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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
 GENEVA

DRAFT

CITRUS L. – Group 1

MANDARIN

- *Citrus clementina* Hort. ex Tan. (Clementine)
- *Citrus deliciosa* Ten. (Mediterranean Mandarin)
- *Citrus reticulata* Blanco (Tangerine)
- *Citrus unshiu* Marc. (Satsuma)
- Mandarin x (Grapefruit or Pummelo) (Tangelo)
- Mandarin x Orange (Tangor)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

<i>Latin</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Citrus clementina</i> Hort. ex Tan.	Clementine	Clémentinier	Clementine	Clementina
<i>Citrus deliciosa</i> Ten.	Mediterranean Mandarin	Mandarinier	Mandarine	Mandarina común
<i>Citrus reticulata</i> Blanco	Tangerine	Tangerinier	Tangerine	Tangerino
<i>Citrus unshiu</i> Marc.	Satsuma	Satsuma	Satsuma	Mandarina Ponkan

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, “General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants” (hereinafter referred to as the “General Introduction”) and its associated “TGP” documents.

Other associated documents: *CITRUS* L. – GROUP 2: TG/ORANG**
 CITRUS L. – GROUP 3: TG/LEM-LIM**
 CITRUS L. – GROUP 4: TG/GRA-PUM**
 CITRUS L. – GROUP 5: TG/PONCI**

* 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 Web Site (<http://www.upov.int>), for the latest information.]

** Final relevant TG’s reference to be inserted.

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1. Subject of these Guidelines

1.1 The following Test Guidelines have been developed from the standard Citrus Test Guidelines template. In particular, the Table of Characteristics has been selected from the overall set of citrus characteristics presented in the Annex.

1.2 These Test Guidelines apply to all vegetatively propagated varieties for fruit production and rootstock varieties of the following species of the group mandarin of the genus *Citrus* L. (Rutaceae), and their hybrids:

Group 1: MANDARIN AND ITS HYBRIDS

Citrus clementina Hort. ex Tan. (Clementine) – CLE

Citrus deliciosa Ten. (Mediterranean Mandarin) – MMN

Citrus reticulata Blanco (Tangerine) – PMN

Citrus unshiu Marc. (Satsuma) – SAT

Mandarin x (Grapefruit or Pummelo) (Tangelo) – TNL

Mandarin x Orange (Tangor) – TNR

Other Mandarin Hybrids – HMA

1.3 In the case of hybrids between species within the genus *Citrus* L., the Test Guidelines to be used should be those for which the overall appearance of fruit is most suited. However, if the variety cannot be clearly distinguished from all varieties covered by other Test Guidelines, those other Test Guidelines should also be used to examine the variety.

1.4 In the case of hybrids between species within the genus *Citrus* L., where the variety is clearly distinguishable from all other varieties covered by other Test Guidelines, it may still be necessary to use additional citrus characteristics to examine the variety. In these circumstances it is appropriate to use characteristics from the Test Guidelines covering the parent species, or to select characteristics from the overall set of citrus characteristics presented in the Annex.

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 bud sticks of 6 to 10 mm in diameter (one year old), each cut just behind a typical fruit or, if required by the competent authorities, one-year-old grafted trees. In the case of rootstock varieties, rooted cuttings or polyembryonic seeds may be required in addition.

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

10 bud sticks sufficient to establish 10 plants or,
if required by the competent authorities,
10 one-year-old grafted trees.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease. It should preferably not be obtained from *in vitro* propagation. If it has been produced by *in vitro* propagation this fact must be stated by the applicant.

2.5 The plant material must 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 *Duration of Tests*

The minimum duration of tests should normally be two independent growing cycles and must be sufficient for the trees under test to bear a satisfactory crop of fruit in at least two growing periods.

3.2 *Testing Place*

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be seen at that place, the variety may be tested at an additional place.

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. Where necessary for the examination of fruit varieties, a standard specified rootstock should be used for each group.

3.3.2 All observations should be made on plants of the same age not less than 3 years old. The age of the plants should be specified.

