

UPOV

TG/46/7(proj.1)

ORIGINAL: English

DATE: 2006-05-18

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

ONION, ECHALLION AND SHALLOT *

(UPOV Code: ALLIU_CEP)

Allium cepa L., *Allium cepa* (Cepa Group),
Allium cepa (Aggregatum Group) and *Allium*
oschaninii O. Fedtsch.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from the Netherlands

*to be considered by the Technical Working Party for Vegetables (TWV)
 at its fortieth session to be held in Guanajuato, Guanajuato State, Mexico,
 from June 12 to 16, 2006*

Alternative Names: *

Botanical name	English	French	German	Spanish
<i>Allium cepa</i> L. <i>Allium cepa</i> (Cepa Group), <i>Allium cepa</i> (Aggregatum Group) and <i>Allium oschaninii</i> O. Fedtsch.	Onion, Echallion and Shallot			

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.]

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
1. SUBJECT OF THESE TEST GUIDELINES.....	3
2. MATERIAL REQUIRED	3
3. METHOD OF EXAMINATION.....	3
3.1 Number of Growing Cycles	3
3.2 Testing Place.....	3
3.3 Conditions for Conducting the Examination.....	3
3.4 Test Design	4
3.5 Number of Plants / Parts of Plants to be Examined.....	4
3.6 Additional Tests	4
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY.....	4
4.1 Distinctness	4
4.2 Uniformity.....	5
4.3 Stability.....	5
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL	5
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS	6
6.1 Categories of Characteristics.....	6
6.2 States of Expression and Corresponding Notes.....	6
6.3 Types of Expression	6
6.4 Example Varieties	6
6.5 Legend.....	6
7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES.....	9
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS	23
9. LITERATURE	33
10. TECHNICAL QUESTIONNAIRE.....	35

1. Subject of these Test Guidelines

These Test Guidelines apply to all seed and vegetatively propagated varieties of *Allium cepa* L (Cepa Group); Onion and Echalion, *Allium cepa* L (Aggregatum Group); Shallot and *Allium oschaninii* O. Fedtsch; grey shallot.

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 seed or bulblets.

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

Seed propagated varieties: 20,000 seeds
Vegetatively propagated varieties: 300 bulblets

2.4 The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.

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

2.6 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*

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

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 recommended method of observing the characteristic is indicated by the following key in the second column of the Table 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

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 100 plants for vegetatively propagated varieties, 200 plants for seed propagated varieties applied as onions, and 300 plants for seed propagated varieties applied as shallots, which should be divided between 2 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.

3.5 *Number of Plants / Parts of Plants to be Examined*

Unless otherwise indicated, all observations should be made on 60 plants or parts taken from each of 60 plants.

3.6 *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.

4.2 *Uniformity*

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:

(a) *Cross-pollinated varieties*

For the assessment of uniformity of seed propagated open-pollinated and hybrid varieties, relative uniformity standards should be used.

(b) *Uniformity assessment by off-types*

For the assessment of uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 60 plants, 2 off-types are 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.

Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the previous 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) Bulb: Tendency to split into bulblets (with dry skin around each bulblet) (characteristics 10.1 and 10.2)
- (b) Bulb/Bulblet: general shape (in longitudinal section) (characteristic 18)
- (c) Bulb/Bulblet: basic color of dry skin (characteristic 23)
- (d) Bulb/Bulblet: number of growing points per kg (characteristic 27)
- (e) Male sterility (characteristic 36)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

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*

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.

6.3 *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*

(*) Asterisked characteristic – see Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3

QN: Quantitative characteristic – see Chapter 6.3

PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG: single measurement of a group of plants or parts of plants – see Chapter 3.3.1

MS: measurement of a number of individual plants or parts of plants – see Chapter 3.3.1

VG: visual assessment by a single observation of a group of plants or parts of plants – Chapter 3.3.1

VS: visual assessment by observation of individual plants or parts of plants” –see Chapter 3.3.1

(+) See Explanations on the Table of Characteristics in Chapter 8.2

(1) The optimum stage of development for the assessment of each characteristic is indicated by a number in the second column. The stages of development denoted by each number are described at the end of Chapter VIII.

(2) Type of example variety: O = onion
S = shallot.

Differentiation between onion and shallot

In the framework of this guideline, the differentiation between onions and shallots shall be made depending on the response to characteristics 10.1 and/or 10.2 in conjunction with characteristic 27.

Seed propagated varieties in classes 1 to 3 for characteristic 10.1 may be considered as onion/echalion (if applied as such), and varieties in classes 7 to 9 shall be considered as shallot. Varieties applied as seed shallots in the classes below 7 have to be judged after re-planting in a second year according to characteristic 10.2.

Varieties in classes 1 to 3 for characteristic 10.2 are onions/echalions and varieties in class 7 to 9 are shallots. Varieties in classes between 3 and 7 of characteristic 10.2 will be judged upon the number of growing points as outlined in characteristic 27 after vegetative multiplication (in the second growing cycle).

Varieties in class 1 to 3 for characteristic 27 are onions/echalions whereas varieties in class 5 to 9 are shallots.

In cases of varieties falling in between classes 3 and 5 for characteristic 27, there shall be an exchange of results and plant material where appropriate between testing authorities to try and reach a conclusion. If after this stage a conclusion still has not been reached, the final decision shall be taken by the granting / registering authority.*

This is illustrated thus:

* In the light of experience this procedure may be amended after three years.

Characteristic 10.1 : Seed propagated varieties only :

Bulb : Tendency to split into bulblets (with dry skin around each bulblet)

varieties applied as seed shallot	(	1	absent or very weak	)	onion/echalion
	(	2		)	(if applied
	(	3	weak	)	as such)
	(	4			
	(	5	medium		
	(	6			
		7	strong)	
		8		)	shallot
		9	very strong)	

Characteristic 10.2 : Vegetatively propagated varieties only (including the replanted bulbs harvested from seed propagated varieties) :

Bulb : Tendency to split into bulblets (with dry skin around each bulblet)

		1	absent or very weak)	
		2		)	onion/echalion
		3	weak)	
	(	4			
	(	5	medium		
	(	6			
		7	strong)	
		8		)	shallot
		9	very strong)	

Characteristic 27 : Bulb / Bulblet : number of growing points per kg

	1	very low)	
	2		)	onion/echalion
	3	low)	
	4	exchange of results and/or material – decision after bilateral consultation		
	5	medium)	
	6)	
	7	high	)	shallot
	8)	
	9	very high)	

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

Stage Stade Stadium Estado	¹⁾ English	français	deutsch	español	Example Varieties ²⁾ Exemples ²⁾ Beispielssorten ²⁾ Variedades ejemplo ²⁾	Note/ Nota
1. (*)	Plant: number of leaves per pseudostem	Plant: nombre de feuilles par fausse tige	Pflanze: Anzahl Blätter je Pseudostamms	Planta: número de hojas por pseudotallo		
QN VG	few	petit	gering	bajo	SY300 (O)	3
	medium	moyen	mittel	medio	The Kelsae (O)	5
	many	grand	groß	alto	Yellow sweet spanish (O)	7
2. (*)	Foliage: attitude	Feuillage: port	Laub: Haltung	Follaje: porte		
QN VG	erect	dressé	aufrecht	erecto	Pikant (S), Santé (S)	1
	erect to semi-erect	dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semierecto	Keep Well (O)	2
	semi-erect	demi-dressé	halbaufrecht	semierecto	Southport Red Globe (O), Bonilla (S), Mirage(S), Pikant (S) Prisma (S), Saffron (S)	3
	semi-erect to horizontal	demi-dressé à horizontal	halbaufrecht bis waagerecht	semierecto a horizontal	Hygro (O)	4
	horizontal	horizontal	waagerecht	horizontal		5
3. (*)	Foliage: waxiness	Feuillage: glaucescence	Laub: Bereifung	Follaje: cerosidad		
QN VG	absent to very weak	nulle à très faible	fehlend oder sehr gering	ausente a muy débil		1
	weak	faible	gering	débil	Yellow sweet spanish (O)	3
	medium	moyenne	mittel	media	Hikeeper (O), Golden Gourmet (S)	5
	strong	forte	stark	fuerte	Calypso (O), Flevo (O), Santé (S)	7
	very strong	très forte	sehr stark	muy fuerte		9

