure

Stem type: foliage open, stems clearly visible
Intermediate type: foliage half open, stems partly visible
Leaf type: foliage closed, stems not or hardly visible



Ad. 13: Plant: growth habit



Ad. 14: Stem: anthocyanin coloration

Observations should be made on the lower three quarters of the stems.

Ad. 16: Leaf: arrangement of leaflets



1
overlapping

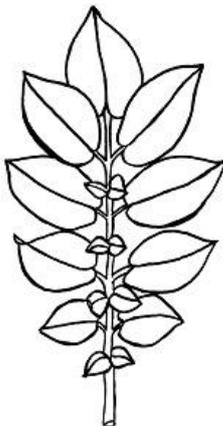


3
touching

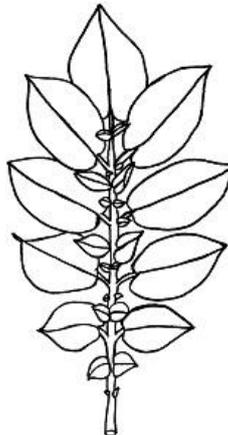


5
free

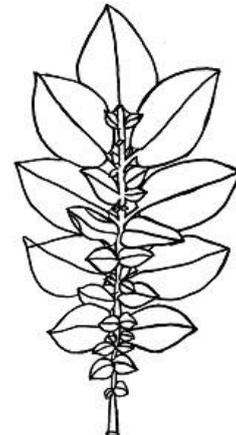
Ad. 17: Leaf: number of secondary leaflets



3
few



5
medium



7
many

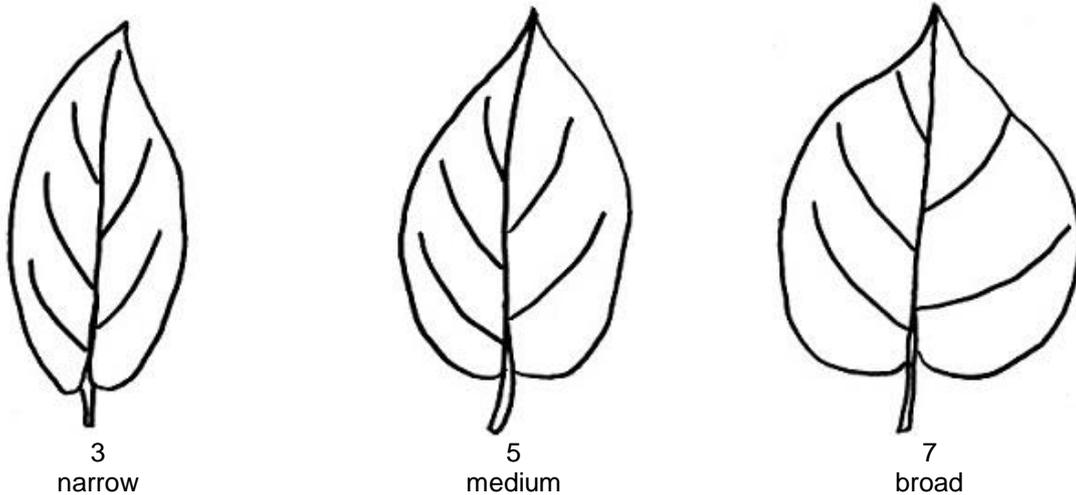
Ad. 18: Leaf: intensity of green color

Observations should be made on fully developed leaves in the center of the plant, preferably not in direct sunlight.

Ad. 19: Leaf: anthocyanin coloration of midrib

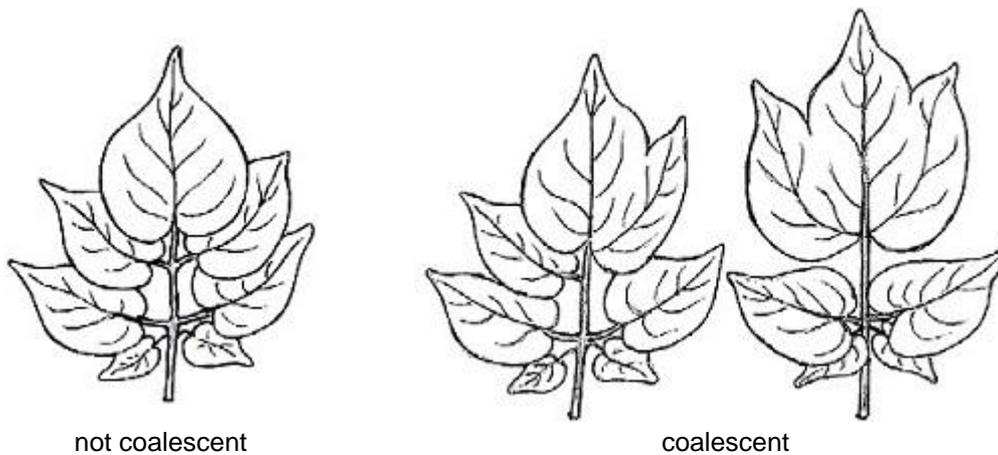
Observations should be made on the upper side of the leaf.