3.3.3 Information on examining particular characteristics:

3.3.3.1 The table of characteristics provides notes which indicate the recommendations for observing characteristics as follows:

- a Growth habit: The observation on the growth habit of the tree should be made immediately after harvest.
- b Young leaf: All observations on the young leaf should be made on actively growing spring flush. [Not applicable for Groups 1 (Mandarin), and 2 (Oranges).]
- c Leaf: All observations on the leaf should be made on fully developed leaves on the middle third of the youngest spring flush branch sections not showing signs of active growth.

- d** Flower: Unless otherwise indicated, all observations on the flower bud and the flower should be made on the terminal flower bud and flower, at the time of full flowering of the variety.

All observations on the open flower should be made on the first day of opening.

- e** Flower bud: All observations on the flower bud should be made when the petal tips are just visible. [Not applicable for Groups 1 (Mandarin), 2 (Oranges) and 5 (Trifoliate Orange).]

- f** Fruit: Unless otherwise indicated, all observations on the fruit should be made on the main fruiting of the year. All observations on the fruit should be made at the stage of optimum ripeness. This stage should be determined by the ratio: total soluble solids/acid content of juice. The fruit should be tested weekly and harvested as soon as this stage has been reached.

All fruits for observation should be taken from the periphery of the tree and fruit misformed as a result of clustering should not be sampled.

- g** Fruit surface and fruit rind: All observations on the fruit surface and on the fruit rind should be made at the middle, between the base and apex of the fruit.

The observation on the oiliness of the fruit rind should be made, by peeling the fruit, within 3 to 7 days after harvesting.

- h** Fruit flesh: All observations on the flesh of the fruit should be made on a cross section through the middle of the fruit.

- i** Seed: All observations on the seed should be made on the fresh seed.

3.4 *Test Design*

3.4.1 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.

3.4.2 Each test should be designed to result in a total of, at least, 5 plants.

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

Unless otherwise indicated, all observations determined by measuring or counting should be made on 5 plants or 2 parts taken from each of 5 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 minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.

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:

For the assessment of uniformity a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 5 plants no 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.

4.3.2 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 is 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) Fruit: length (characteristic 28)
- (b) Fruit: diameter (characteristic 29)
- (c) Fruit: presence of neck (characteristic 36)
- (d) Fruit surface: predominant color (characteristic 61)
- (e) Time of maturity of fruit for consumption (characteristic 108)

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. Each example variety is followed by the abbreviation of its group in brackets.

6.5 *Legend*

- (+) See Explanations on the Table of Characteristics in Chapter 8.
- (*) Asterisked characteristic – see section 6.1.2
- QL Qualitative characteristic – see section 6.3
- QN Quantitative characteristic – see section 6.3
- PQ Pseudo-Qualitative characteristic – see section 6.3
- c#. Corresponding number of characteristic in the citrus overall table of characteristics
- a** to **i** Method of Examination – see section 3.3.3.1

6.6 *Abbreviations*

- CLE: *Citrus clementina* Hort. ex Tan. (Clementine)
- MMN: *Citrus deliciosa* Ten. (Mediterranean Mandarin)
- PMN: *Citrus reticulata* Blanco (Tangerine)
- SAT: *Citrus unshiu* Marc. (Satsuma)
- TNL: Mandarin x (Grapefruit or Pummelo) (Tangelo)
- TNR: Mandarin x Orange (Tangor)
- HMA: Other Mandarin Hybrids