4. (*)	Foliage: green color	Feuillage: couleur verte	Laub: Grünfärbung	Follaje: color verde		
QN VG	light	claire	hell	claro	Guimar (O), Yellow sweet spanish (O), Tropix (S)	3
	medium	moyenne	mittel	medio	Caribo (O), Texas grano 502 (O), Golden Gourmet (S)	5
	dark	foncée	dunkel	oscuro	Hikeeper (O), La Reine (O), Santé (S)	7
5. 100 (*) (+)	Foliage: cranking	Feuillage: cassure	Laub: Abbiegen der Blattspitzen	Follaje: quebrado		
QN VG	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Pikant (S)	1
	weak	faible	gering	débil	Golden Bear (O), Santé (S)	3
	medium	moyenne	mittel	media	Hyduro (O)	5
	strong	forte	stark	fuerte		7
	very strong	très forte	sehr stark	muy fuerte		9
6.1	<u>Onion varieties only: Leaf: length</u>	<u>Seulement variétés d'oignon: Feuille: longueur</u>	<u>Nur Zwiebelsorten: Blatt: Länge</u>	<u>Solamente variedades de cebolla: Hoja: longitud</u>		
QN VG/MS	very short	très courte	sehr kurz	muy corta	Barletta (O), Pompei (O)	1
	short	courte	kurz	corta	Nocera (O)	3
	medium	moyenne	mittel	media	Jetset (O)	5
	long	longue	lang	larga		7
	very long	très longue	sehr lang	muy larga	The Kelsae (O)	9
6.2	<u>Shallot varieties only: Leaf: length</u>	<u>Seulement variétés d'échalote: Feuille: longueur</u>	<u>Nur Schalotten-sorten: Blatt: Länge</u>	<u>Solamente variedades de chalota: Hoja: longitud</u>		
QN VG/MS	short	courte	kurz	corta	Pikant (S)	3
	medium	moyenne	mittel	media	Spring Field (S)	5
	long	longue	lang	larga	Golden Gourmet (S), Topper (S)	7
7.1 (*)	<u>Onion varieties only: Leaf: diameter</u>	<u>Seulement variétés d'oignon: Feuille: diamètre</u>	<u>Nur Zwiebel-sorten: Blatt: Durchmesser</u>	<u>Solamente variedades de cebolla: Hoja: diámetro</u>		
QN VG	small	petit	klein	pequeño	Nocera (O), Paris (O)	3

		medium	moyen	mittel	medio	Hyfast (O)	5
		large	grand	groß	grande	Dorata di Parma (O)	7
7.2 (*)		<u>Shallot varieties only:</u> Leaf: diameter	<u>Seulement variétés d'échalote:</u> Feuille: diamètre	<u>Nur Schalotten-sorten:</u> Blatt: Durchmesser	<u>Solamente variedades de chalota:</u> Hoja: diámetro		
QN	VG	small	petit	klein	pequeño	Pikant (S)	3
		medium	moyen	mittel	medio	Spring Field (S)	5
		large	grand	groß	grande	Golden Gourmet (S)	7
8. (+)	100	<u>Onion varieties only:</u> Pseudostem: length (up to highest green leaf)	<u>Seulement variétés d'oignon:</u> Fausse tige: longueur (jusqu'à la feuille verte la plus haute)	<u>Nur Zwiebelsorten:</u> Pseudostamm: Länge (bis zum obersten grünen Blatt)	<u>Solamente variedades de cebolla:</u> Pseudotallo: longitud (hasta la hoja verde más alta)		
QN	VG/MS	short	courte	kurz	corto	Barletta (O)	3
		medium	moyenne	mittel	medio	The Kelsae (O), Hyduro (O)	5
		long	longue	lang	largo	Goldito (O)	7
9. (+)	100	<u>Onion varieties only:</u> Pseudostem: diameter (at mid-point of length)	<u>Seulement variétés d'oignon:</u> Fausse tige: diamètre (à demi-longueur)	<u>Nur Zwiebelsorten:</u> Pseudostamm: Durchmesser (auf halber Länge)	<u>Solamente variedades de cebolla:</u> Pseudotallo: diámetro (a media longitud)		
QN	VG/MS	small	étroite	klein	estrecho		3
		medium	moyenne	mittel	medio	Calypso (O), La Reine (O)	5
		large	grande	groß	ancho	Blanca grande tardia de Lérida (O), The Kelsae (O)	7
10.1 (*) (+)		<u>Seed propagated varieties only:</u> Bulb: Tendency to split into bulblets (with dry skin around each bulblet)					
QN	VG	absent or very weak				Cuisse de Poulet du Poitou (O), Lagos	1
		weak					3
		medium				Mirage (S)	5

	strong				Bonilla (S), Création (S), Longor (S), Mikor (S)	7
	very strong				Delvad (S), Rox (S), Tropix (S)	9
10.2 (*) (+)	<u>Vegetatively propagated varieties only (including the re-planted bulbs harvested from seed propagated varieties): Bulb: Tendency to split into bulblets (with dry skin around each bulblet)</u>					
QN VG	absent or very weak				Cuisse de Poulet du Poitou (O), Lagos	1
	weak					3
	medium				Mirage (S)	5
	strong				Bonilla (S), Création (S), Longor (S), Mikor (S)	7
	very strong				Delvad (S), Rox (S), Tropix (S)	9
11. (*)	<u>Shallot varieties only: Bulb: degree of splitting into bulblets</u>	<u>Seulement variétés d'échalote: Bulbe: degré de séparation en bulbilles</u>	<u>Nur Schalotten-sorten: Zwiebel: Stärke der Aufspaltung in Bulbillen</u>	<u>Solamente variedades de chalota: Bulbo: grado de separación en bulbillos</u>		
QN VG	weak	faible	gering	débil	Atlas (S)	3
	medium	moyen	mittel	medio	Santé (S)	5
	strong	fort	stark	fuerte	Griselle (S)	7
12.1 (*)	<u>Onion varieties only: Bulb: size</u>	<u>Seulement variétés d'oignon: Bulbe: taille</u>	<u>Nur Zwiebel-sorten: Zwiebel: Größe</u>	<u>Solamente variedades de cebolla: Bulbo: tamaño</u>		
QN VG	small	petit	klein	pequeño		3
	medium	moyen	mittel	medio		5
	large	grand	groß	grande	The Kelsae (O)	7

12.2 (*)	<u>Shallot varieties grown from bulblets only:</u> Bulbulet: size	<u>Seulement variétés d'échalote issues de bulbilles:</u> Bulbille: taille	<u>Nur Schalotten-sorten aus Bulbillen:</u> Bulbille: Größe	<u>Solamente variedades de chalota a partir de bulbillos:</u> Bulbillo: tamaño		
QN VG	small	petit	klein	pequeño	Atlas (S)	3
	medium	moyen	mittel	medio	Spring Field (S), Topper (S)	5
	large	grand	groß	grande	Delicato (S), Santé (S)	7
13.1 (*)	<u>Onion varieties only:</u> Bulb: height	<u>Seulement variétés d'oignon:</u> Bulbe: hauteur	<u>Nur Zwiebelsorten:</u> Zwiebel: Höhe	<u>Solamente variedades de cebolla:</u> Bulbo: altura		
QN VG/MS	short	bas	niedrig	bajo	Nocera (O), Stuttgarter Riesen (O)	3
	medium	moyen	mittel	medio	Golden Bear (O),	5
	tall	haut	hoch	alto	Birnförmige (O), The Kelsae (O)	7
13.2 (*)	<u>Shallot varieties grown from bulblets only:</u> Bulbulet: height	<u>Seulement variétés d'échalote issues de bulbilles:</u> Bulbille: hauteur	<u>Nur Schalotten-sorten aus Bulbillen:</u> Bulbille: Höhe	<u>Solamente variedades de chalota a partir de bulbillos:</u> Bulbillo: altura		
QN VG/MS	very short	très basse	sehr niedrig	muy baja		1
	short	basse	niedrig	baja	Atlas (S)	3
	medium	moyenne	mittel	media	Topper (S)	5
	tall	haute	hoch	alta	Matador (S)	7
	very tall	très haute	sehr hoch	muy alta	Longor (S)	9
14.1 (*)	<u>Onion varieties only:</u> Bulb: diameter	<u>Seulement variétés d'oignon:</u> Bulbe: diamètre	<u>Nur Zwiebel-sorten:</u> Zwiebel: Durchmesser	<u>Solamente variedades de cebolla:</u> Bulbo: diámetro		
QN VG/MS	small	petit	klein	pequeño	Nocera (O), Owa (O)	3
	medium	moyen	mittel	medio		5
	large	grand	groß	grande	Stuttgarter Riesen (O)	7