Ad. 20: Second pair of lateral leaflets: width in relation to length



Ad. 21: Terminal and lateral leaflets: frequency of coalescence

Observations should be made on fully developed leaves throughout the whole plant.



Ad. 22: Flower bud: anthocyanin coloration

Observations should be made on fully developed buds before the corolla is visible.

Ad. 23: Plant: number of inflorescences

During the flowering period the plots are observed several times and the number is scored. The highest score reached is noted as the final state of expression.

Ad. 24: Inflorescence: size

The general impression of the whole plot is observed.

Ad. 28: Corolla: proportion of blue in anthocyanin coloration on inner side

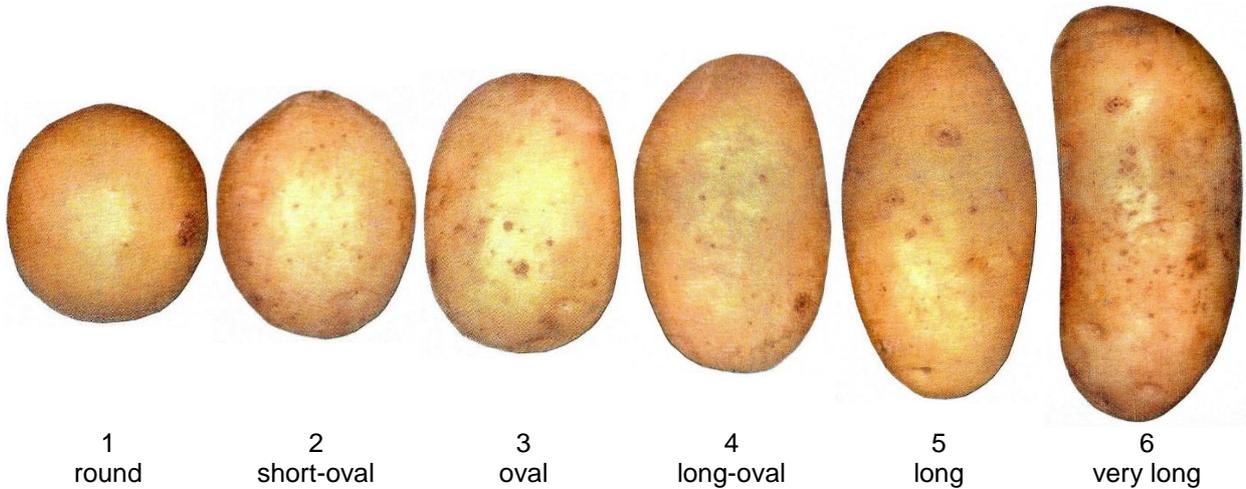
The color of anthocyanin results from a red and a blue component. If the proportion of blue is low the anthocyanin appears red violet. If the proportion of blue is high the anthocyanin appears blue violet.

Ad. 31: Plant: time of maturity

Time of maturity is reached when 80% of the leaves are dead.

Ad. 32: Tuber: form

The form is defined by length to width ratio. The predominant form should be observed.



Ad. 36: Tuber: color of base of eye

Not applicable for varieties with particolored skin (note 7 and 9 in characteristic 34: Tuber: color of skin).

Ad. 37: Tuber: color of flesh

Observations should be made on freshly cut tubers. A few minutes after cutting the tuber, the flesh may be discolored.