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

MoE ^o	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	Ploidy	Ploïdie	Ploidie	Ploidía		
QL	diploid	diploïde	diploid	diploide		2
	triploid	triploïde	tripoid	triploide		3
c1.	tetraploid	tetraploïde	tetraploid	tetraploide		4
2. (*)	Tree: growth habit	Arbre: port	Baum: Wuchstyp	Árbol: porte		
PQ a	upright	droit	aufrecht	erguido	Marisol (CLE)	1
	spreading	étalé	breitbuschig	abierto	Clemenules (CLE)	2
c2.	drooping	retombant	hängend	colgante	Owari (SAT)	3
3.	Tree: density of spines	Arbre: densité des épines	Baum: Dichte der Stacheln	Árbol: densidad de las espinas		
QN	absent or sparse	absentes ou éparées	fehlend oder locker	ausente o laxa	Owari (SAT)	1
	intermediate	intermédiaires	mittel	media	Marisol (CLE)	2
c3.	dense	denses	dicht	densa		3
4.	Tree: length of spines	Arbre: longueur des épines	Baum: Länge der Stacheln	Árbol: longitud de las espinas		
QN	short	courtes	kurz	cortas	Marisol (CLE)	3
	medium	moyennes	mittel	medias		5
c4.	long	longues	lang	largas		7
5.	Leaf blade: length (apical leaflet in case of compound leaf)	Limbe: longueur (foliole apicale en cas de feuille composée)	Blattspreite: Länge (apikales Teilblatt bei zusammengesetztem Blatt)	Limbo: longitud (foliolo atípico en caso de hoja compuesta)		
QN c	short	court	kurz	corto	Común (MMN)	3
	medium	moyen	mittel	medio	Nova (HMA)	5
c10.	long	long	lang	largo	Kara (HMA)	7

^o MoE = Method of Examination/Méthode d'examen/Durchführung der Prüfung/Método de examen

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.		Leaf blade: width (as for 5)	Limbe: largeur (comme pour 5)	Blattspreite: Breite (wie für 5)	Limbo: anchura (como para 5)		
QN	c	narrow	étroit	schmal	estrecho	Común (MMN)	3
		medium	moyen	mittel	medio	Clemenules (CLE)	5
c11.		broad	large	breit	ancho	Page (HMA)	7
7.		Leaf blade: ratio length/width (as for 5)	Limbe: rapport longueur/largeur (comme pour 5)	Blattspreite: Verhältnis Länge/ Breite (wie für 5)	Limbo: relación longitud/anchura (como para 5)		
QN	c	small	faible	klein	pequeño	Orlando (TNL)	3
		medium	moyen	mittel	medio	Fino (CLE)	5
c12.		large	élevé	groß	grande	Clemenules (CLE)	7
8.		Leaf blade: shape in cross section (as for 5)	Limbe: forme en section transversale (comme pour 5)	Blattspreite: Form im Querschnitt (wie für 5)	Limbo: forma en sección transversal (como para 5)		
QN	c	straight or weakly concave	droit ou légèrement concave	gerade oder leicht konkav	recto o ligeramente cóncavo	Owari (SAT)	1
		intermediate	intermédiaire	mittel	intermedio	Minneola (TNL)	2
c17.		strongly concave	fortement concave	stark konkav	fuertemente cóncavo		3
9.		Leaf blade: twisting	Limbe: torsion	Blattspreite: Drehung	Limbo: torsión		
QN	c	absent or weak	absente ou faible	fehlend oder gering	ausente o débil		1
		intermediate	intermédiaire	mittel	media		2
c18.		strong	forte	stark	fuerte		3
10.		Leaf blade: blistering	Limbe: cloûre	Blattspreite: Blasigkeit	Limbo: abullonado o ampollado		
QN	c	absent or weak	absente ou faible	fehlend oder gering	ausente o débil		1
		intermediate	intermédiaire	mittel	medio		2
c19.		strong	forte	stark	fuerte		3

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
11.		Leaf blade: intensity of green color	Limbe: intensité de la couleur verte	Blattspreite: Intensität der Grünfärbung	Limbo: intensidad del color verde		
QN	c	light	claire	hell	claro	Nova (HMA)	3
		medium	moyenne	mittel	medio	Owari (SAT)	5
c20.		dark	foncée	dunkel	oscuro	Oroval (CLE)	7
12.		Leaf blade: undulation of margin	Limbe: ondulation du bord	Blattspreite: Randwellung	Limbo: ondulación del borde		
QN	c	absent or weak	absente ou faible	fehlend oder gering	ausente o débil		1
		intermediate	intermédiaire	mittel	media		2
c22.		strong	forte	stark	fuerte		3
13.		Leaf blade: incisions of margin	Limbe: incisions du bord	Blattspreite: Randeinschnitte	Limbo: incisiones del borde		
PQ	c	absent	absentes	fehlend	ausentes		1
		crenate	crénelées	gekerbt	crenadas		2
c23.		dentate	dentelées	gezähnt	dentadas		3
14.		Leaf blade: shape of apex	Limbe: forme de l'extrémité	Blattspreite: Form der Spitze	Limbo: forma del ápice		
(+)							
PQ	c	acuminate	acuminée	zugespitzt	acuminado		1
		acute	pointue	spitz	agudo	Clemenules (CLE)	2
		obtuse	obtuse	stumpf	obtuso	Minneola (TNL)	3
c24.		rounded	arrondie	abgerundet	redondeado		4
15.		Leaf blade: emargination at tip	Limbe: échancrure à l'extrémité	Blattspreite: Randeinschnitte an der Spitze	Limbo: emarginado en la parte superior		
(+)							
QL	c	absent	absente	fehlend	ausente		1
c25.		present	présente	vorhanden	presente		9