14.2 (*)	<u>Shallot varieties grown from bulblets only:</u> Bulblet: diameter	<u>Seulement variétés d'échalote issues de bulbilles:</u> Bulbille: diamètre	<u>Nur Schalotten-sorten aus Bulbilen:</u> Bulbille: Durchmesser	<u>Solamente variedades de chalota a partir de bulbillos:</u> Bulbillo: diámetro		
QN VG/MS	small	petit	klein	pequeño	Pikant (S)	3
	medium	moyen	mittel	medio		5
	large	grand	groß	grande	Santé (S)	7
15.1 (*)	<u>Onion varieties only:</u> Bulb: ratio height/diameter	<u>Seulement variétés d'oignon:</u> Bulbe: rapport hauteur/diamètre	<u>Nur Zwiebelsorten:</u> Zwiebel: Verhältnis Höhe/Durchmesser	<u>Solamente variedades de cebolla:</u> Bulbo: relación altura/diámetro		
QN VG/MS	very small	très petit	sehr klein	muy pequeño	Pompei (O)	1
	small	petit	klein	pequeño	La Reine (O)	3
	medium	moyen	mittel	medio	Valenciana Temprana (O)	5
	large	grand	groß	grande	The Kelsae (O)	7
	very large	très grand	sehr groß	muy grande	Owa (O)	9
15.2 (*)	<u>Shallot varieties from bulblets only:</u> Bulblet: ratio height/diameter	<u>Seulement variétés d'échalote issues de bulbilles:</u> Bulbille: rapport hauteur/diamètre	<u>Nur Schalotten-sorten aus Bulbilen:</u> Bulbille: Verhältnis Höhe/Durchmesser	<u>Solamente variedades de chalota a partir de bulbillos:</u> Bulbillo: relación altura/diámetro		
QN VG/MS	small	petit	klein	pequeño	Topper (S)	3
	medium	moyen	mittel	medio	Pikant (S)	5
	large	grand	groß	grande	Longor (S)	7
16. (*) (+)	<u>Bulb/Bulblet: position of maximum diameter</u>	<u>Bulbe/Bulbille: position du diamètre maximal</u>	<u>Zwiebel/Bulbille: Position des größten Durchmessers</u>	<u>Bulbo/Bulbillo: posición del diámetro máximo</u>		
QN VG	towards apex	vers le sommet	zur Spitze hin	hacia el ápice	Texas grano 502 (O)	1
	at middle	au milieu	in der Mitte	en el punto medio	Valenciana tardía de exportacion (O), Red Sun (S)	2
	towards base	vers la base	zur Basis hin	hacia la base	The Kelsae (O)	3

Stage Stade Stadium Estado	¹⁾ ¹⁾ English ¹⁾ ¹⁾	français	deutsch	español	Example Varieties ²⁾ Exemples ²⁾ Beispielssorten ²⁾ Variedades ejemplo ²⁾	Note/ Nota
17. 150 (+)	Bulb/Bulblet: width of neck	Bulbe/Bulbille: épaisseur du collet	Zwiebel/Bulbille: Breite des Halses	Bulbo/Bulbillo: anchura del cuello		
QN VG	very narrow	très étroit	sehr schmal	muy estrecho	Pikant (S)	1
	narrow	étroit	schmal	estrecho	La Reine (O), Topper (S)	3
	medium	moyen	mittel	medio	Hyduro (O), Santé (S)	5
	broad	large	breit	ancho	Blanca grande tardía de Lérída (O)	7
	very broad	très large	sehr breit	muy ancho		9
18. 150 (* (+)	Bulb/Bulblet: general shape (in longitudinal section)	Bulbe/Bulbille: forme générale (en section longi- tudinale)	Zwiebel/Bulbille: allgemeine Form (im Längsschnitt)	Bulbo/Bulbillo: forma general (en sección longi- tudinal)		
PQ VG	elliptic	elliptique	elliptisch	elíptica	Owa (O), Longor (S)	1
	ovate	ovoïde	eiförmig	ovoïde	Birnenförmige (O), Rossa lunga di Firenze (O)	2
	broad elliptic	arrondi(e) allongé(e)	breitelliptisch	elíptica ancha	Ailsa Craig (O), Beacon (O), Hiball (O)	3
	circular	arrondi(e)	rund	circular	Pikant (S)	4
	broad ovate	ovoïde large	breit eiförmig	obovalada ancha	Hysam (O)	5
	broad obovate	obovoïde large	breit verkehrt eiförmig	obovada ancha	Lilia (O), Texas grano 502 (O)	6
	rhombic	losangique	rhombisch	rómbica	Zittauer gelbe (O)	7
	transverse elliptic	elliptique aplati(e)	querelliptisch	elíptica transversal	Sturka (O), Stuttgarter Riesen (O), Atlantic (S), Golden Gourmet (S)	8
	transverse narrow elliptic	elliptique très aplati(e)	schmal querelliptisch	elíptica transversal estrecha	Brunswijker (O), De Moissac (O), Paille des vertus (O), Pompei (O)	9

Stage Stade Stadium Estado	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. (*) (+)	<u>Onion varieties only:</u> Bulb: shape of top (as for 18)	<u>Seulement variétés d'oignon:</u> Bulbe: forme du sommet (comme pour 18)	<u>Nur Zwiebelsorten:</u> Zwiebel: Form der Spitze (wie unter 18)	<u>Solamente variedades de cebolla:</u> Bulbo: forma del ápice (como en 18)		
QN VG	depressed	déprimé	eingesunken	deprimido	Dorata di Parma (O)	1
	flat	aplatis	flach	plano	La Reine (O)	2
	slightly raised	légèrement proéminent	leicht vorgewölbt	ligeramente prominente	Valenciana Temprana (O)	3
	rounded	arrondi	abgerundet	redondeado	Valenciana tardía de exportacion (O)	4
	slightly sloping	légèrement pointu	leicht zugespitzt	ligeramente puntiagudo	Ailsa Craig (O), Rouge pale de Niort (O)	5
	strongly sloping	fortement pointu	stark zugespitzt	fuertemente puntiagudo	Owa (O)	6
20. (*) (+)	<u>Bulb/Bulblet:</u> shape of base (as for 18)	<u>Bulbe/Bulbille:</u> forme de la base (comme pour 18)	<u>Zwiebel/Bulbille:</u> Form der Basis (wie unter 18)	<u>Bulbo/Bulbillo:</u> forma de la base (como en 18)		
QN VG	recessed	déprimée	eingesunken	deprimida	Paille des vertus (O)	1
	flat	aplatie	flach	plana	Nocera (O), Valenciana Temprana (O)	2
	round	arrondie	abgerundet	redonda	Valenciana tardía de exportacion (O) Atlas (S), Delicato (S)	3
	weakly tapered	légèrement conique	leicht konisch	ligeramente cónica	Pompei (O), The Kelsae (O), Bonilla (S), Santé (S)	4
	strongly tapered	fortement conique	stark konisch	fuertemente cónica	Owa (O), Longor (S)	5

21.	Bulb/Bulblet: adherence of dry skin after harvest	Bulbe/Bulbille: adhérence des écailles après la récolte	Zwiebel/Bulbille: Anhaften der Schale nach der Ernte	Bulbo/Bulbillo: adherencia de la piel seca tras la cosecha		
QN VG	weak	faible	gering	débil	Ailsa Craig (O), Tropix (S)	3
	medium	moyenne	mittel	media	Rjinsburger 7 (O), Golden Gourmet (S)	5
	strong	forte	stark	fuerte	Stuttgarter Riesen (O), Bonilla (S), Santé (S)	7
22. 150	Bulb/Bulblet: thickness of dry skin	Bulbe/Bulbille: épaisseur des écailles sèches	Zwiebel/Bulbille: Dicke der Schale	Bulbo/Bulbillo: espesor de la piel seca		
QN VG	thin	mince	dünn	delgado	La Reine (O), Pikant (S)	3
	medium	moyenne	mittel	medio	Sturon (O), Santé (S)	5
	thick	épaisse	dick	grueso	Birnförmige (O), Espagnol (O)	7
23. (*)	Bulb/Bulblet: basic color of dry skin	Bulbe/Bulbille: couleur de fond des écailles sèches	Zwiebel/Bulbille: Grundfarbe der Schale	Bulbo/Bulbillo: color de fondo de la piel seca		
PQ VG	white	blanches	weiß	blanca	La Reine (O)	1
	grey	grises	grau	gris	Griselle (S)	2
	green	vertes	grün	verde		3
	yellow	jaunes	gelb	amarilla	Zittauer gelbe (O), Creation (S), Golden Gourmet (S), Topper (S)	4
	brown	brunes	braun	marrón	Valenciana Temprana (O), Mirage (S), Delicato (S)	5
	pink	roses	rosa	rosa	Colorada de Figueras (O), Rox (S)	6
	red	rouges	rot	roja	Brunswijker (O), Red Baron (O)	7
24. (*)	Bulb/Bulblet: intensity of basic color of dry skin	Bulbe/Bulbille: intensité de la couleur de fond des écailles sèches	Zwiebel/Bulbille: Intensität der Grundfarbe der Schale	Bulbo/Bulbillo: intensidad del color de fondo de la piel seca		
QN VG	light	claire	hell	claro		3
	medium	moyenne	mittel	medio		5
	dark	foncée	dunkel	oscuro		7