8.3 *Phenological growth stages and BBCH-identification keys of potato (Meier et al., 1997)*

Codes		Description
2digit	3digit	
Principal growth stage 0: Sprouting/Germination		
...		
Principal growth stage 1: Leaf development		
...		
Principal growth stage 2: Formation of basal side shoots below and above soil surface		
(main stem)		
...		
Principal growth stage 3: Main stem elongation (crop cover)		
...		
Principal growth stage 4: Tuber formation		
...		
Principal growth stage 5: Inflorescence (cyme) emergence		
51	501	First individual buds (1–2 mm) of first inflorescence visible (main stem)
55	505	Buds of first inflorescence extended to 5 mm
59	509	First flower petals of first inflorescence visible
...		
Principal growth stage 6: Flowering		
60	600	First open flowers in population
61	601	Beginning of flowering about 10% of flowers in the first inflorescence open (main stem)
...		
65	605	Full flowering: 50% of flowers in the first inflorescence open
...		
68	608	80% of flowers in the first inflorescence open
69	609	End of flowering in the first inflorescence
...		
Principal growth stage 7: Development of fruit		
...		
Principal growth stage 8: Ripening of fruit and seed		
...		
Principal growth stage 9: Senescence		
91	901	Beginning of leaf yellowing
93	903	Most of the leaves yellowish
95	905	50% of the leaves brownish
97	907	Leaves and stem dead, stems bleached and dry
99	909	Harvested product

9. Literature

Meier, U. (ed.), 1997: Growth stages of mono- and dicotyledonous plants / Entwicklungsstadien mono- und dikotyle Pflanzen / Estadios de las plantas mono- y dicotiledóneas / Stades phénologiques des mono- et dicotylédones cultivées: BBCH-Monograph. Blackwell Wissenschaftsverlag, Berlin, Wien.

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	Botanical name	<input type="text" value="Solanum tuberosum L."/>
1.2	Common name	<input type="text" value="Potato"/>
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"/>
3. Proposed denomination and breeder's reference		
	Proposed denomination (if available)	<input type="text"/>
	Breeder's reference	<input type="text"/>

#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 known 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)

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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4.2	Method of propagating the variety	
4.2.1	Vegetative propagation	
(a)	Tuber	[]
(b)	Other (state method)	[]
	<input type="text"/>	
4.2.2	Other (Please provide details)	[]
	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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 Lightsprout: proportion of blue in anthocyanin coloration of base (4)		
absent or low	Arielle, Solist, Victoria	1 []
medium	Abbot	2 []
high	Agria, Red Emmalie	3 []
5.2 Plant: number of inflorescences (23)		
absent or very few	King Edward	1 []
very few to few		2 []
few	Arielle	3 []
few to medium		4 []
medium	Laura	5 []
medium to many		6 []
many	Agria, Innovator	7 []
many to very many		8 []
very many	Euroresa	9 []
5.3 Corolla: <u>intensity</u> of anthocyanin coloration on inner side (27)		
absent or very weak	Solist	1 []
very weak to weak		2 []
weak	Laura, Pirol, Secura	3 []
weak to medium		4 []
medium	Osprey, Quadriga	5 []
medium to strong		6 []
strong	Courage	7 []
strong to very strong		8 []
very strong	Ramona	9 []
5.4 Corolla: proportion of blue in anthocyanin coloration on inner side (28)		
absent or low	Laura, Osprey	1 []
medium	Courage, Secura	2 []
high	Pirol, Quadriga	3 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.5 Plant: time of maturity (31)		
very early	Leyla, Solist	1 []
very early to early		2 []
early	Princess	3 []
early to medium		4 []
medium	Laura	5 []
medium to late		6 []
late	Euroresa	7 []
late to very late		8 []
very late	Kuras, Producent	9 []
5.6 Tuber: form (32)		
round	Kuras	1 []
short-oval	Courage	2 []
oval	Diamant, Ramona	3 []
long-oval	Innovator	4 []
long	Spunta	5 []
very long	Pompadour	6 []
5.7 Tuber: color of skin (34)		
light yellow brown	Nadine	1 []
yellow	Agria, Solist	2 []
orange brown	Karo, Velur	3 []
light red	Bildtstar	4 []
medium red	Laura	5 []
dark red	Romanze	6 []
mottled red	Cara	7 []
blue violet	Blaue St. Galler, Vitelotte Noir	8 []
mottled blue violet	Catrina, Kestrel	9 []
5.8 Tuber: color of base of eye (36)		
white	Nadine	1 []
yellow	Agria, Solist	2 []
red	Quarta, Romanze	3 []
blue	Double Fun, Vitelotte Noir	4 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.9 Tuber: color of flesh (37)		
white	Kuras, Russet Burbank	1 []
yellowish white	Desiree, Estima	2 []
light yellow	Diamant, Solist	3 []
medium yellow	Bildtstar, Quarta	4 []
dark yellow	Laura, Princess	5 []
red	Red Emmalie	6 []
mottled red	Early Rose	7 []
blue violet	Purple Majesty	8 []
mottled blue violet	Double Fun	9 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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>Tuber: form</i>	<i>short-oval</i>	<i>long-oval</i>
Comments:			

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

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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".

.....

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]