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.		Petiole: length	Pétiole: longueur	Blattstiel: Länge	Pecíolo: longitud		
QN	c	short	court	kurz	corto	Clemenules (CLE)	3
		medium	moyen	mittel	medio	Fortune (HMA)	5
c26.		long	long	lang	largo	Minneola (TNL)	7
17.		Petiole: presence of wings	Pétiole: présence d'ailes	Blattstiel: Vorhandensein von Flügeln	Pecíolo: presencia de alas		
QL	c	absent	absentes	fehlend	ausentes	Clemenules	1
c27.		present	présentes	vorhanden	presentes	Owari (SAT)	9
18.		<u>Varieties with petiole wings present only; Petiole: width of wings</u>	<u>Seulement les variétés présentant des ailes au pétiole; Pétiole: largeur des ailes</u>	<u>Nur Sorten mit vorhandenen Flügel am Blattstiel; Blattstiel: Breite der Flügel</u>	<u>Sólo variedades con alas presentes en el pecíolo; Pecíolo: anchura de las alas</u>		
QN	c	narrow	étroites	schmal	estrechas	Owari (SAT)	3
		medium	moyennes	mittel	medias		5
c28.		broad	larges	breit	anchas		7
19.		Flower: diameter of calyx	Fleur: diamètre du calice	Blüte: Durchmesser des Kelchs	Flor: diámetro del cáliz		
QN	d	small	petit	klein	pequeño		3
		medium	moyen	mittel	medio		5
c31.		large	grand	groß	grande		7
20.		Flower: length of petal	Fleur: longueur du pétale	Blüte: Länge des Blütenblattes	Flor: longitud del pétalo		
QN	d	short	court	kurz	corto	Fino (CLE)	3
		medium	moyen	mittel	medio	Ellendale (TNR)	5
c32.		long	long	lang	largo	Owari (SAT)	7
21.		Flower: width of petal	Fleur: largeur du pétale	Blüte: Breite des Blütenblattes	Flor: anchura del pétalo		
QN	d	narrow	étroit	schmal	estrecho	Clemenules (CLE)	3
		medium	moyen	mittel	medio	Ellendale (TNR)	5
c33.		broad	large	breit	ancho	Owari (SAT)	7

22.	Flower: ratio length/width of petal	Fleur: rapport longueur/largeur du pétale	Blüte: Verhältnis Länge/Breite des Blütenblattes	Flor: relación longitud/anchura del pétalo		
QN	d small	faible	klein	pequeño	Wilking (HMA)	3
	medium	moyen	mittel	medio	Fino (CLE)	5
c34.	large	élevé	groß	grande	Page (HMA)	7
23.	Flower: length of stamens	Fleur: longueur des étamines	Blüte: Länge der Staubfäden	Flor: longitud de los estambres		
QN	d short	courtes	kurz	cortos	Encore (HMA)	3
	medium	moyennes	mittel	medios	Owari (SAT)	5
c35.	long	longues	lang	largos	Page (HMA)	7
24.	Anther: color	Anthère: couleur	Anthere: Farbe	Antera: color		
PQ	d white	blanc	weiß	blanco		1
	light yellow	jaune clair	hellgelb	amarillo claro	Owari (SAT)	2
c38.	medium yellow	jaune moyen	mittelgelb	amarillo medio	Fino (CLE)	3
25.	Anther: viable pollen	Anthère: pollen viable	Anthere: keimfähiger Pollen	Antera: polen viable		
QL	d absent	absent	fehlend	ausente	Owari (SAT)	1
c39.	present	présent	vorhanden	presente		9
26.	Style: length	Style: longueur	Griffel: Länge	Estilo: longitud		
QN	d short	court	kurz	corto	Pixie (HMA)	3
	medium	moyen	mittel	medio	Fino (CLE)	5
c40.	long	long	lang	largo	Owari (SAT)	7
27.	Infructescence: clustering of fruits	Fructification: formation de grappes	Fruchtstand: Früchte in Büscheln	Infrutescencia: enracimado de los frutos		
QL	absent	absente	fehlend	ausente		1
c43.	present	présente	vorhanden	presente		9
28. (*)	Fruit: length	Fruit: longueur	Frucht: Länge	Fruto: longitud		
QN	f short	court	kurz	corto	Wilking (HMA)	3
	medium	moyen	mittel	medio	Clemenules (CLE)	5
c44.	long	long	lang	largo	Minneola (TNL)	7