25. 150 (* (*)	Bulb/Bulblet: hue of color of dry skin (in addition to basic color)	Bulbe/Bulbille: teinte de la couleur des écailles sèches (en plus de la couleur de fond)	Zwiebel/Bulbille: Farbton der Schale (zusätzlich zu der Grundfarbe)	Bulbo/Bulbillo: matiz del color de la piel seca (además del color de fondo)		
PQ VG	absent	absente	fehlend	ausente	Pompei (O)	1
	greyish	grisâtre	gräulich	grisáceo		2
	greenish	verdâtre	grünlich	verdusco		3
	yellowish	jaunâtre	gelblich	amarillento	Topper (S)	4
	brownish	brunâtre	bräunlich	amarronado	Santé (S)	5
	pinkish	rosâtre	rosa	rosáceo	Delicato (S)	6
	reddish	rougeâtre	rötlich	rojizo	Southport Red Globe (O), Mirage (S), Mikor (S), Pikant (S)	7
	purplish	pourpre	purpurn	purpúreo		8
26. (* (*)	Bulb/Bulblet: coloration of epidermis of fleshy scales	Bulbe/Bulbille: couleur de l'épiderme des écailles	Zwiebel/Bulbille: Farbe der Außenhaut der Schuppenblätter	Bulbo/Bulbillo: color de la epidermis de las escamas interiores		
PQ VG	absent	absente	fehlend	ausente		1
	greenish	verdâtre	grünlich	verdusco	Sturon (O), Golden Gourmet (S)	2
	reddish	rougeâtre	rötlich	rojizo	Brunswijker (O), Santé (S), Pikant (S)	3
27. 150 (* (+)	Bulb/Bulblet: number of growing points per kg					
QN MS	very low				Barletta (O), Pompei (O)	1
	low				Cuisse de Poulet du Poitou (O), Figaro (O), Owa (O)	3
	medium				Longor (S), Mirage (S), Prisma (S)	5
	high				Bonilla (S), Création (S), Mikor (S)	7
	very high				Griselle (S), Rox (S), Tropix (S)	9

28.		Bulb/Bulblet: dry matter content	Bulbe/Bulbille: teneur en matière sèche	Zwiebel/Bulbille: Trockensubstanzgehalt	Bulbo/Bulbillo: contenido de materia seca		
(+)							
QN	MG	very low	très faible	sehr niedrig	muy bajo	Exhibition (O)	1
		low	faible	niedrig	bajo	Golden Bear (O), The Kelsae (O)	3
		medium	moyenne	mittel	medio	Golden Gourmet (S), Topper (S)	5
		high	élevée	hoch	alto	Birnförmige (O), Zittauer gelbe (O), Creation (S), Longor (S),	7
		very high	très élevée	sehr hoch	muy alto	Griselle (S)	9
29.	40-100	<u>Onion varieties only: Tendency to bolting in <u>spring</u> sown trials</u>	<u>Seulement variétés d'oignon: Tendance à la montaison dans les essais semés au <u>printemps</u></u>	<u>Nur Zwiebelsorten: Neigung zum Schossen bei <u>Frühjahrsaussaat</u></u>	<u>Solamente variedades de cebolla: Tendencia a la floración en los ensayos de campo sembrados en <u>primavera</u></u>		
QN	VG	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Desihrobat (O)	1
		weak	faible	gering	débil	Stuttgarter Riesen (O), Zittauer gelbe (O)	3
		medium	moyenne	mittel	media	Legio (O)	5
		strong	forte	stark	fuerte		7
		very strong	très forte	sehr stark	muy fuerte	Bronzé d'Amposta (O)	9
30.		<u>Onion varieties only: Time of beginning of bolting in <u>spring</u> sown trials</u>	<u>Seulement variétés d'oignon: Époque du début de la montaison dans les essais semés au <u>printemps</u></u>	<u>Nur Zwiebelsorten: Zeitpunkt des Schossbeginns bei <u>Frühjahrsaussaat</u></u>	<u>Solamente variedades de cebolla: Época de comienzo de floración de los ensayos de campo sembrados en <u>primavera</u></u>		
QN	MS	early	précoce	früh	temprana	Bronzé d'Amposta (O)	3
		medium	moyenne	mittel	media	Legio (O)	5
		late	tardive	spät	tardía		7

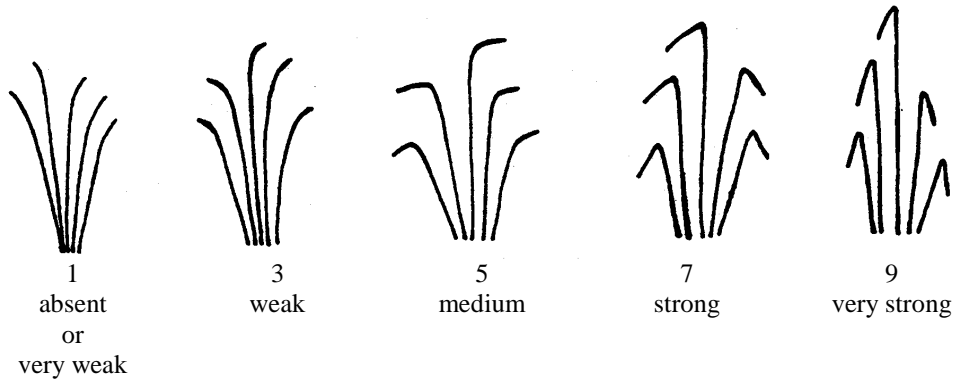
31.	40-100	<u>Onion varieties only:</u> Tendency to bolting in <u>autumn</u> sown trials	<u>Seulement variétés d'oignon:</u> Tendance à la montaison dans les essais semés en <u>automne</u>	<u>Nur Zwiebelsorten:</u> Neigung zum Schossen bei <u>Herbstaussaat</u>	<u>Solamente variedades de cebolla:</u> Tendencia a la floración en los ensayos de campo sembrados en <u>otoño</u>		
QN	VG	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil		1
		weak	faible	gering	débil	Valenciana Temprana (O)	3
		medium	moyenne	mittel	media		5
		strong	forte	stark	fuerte	Guimar (O)	7
		very strong	très forte	sehr stark	muy fuerte	Valenciana tardía de exportación (O)	9
32.		<u>Onion varieties only:</u> Time of beginning of bolting in <u>autumn</u> sown trials	<u>Seulement variétés d'oignon:</u> Époque du début de la montaison dans les essais semés en <u>automne</u>	<u>Nur Zwiebelsorten:</u> Zeitpunkt des Schossbeginns bei <u>Herbstaussaat</u>	<u>Solamente variedades de cebolla:</u> Época de comienzo de floración de los ensayos de campo sembrados en <u>otoño</u>		
QN	MS	early	précoce	früh	temprana		3
		medium	moyenne	mittel	media		5
		late	tardive	spät	tardía		7

33. 105 (*)	<u>Onion varieties only:</u> Time of harvest maturity for <u>autumn</u> sown trials (foliage fall-over in 80% of plants)	<u>Seulement variétés d'oignon:</u> Époque de maturité dans les essais semés en <u>automne</u> (chute du feuillage sur 80% des plantes)	<u>Nur Zwiebelsorten:</u> Zeitpunkt der Erntereife bei <u>Herbstaussaat</u> (Umfallen des Laubes bei 80 % der Pflanzen)	<u>Solamente variedades de cebolla:</u> Época de madurez de cosecha de los ensayos de campo sembrados en <u>otoño</u> (caída de hojas en el 80% de las plantas)		
QN MS	very early	très précoce	sehr früh	muy temprana		1
	early	précoce	früh	temprana	La Reine (O), Sonic (O)	3
	medium	moyenne	mittel	media	Buffalo (O), Imai Early Yellow (O), Valenciana Temprana (O)	5
	late	tardive	spät	tardía	Guimar (O), Senshyu Semi Globe Yellow (O), Shakespeare (O)	7
	very late	très tardive	sehr spät	muy tardía	Valencia tardía (O)	9
34.1 105 (*)	<u>Onion varieties only:</u> Time of harvest maturity for <u>spring</u> sown trials (as for 33)	<u>Seulement variétés d'oignon:</u> Époque de maturité dans les essais semés au <u>printemps</u> (comme pour 33)	<u>Nur Zwiebelsorten:</u> Zeitpunkt der Erntereife bei <u>Frühjahrsaussaat</u> (wie unter 33)	<u>Solamente variedades de cebolla:</u> Época de madurez de cosecha de los ensayos de campo sembrados en <u>primavera</u> (como para 33)		
QN MS	early	précoce	früh	temprana	Golden Bear (O), Buffalo (O)	3
	medium	moyenne	mittel	media	Piroska (O)	5
	late	tardive	spät	tardía	Beacon (O)	7
34.2 (*)	<u>Shallot varieties only:</u> Time of harvest maturity (as for 33)	<u>Seulement variétés d'échalote:</u> Époque de maturité (comme pour 33)	<u>Nur Schalotten-sorten:</u> Zeitpunkt der Erntereife (wie unter 33)	<u>Solamente variedades de chalota:</u> Época de madurez de cosecha (como para 33)		
QN MS	early	précoce	früh	temprana	Rox (S)	3
	medium	moyenne	mittel	media	Creation (S), Pikant (S)	5
	late	tardive	spät	tardía	Golden Gourmet (S), Santé (S)	7

35.	160.1 160.2 (+)	Time of sprouting during storage	Époque de germination pendant le stockage	Zeitpunkt des Austriebs während der Lagerung	Época de brotación durante el almacenamiento		
QN	MS	early	précoce	früh	temprana	Golden Bear (O), The Kelsae (O),	3
		medium	moyenne	mittel	media	Hygro (O), Hyper (O)	5
		late	tardive	spät	tardía	Marion (O)	7
36.	270.1 (*) 270.2	Male sterility	Stérilité mâle	Männliche Sterilität	Esterilidad masculina		
QN	VG	absent or very weakly expressed	nulle ou très faiblement exprimée	fehlend oder sehr gering ausgeprägt	ausente o muy débilmente expresada	Rijnsburger 5 (O)	1
		weakly expressed	faiblement exprimée	gering ausgeprägt	débilmente expresada	Hyduro (O), Creation (S)	2
		strongly expressed	fortement exprimée	stark ausgeprägt	fuertemente expresada	Atlas (S)	3

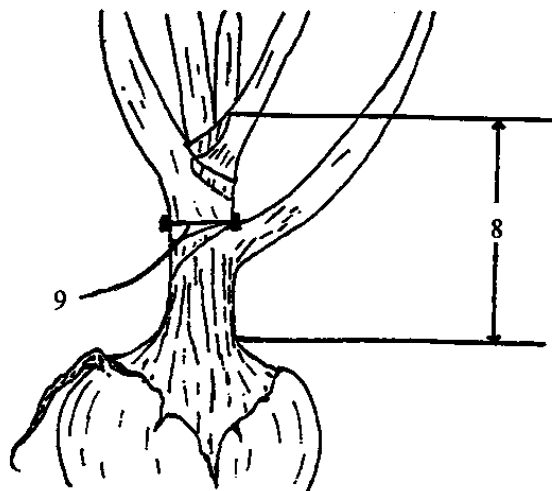
8. Explanations on the Table of Characteristics

Ad. 5: Foliage: cranking



Ad. 8: Onion varieties only: pseudostem: length (up to highest green leaf)

Ad. 9: Onion varieties only: pseudostem: diameter (at midpoint of length)



Ad. 10.1: Bulb: Tendency to split into bulblets (with dry skin around each bulblet) (seed propagated varieties only)

Ad. 10.2: Bulb: Tendency to split into bulblets (with dry skin around each bulblet) (vegetatively propagated varieties only) (including the replanted bulbs harvested from seed propagated varieties)



1
absent
or
very weak

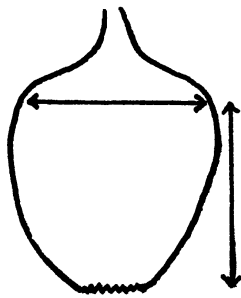


5
medium

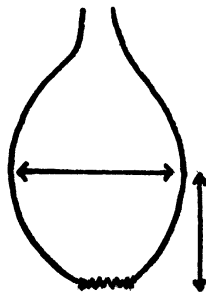


9
very strong

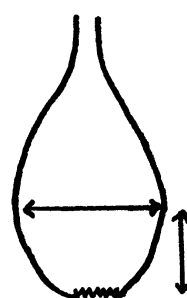
Ad. 16: Bulb/Bulblet: position of maximum diameter