29. (*)	Fruit: diameter	Fruit: diamètre	Frucht: Durchmesser	Fruto: diámetro		
QN	f small	petit	klein	pequeño	Fino (CLE)	3
	medium	moyen	mittel	medio	Clemenules (CLE)	5
c45.	large	grand	groß	grande	Ortanique (TNR)	7
30. (*)	Fruit: ratio length/diameter	Fruit: rapport longueur/diamètre	Frucht: Verhältnis Länge/Durchmesser	Fruto: relación longitud/diámetro		
QN	f small	faible	klein	pequeño	Encore (HMA)	3
	medium	moyen	mittel	medio	Clemenules (CLE)	5
c46.	large	élevé	groß	grande	Minneola (TNL)	7
31. (*)	Fruit: position of broadest part	Fruit: position de la partie la plus large	Frucht: Position des breitesten Teils	Fruto: posición de la parte más amplia		
QN	f towards stalk end	vers l'extrémité pédonculaire	zum Stielende hin	hacia el extremo peduncular		1
	at middle	au milieu	in der Mitte	en el medio	Clemenules (CLE)	2
c47.	towards distal end	vers la partie distale	zum distalen Ende hin	hacia el extremo distal		3
32. (+)	Fruit: circumference in transverse section	Fruit: circonférence en section transverse	Frucht: Umfang im Querschnitt	Fruto: circun- ferencia en sección transversal		
PQ	f circular	circulaire	zirkular	circular	Ortanique (TNR)	1
	somewhat angular	légèrement anguleuse	etwas kantig	ligeramente angular		2
c48.	scalloped	dentelée	muschelförmig	festoneado		3
33. (*) (+)	Fruit: general shape of proximal part (excluding neck, collar and depres- sion at stalk end)	Fruit: forme générale de la partie proximale (à l'exclusion du col, de la collerette et de la dépression à l'extrémité pédonculaire)	Frucht: allgemeine Form des proximalen Teils (ohne Hals, Kragen und Einsenkung am Stielende)	Fruto: forma general de la parte proximal (excluido el cuello, el collar y la depresión del extremo peduncular)		
PQ	f flattened	aplatie	abgeflacht	aplanada	Clemenules (CLE)	1
	slightly rounded	légèrement arrondie	leicht abgerundet	ligeramente redondeada	Ortanique (TNR)	2
	strongly rounded	fortement arrondie	stark abgerundet	fuertemente redondeada		3
c49.	tapered	effilée	verjüngt	afilada		4