1
towards apex

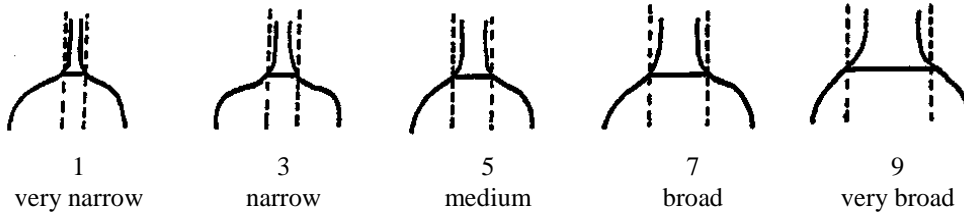


2
at middle

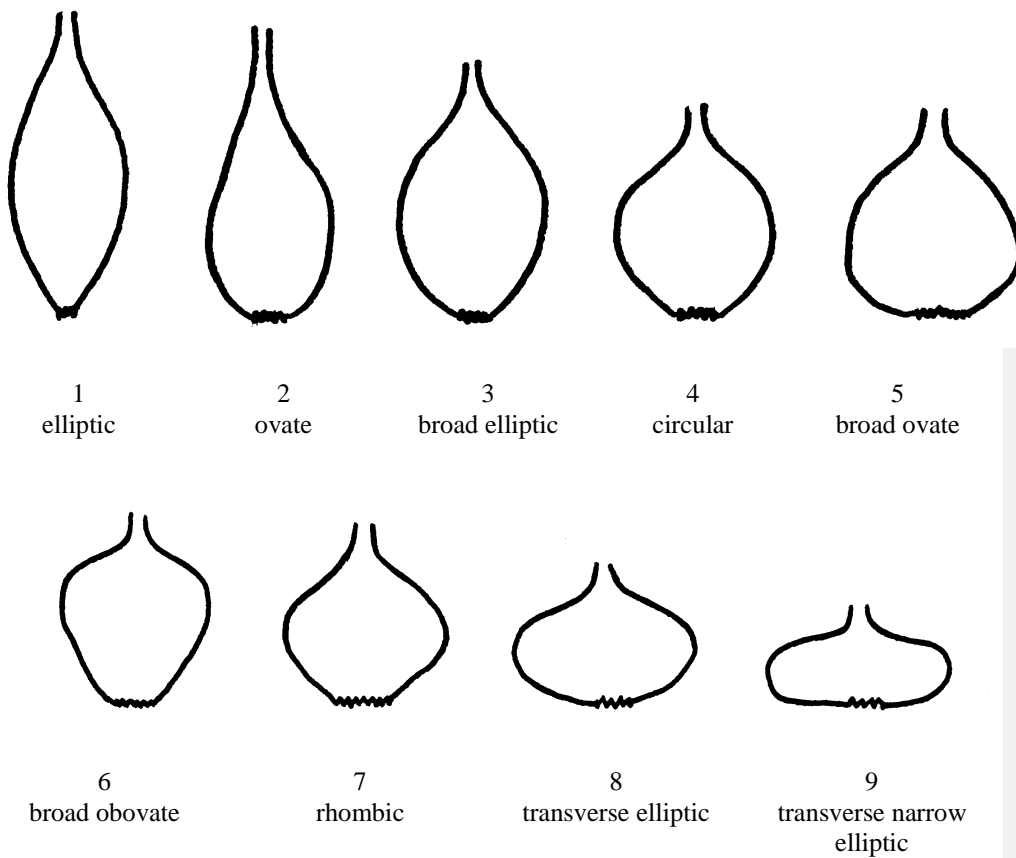


3
towards base

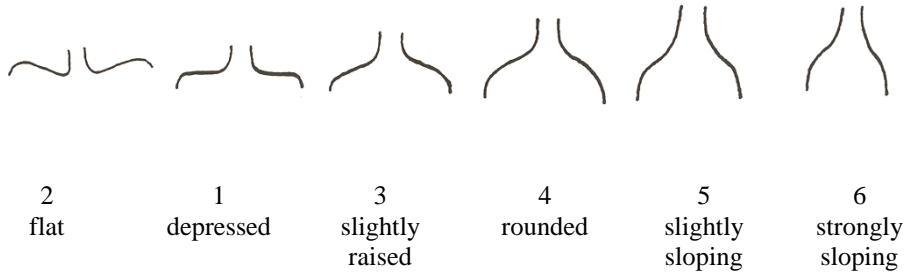
Ad. 17: Bulb/Bulblet: width of neck



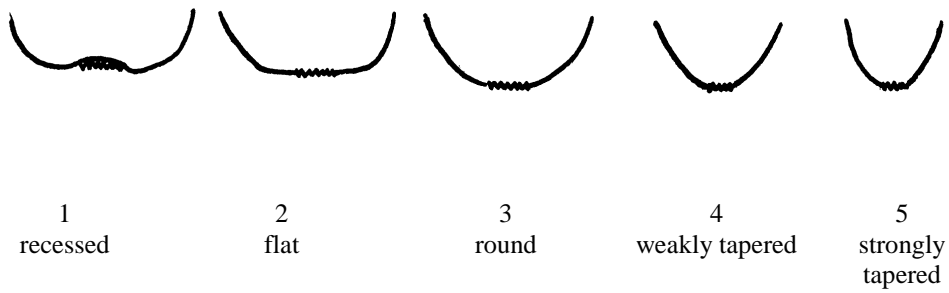
Ad. 18: Bulb/Bulblet: general shape (in longitudinal section)



Ad. 19: Onion varieties only: Bulb: shape of top (as for 18)



Ad. 20: Bulb/Bulblet: shape of base (as for 18)



Ad. 27: Bulb/Bulblet: number of growing points per kg

The number of growing points (axes) should be assessed when the bulb/bulblet has completely dried back at the end of storage, just before sprouting commences. Taking median sized bulbs, the bulb or bulblet should be cut in transverse section at $\frac{1}{3}$ of the length from the base. Each axis appears as a point, often greenish in colour surrounded by tissue rings.

This characteristic has to be measured/counted plant by plant and the standard deviation has to be established to be used in comparison to the medium of the standard deviation of the varieties of the same type.



1
very low

5
medium

9
very high

Ad. 28: Bulb/Bulblet: dry matter content

Dry matter content should be determined according to III-5 for 3 x 20 bulbs (e.g. one sample of 20 bulbs from each plot). From these bulbs the dry skin should be removed as well as the protruding part of the root disk. From these 20 bulbs a bulk sample should be prepared by cutting the bulbs into small pieces of 1-5 mm size. A representative sample should be weighed directly after cutting (we should be aware that the biodegradation of sugars and carbohydrates starts as soon as cells are damaged). The samples should be dried for 2 hours at 105°C and then the temperature should be lowered to 65°C during 22 hours. Lowering of temperature is necessary to avoid caramelisation. The remaining weight should be assessed after 24 hours. From these figures the dry matter content may be calculated.

The dry matter content could also be assessed by refractometer.

Ad. 35: Time of sprouting during storage

Care should be taken to exclude damaged bulbs. Storage temperature should be maintained between 2°C and 5°C with good ventilation which can be achieved by storing in stacking, slotted trays.

In climates which have cooler summer temperature, it is advisable to 'cure' bulbs for 2 weeks at a temperature of 30-35°C. Temperatures above 40°C should be avoided to prevent growth of *Aspergillus niger*.

A minimum of 50 bulbs are required to assess sprouting. Assessment should be carried out every 2 to 4 weeks.

Code for the Growth Stages 1: Seed to Bulb

Growth stage	General description
<u>Vegetative Cycle</u>	
00	Dry Seed
0	Germination
<u>Seedling growth</u>	
10	Emerged seedling at 'loop' stage
15	Seedling with testa above ground and still attached to cotyledon
20	Emergence of first true leaf
25	Second true leaf stage
30	Third leaf stage
35	Fourth leaf stage
40	Fifth leaf stage
<u>Plant growth</u>	
45	Sixth leaf stage
50	Seventh leaf stage - first leaf senescing
55	Eighth leaf stage
60	
65	Tenth leaf stage; second and third leaves senescing; early bulb development
70	
75	
80	
85	
90	
95	
100	Full expansion of leaves achieved; continued swelling of bulb
105	Beginning of foliage fall-over, weakening of false stem turgidity
115	Leaves dry off; bulb size continues to increase; darkening of bulb scales
120	
125	
130	
135	Bulb at harvestable maturity
140	
145	
150	Complete die-back of foliage; bulb top seals over for dormancy

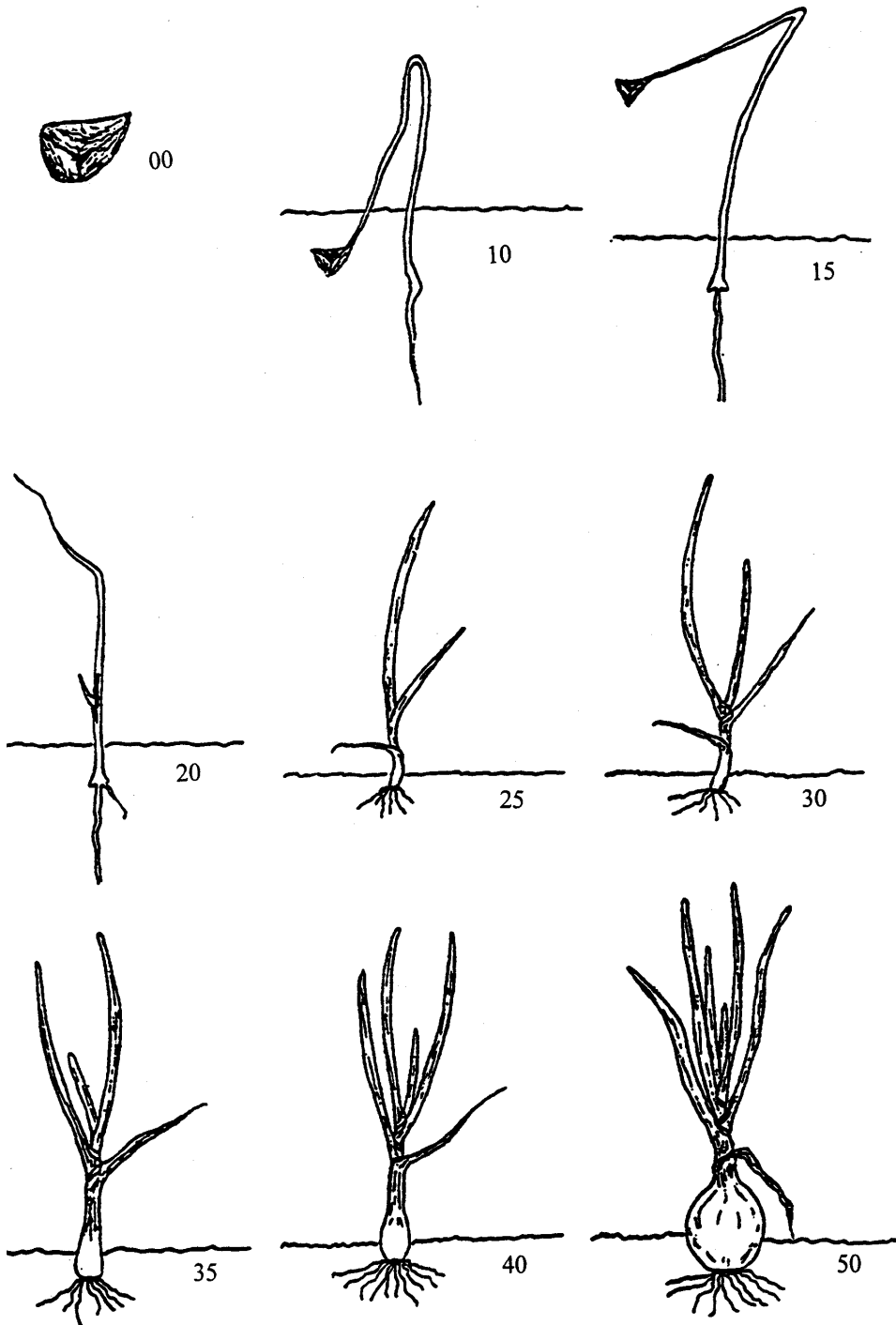
Code for the Growth Stages 2: Bulb to Seed

Growth Stage	General Description
<u>Reproductive Cycle</u>	
160.1	Start of sprouting in store - swelling of root initials or emergence of shoot at top of bulb
170.1	
180.1	Sprouted bulbs with emerging leaves
190.1	
200.1	Splitting of outer skin
210.1	Emergence of scape and undeveloped spathe
220.1	Scape elongation and swelling of middle
230.1	
240.1	Swelling of spathe
250.1	Splitting of spathe
260.1	Enlargement of umbel
270.1	Opening of florets (where fertile)
280.1	Pollination of florets
290.1	Seed set - swelling of pollinated ovaries
300.1	
310.1	
320.1	Ripe seed in umbels
330.1	
340.1	
350.1	Dry seed

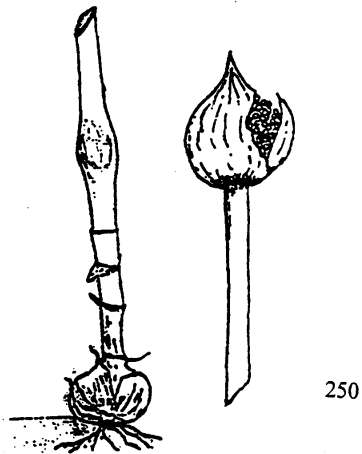
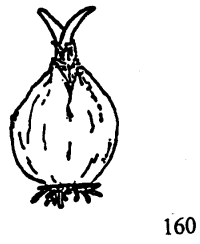
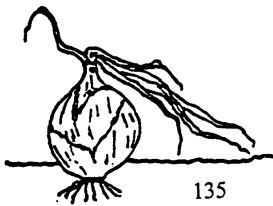
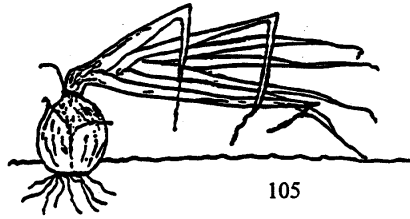
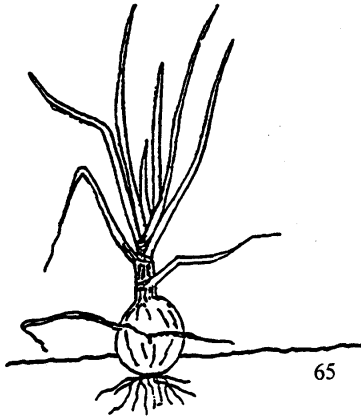
Code for the Growth Stages 3: Bulb to Bulblet

Growth Stage	General Description
150	Dry bulb with complete foliage die-back
160.2	
170.2	Bulb shape becoming less rounded
180.2	
190.2	Bulb shape becoming irregular with development of small splits in the dry outer skin
200.2	
210.2	More than one growing point emerging from the top of the bulb
220.2	
230.2	Long splits developing in the outer skin of the bulb and differentiation of bulb into bulblets
240.2	
250.2	
260.2	
270.2	Separation of bulblets from parent bulb except at base. Bulblets separated from each other by a dry outer skin
280.2	
290.2	Complete separation of bulblets from 'parent bulb'
300.2	Development of many leaves

Code for the Growth Stages 1 and 2: Illustrations



Code for the Growth Stages 1 and 2: Illustrations



9. Literature

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Reieman, G. H., 1931: Genetic Factors for Pigmentation in the Onion and their Relation to Disease Resistance. *Journal of Agricultural Research* Vol. 42, No. 5, 251-278.

Scully, N. J., Parker, M. W. and Borthwick, H. A., 1945: Interaction of Nitrogen Nutrition and Photo-period as Expressed in Bulbing and Flower Stalk Development of Onion. *Botanical Gazette* Vol. 107, 52-61.

Schwartz, H. F., and Mohan S. K., 1995 (Editors): *Compendium of Onion and Garlic Diseases*. The American Phytopathological Society, (ISBN: 0-89054-170-1).

Wright, C. J. and Sobeigh, W. Y., 1986: The Photo-periodic Regulation of Bulbing in Onions (*Allium cepa* L.). Effects of Irradiance." *Journal of Horticultural Science* Vol. 61, Part 3, 311-335.

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="Allium cepa L.,
Allium oschaninii O. Fedtsch."/>	
1.2 Common name	<input type="text" value="(a) Onion and Echallion
(b) Shallot"/>	
1.1.1 Botanical name	[species 1]	
1.1.2 Common name	[species 1]	[]
1.2.1 Botanical name	[species 2]	
1.2.2 Common name	[species 2]	[]
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:
<p>3. Proposed denomination and breeder's reference</p> <p>Proposed denomination (if available) <input data-bbox="515 461 1114 504" type="text"/></p> <p>Breeder's reference <input data-bbox="515 564 1114 607" type="text"/></p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>#4. Information on the breeding scheme and propagation of the variety</p> <p>4.1 Breeding scheme</p> <p>(a) <i>Alternative 1</i></p> <p>Variety resulting from:</p> <p>4.1.1 Crossing</p> <p style="margin-left: 40px;">(a) controlled cross [] (please state parent varieties)</p> <p style="margin-left: 40px;">(b) partially known cross [] (please state known parent variety(ies))</p> <p style="margin-left: 40px;">(c) unknown cross []</p> <p>4.1.2 Mutation [] (please state parent variety)</p> <p>4.1.3 Discovery and development [] (please state where and when discovered and how developed)</p> <p>4.1.4 Other [] (please provide details)</p> <div style="border: 1px solid black; height: 30px; width: 300px; margin-left: 40px; margin-top: 10px;"></div>		
<p>4. Information on origin, maintenance and reproduction of the variety</p> <p>4.1 Variety type</p> <p>(a) open-pollinated []</p> <p>(b) single hybrid []</p> <p>(c) three-way hybrid []</p> <p>(d) clone []</p> <p>(e) other type (indicate what type) []</p> <p>.....</p> <p>4.2 Other information</p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>(b) <i>Alternative 2</i></p> <p>Variety resulting from:</p> <p>4.1.1 Crossing</p> <p>(a) controlled cross [] (please state parent varieties)</p> <p>(b) partially known cross [] (please state known parent variety(ies))</p> <p>(c) unknown cross []</p> <p>4.1.2 Discovery and development [] (please state where and when discovered and how developed)</p> <p>4.1.3 Other [] (please provide details)</p> <div data-bbox="363 1010 971 1088" style="border: 1px solid black; height: 35px; width: 381px; margin: 10px auto;"></div>		

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:
4.2 Method of propagating the variety		
The examples below indicate how this section can be formatted and some appropriate terms which can be used:		
<i>Example 1</i>		
4.2.1 Seed-propagated varieties		
(a) Self-pollination		[]
(b) Cross-pollination		[]
(i) population		[]
(ii) synthetic variety		[]
(c) Hybrid		[]
{...see GN 32 for example...}		
(d) Other		[]
(please provide details)		
<div style="border: 1px solid black; height: 30px; width: 100%;"></div>		
4.2.2 Vegetatively propagated varieties		
{...see Example 2...}		[...]
4.2.3 Other		
(please provide details)		[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p><i>Example 2</i></p> <p>4.2.1 Vegetative propagation</p> <p>(a) cuttings []</p> <p>(b) <i>in vitro</i> propagation []</p> <p>(c) other (state method) []</p> <p>4.2.2 Seed []</p> <p>4.2.3 Other [] (please provide details)</p> <div data-bbox="347 846 970 913" style="border: 1px solid black; height: 30px; width: 390px; margin-left: 100px;"></div>		
<p>GN 32</p> <p>“In the case of hybrid varieties the production scheme for the hybrid should be provided on a separate sheet. This should provide details of all the parent lines required for propagating the hybrid e.g.</p> <p>“<i>Single Hybrid</i></p> <p>“(… female parent …) x (… male parent …)</p> <p>“<i>Three-Way Hybrid</i></p> <p>“(… female line …) x (… male line …)</p> <p>“=> single hybrid used as female parent x (… male parent …)</p> <p>“and should identify in particular:</p> <p>“(a) any male sterile lines</p> <p>“(b) maintenance system of male sterile lines.”</p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>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).</p>		
Characteristics	Example Varieties	Note
<p>5.1 Plant: number of leaves per pseudostem (1)</p>		
few	SY300 (O)	3[]
medium	The Kelsae (O)	5[]
many	Yellow sweet spanish (O)	7[]
<p>5.2 Foliage: green color (4)</p>		
light	Guimar (O), Yellow sweet spanish (O), Tropix (S)	3[]
medium	Caribo (O), Texas Grano 502 (O), Golden Gourmet (S)	5[]
dark	Hikeeper (O), La Reine (O), Santé (S)	7[]
<p>5.3.1 <u>Seed propagated varieties only</u> : Bulb: Tendency to split into bulblets (10.1) (with dry skin around each bulblet)</p>		
absent or very weak	Cuisse de Poulet du Poitou (O), Lagos	1
weak		3
medium	Mirage (S)	5
strong	Bonilla (S), Création (S), Longor (S), Mikor (S)	7
very strong	Delvad (S), Rox (S), Tropix (S)	9

Characteristics	Example Varieties	Note
5.3.2 <u>Vegetatively propagated varieties only (including the re-planted bulbs</u> (10.2) <u>harvested from seed propagated varieties): Bulb: Tendency to split into</u> <u>bulblets (with dry skin around each bulblet)</u>		
absent or very weak	Cuisse de Poulet du Poitou (O), Lagos	1[]
weak		3[]
medium	Mirage (S)	5[]
strong	Bonilla (S), Création (S), Longor (S), Mikor (S)	7[]
very strong	Delvad (S), Rox (S), Tropix (S)	9[]
5.4.1 <u>Onion varieties only: Bulb: size</u> (12.1)		
small		3[]
medium		5[]
large	The Kelsae (O)	7[]
5.4.2 <u>Shallot varieties grown from bulblets only: Bulblet: size</u> (12.2)		
small	Atlas (S)	3[]
medium	Spring Field (S), Topper (S)	5[]
large	Delicato (S), Santé (S)	7[]

Characteristics	Example Varieties	Note
5.5 Bulb/Bulblet: general shape (in longitudinal section) (18)		
elliptic	Owa (O), Longor (S)	1[]
ovate	Birnenförmige (O), Rossa lunga di Firenze (O)	2[]
broad elliptic	Alisa Craig (O), Beacon (O), Hiball (O)	3[]
circular	Pikant (S)	4[]
broad ovate	Hysam (O)	5[]
broad obovate	Lilia (O), Texas grano 502 (O)	6[]
rhombic	Zittauer gelbe (O), Matador (S)	7[]
transverse elliptic	Sturka (O), Stuttgarter Riesen (O), Atlantic (S), Golden Gourmet (S)	8[]
transverse narrow elliptic	Brunswijker (O), De Moissac (O), Paille des vertus (O), Pompei (O)	9[]
5.6 Bulb/Bulblet: basic color of dry skin (23)		
white	La Reine (O)	1[]
grey	Griselle (S)	2[]
green		3[]
yellow	Zittauer gelbe (O), Creation (S), Golden Gourmet (S), Topper (S)	4[]
brown	Valenciana Temprana (O), Delicato (S)	5[]
pink	Colorada de Figueras (O)	6[]
red	Brunswijker (O), Atlas (S) Red Baron (O)	7[]

Characteristics	Example Varieties	Note
5.7 Bulb/Bulblet: hue of color of dry skin (in addition to basic color) (25)		
absent	Pompei (O)	1[]
greyish		2[]
greenish		3[]
yellowish	Topper (S)	4[]
brownish	Santé (S)	5[]
pinkish	Delicato (S)	6[]
reddish	Southport Red Globe (O), Ambition (S), Mikor (S), Pikant (S)	7[]
purplish		8[]

Characteristics	Example Varieties	Note
5.8 <u>Bulb/Bulblet: number of growing points per kg</u> (27)		
very low	Barletta (O), Pompei (O)	1[]
low	Cuisse de Poulet du Poitou (O), Figaro (O), Owa (O)	3[]
medium	Longor (S), Mirage (S), Prisma (S)	5[]
high	Bonilla (S), Création (S), Mikor (S)	7[]
very high	Griselle (S), Rox (S), Tropix (S)	9[]
5.8 <u>Onion varieties only: Time of harvest maturity for autumn</u> (33) sown trials (foliage fall-over in 80% of plants)		
very early		1[]
early	La Reine (O), Sonic (O)	3[]
medium	Buffalo (O), Imai Early Yellow (O), Valenciana Temprana (O)	5[]
late	Guimar (O), Senshyu Semi Globe Yellow (O), Shakespeare (O)	7[]
very late	Valencia tardía (O)	9[]
5.9.1 <u>Onion varieties only: Time of harvest maturity for spring</u> (34.1) sown trials (foliage fall-over in 80% of plants)		
early	Golden Bear (O), Makoi (O)	3[]
medium	Piroska (O)	5[]
late	Beacon (O)	7[]

Characteristics	Example Varieties	Note
5.9.2 <u>Shallot varieties only:</u> Time of harvest maturity (foliage fall- (34.2) over in 80% of plants)		
early	Rox (S)	3[]
medium	Creation (S), Pikant (S)	5[]
late	Golden Gourmet (S), Santé (S)	7[]
5.10 Male sterility (36)		
absent or very weakly expressed	Rijnsburger 5 (O)	1[]
weakly expressed	Hyduro (O), Creation (S)	2[]
strongly expressed	Atlas (S)	3[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:																									
<p>6. Similar varieties and differences from these varieties</p> <p><i>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.</i></p> <table border="1" data-bbox="156 613 1200 786"> <thead> <tr> <th data-bbox="156 613 427 734">Denomination(s) of variety(ies) similar to your candidate variety</th> <th data-bbox="427 613 683 734">Characteristic(s) in which your candidate variety differs from the similar variety(ies)</th> <th data-bbox="683 613 954 734">Describe the expression of the characteristic(s) for the similar variety(ies)</th> <th data-bbox="954 613 1200 734">Describe the expression of the characteristic(s) for your candidate variety</th> </tr> </thead> <tbody> <tr> <td data-bbox="156 734 427 786">GN 33 Example</td> <td data-bbox="427 734 683 786">[e.g. Flower color]</td> <td data-bbox="683 734 954 786">[e.g. orange]</td> <td data-bbox="954 734 1200 786">[e.g. orange red]</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td colspan="4" data-bbox="156 965 1200 1189"> <p>Comments:</p> </td> </tr> <tr> <td colspan="4" data-bbox="156 1189 1200 1402"> <p>7. Additional information which may help to distinguish the variety</p> <p>7.1 Resistance to pests and diseases</p> <p>7.2 Special conditions for testing the variety</p> </td> </tr> </tbody> </table>				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	GN 33 Example	[e.g. Flower color]	[e.g. orange]	[e.g. orange red]									<p>Comments:</p>				<p>7. Additional information which may help to distinguish the variety</p> <p>7.1 Resistance to pests and diseases</p> <p>7.2 Special conditions for testing the variety</p>			
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																								
GN 33 Example	[e.g. Flower color]	[e.g. orange]	[e.g. orange red]																								
<p>Comments:</p>																											
<p>7. Additional information which may help to distinguish the variety</p> <p>7.1 Resistance to pests and diseases</p> <p>7.2 Special conditions for testing the variety</p>																											

Comment [Note 1]: Page: 49
 Drafters of Test Guidelines should provide a suitable example for the individual Test Guidelines concerning e.g.:

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>7.2.1 Day length conditions which favor full bulb development</p> <p>(a) short day []</p> <p>(b) long day []</p> <p>7.2.2 Dry matter content</p> <p>(a) low 1 []</p> <p>(b) medium 3 []</p> <p>(c) high 5 []</p> <p>7.2.3 Suitability for storage</p> <p>(a) none 1 []</p> <p>(b) short term 2 []</p> <p>(c) long term 3 []</p> <p>7.3 Other information</p>		
<p>8. Authorization for release</p> <p>(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?</p> <p>Yes [] No []</p> <p>(b) Has such authorization been obtained?</p> <p>Yes [] No []</p> <p>If the answer to (b) is yes, please attach a copy of the authorization.</p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:												
<p>9. Information on plant material to be examined or submitted for examination.</p> <p>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.</p> <p>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:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">(a) Microorganisms (e.g. virus, bacteria, phytoplasma)</td> <td style="width: 20%;">Yes []</td> <td style="width: 20%;">No []</td> </tr> <tr> <td>(b) Chemical treatment (e.g. growth retardant, pesticide)</td> <td>Yes []</td> <td>No []</td> </tr> <tr> <td>(c) Tissue culture</td> <td>Yes []</td> <td>No []</td> </tr> <tr> <td>(d) Other factors</td> <td>Yes []</td> <td>No []</td> </tr> </table> <p>Please provide details for where you have indicated “yes”.</p> <p>.....</p> <p>ASW 17</p> <p>“9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?</p> <p style="padding-left: 40px;">Yes []</p> <p style="padding-left: 40px;">(please provide details as specified by the Authority)</p> <p style="padding-left: 40px;">No []”</p>			(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 []
(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 []												
<p>10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:</p> <p>Applicant’s name <input style="width: 450px; height: 20px;" type="text"/></p> <p>Signature <input style="width: 280px; height: 20px;" type="text"/> Date <input style="width: 120px; height: 20px;" type="text"/></p>														

[End of document]