34. (* (+)	<u>Varieties with fruit neck absent only:</u> Fruit: presence of depression at stalk end	<u>Seulement les variétés dont le fruit ne présente pas de col:</u> Fruit: présence d'une dépression à l'extrémité pédonculaire	<u>Nur Sorten die kein Hals am Frucht zeigen:</u> Frucht: Vorhandensein einer Einsenkung am Stielende	<u>Sólo variedades con fruto sin cuello:</u> Fruto: presencia de una depresión en el extremo peduncular		
QL	f absent	absente	fehlend	ausente	Ortanique (TNR)	1
c50.	present	présente	vorhanden	presente	Marisol (CLE)	9
35.	<u>Varieties with fruit neck absent only:</u> Fruit: depth of depression at stalk end	<u>Seulement les variétés dont le fruit ne présente pas de col:</u> Fruit: profondeur de la dépression à l'extrémité pédonculaire	<u>Nur Sorten die kein Hals am Frucht zeigen:</u> Frucht: Tiefe der Einsenkung am Stielende	<u>Sólo variedades con fruto sin cuello:</u> Fruto: profundidad de la depresión en el extremo peduncular		
QN	f shallow	peu profonde	flach	poco profunda		3
	medium	moyenne	mittel	media		5
c51.	deep	profonde	tief	profunda		7
36. (* (+)	Fruit: presence of neck	Fruit: présence d'un col	Frucht: Vorhandensein des Halses	Fruto: presencia de un cuello		
QL	f absent	absent	fehlend	ausente	Clemenules (CLE)	1
c52.	present	présent	vorhanden	presente		9
37.	Fruit: length of neck	Fruit: longueur du col	Frucht: Länge des Halses	Fruto: longitud del cuello		
QN	f short	court	kurz	corto		3
	medium	moyen	mittel	medio		5
c53.	long	long	lang	largo		7
38.	Fruit: thickness of neck	Fruit: épaisseur du col	Frucht: Dicke des Halses	Fruto: grosor del cuello		
QN	f thin	mince	dünn	delgado		3
	medium	moyen	mittel	medio		5
c54.	thick	épais	dick	grueso		7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
39.		Fruit: presence of constriction at stalk end	Fruit: présence d'un étranglement à l'extrémité pédonculaire	Frucht: Vorhandensein der Einschnürung am Stielende	Fruto: presencia de un estrechamiento en el extremo peduncular		
(+)							
QL	f	absent	absent	fehlend	ausente	Clemenules (CLE)	1
c55.		present	présent	vorhanden	presente		9
40.		Fruit: expression of constriction at stalk end	Fruit: expression de l'étranglement à l'extrémité pédonculaire	Frucht: Ausprägung der Einschnürung am Stielende	Fruto: expresión del estrechamiento en el extremo peduncular		
QN	f	weak	faible	gering	débil		3
		medium	moyenne	mittel	medio		5
c56.		strong	forte	stark	fuerte		7
41.		Fruit: number of radial grooves at stalk end	Fruit: nombre de cannelures radiales à l'extrémité pédonculaire	Frucht: Anzahl radiale Furchen am Stielende	Fruto: número de acanaladuras radiales en el extremo peduncular		
QN	f	absent or few	absentes ou peu nombreuses	fehlend oder sehr gering	ausente o bajo	Nova (HMA)	1
		intermediate	moyennement nombreuses	mittel	medio	Clemenules (CLE)	2
c57.		many	nombreuses	groß	alto		3
42.		Fruit: length of radial grooves at stalk end	Fruit: longueur des cannelures radiales à l'extrémité pédonculaire	Frucht: Länge der radialen Furchen am Stielende	Fruto: longitud de las acanaladuras radiales en el extremo peduncular		
QN	f	short	courtes	kurz	cortas		3
		medium	moyennes	mittel	medias		5
c58.		long	longues	lang	largas		7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
43.		Necked varieties only: Fruit: local depression at stalk attachment	Variétés à col seulement: Fruit: dépression locale à l'attache pédonculaire	Nur halsige Sorten: Frucht: örtliche Einsenkung am Stielansatz	Sólo variedades con cuello: Fruto: depresión local en la inserción peduncular		
(+)							
QN	f	absent or shallow	absente ou peu profonde	fehlend oder flach	ausente o poco profunda		1
		intermediate	intermédiaire	dazwischenliegend	intermedia		2
c59.		deep	profonde	tief	profunda		3
44.		Fruit: presence of collar	Fruit: présence d'une corolle	Frucht: Vorhandensein des Kragens	Fruto: presencia de un collar		
(+)							
QL	f	absent	absente	fehlend	ausente	Clemenules (CLE)	1
c60.		present	présente	vorhanden	presente		9
45.		Fruit: height of collar	Fruit: hauteur de la corolle	Frucht: Höhe des Kragens	Fruto: altura del collar		
QN	f	low	basse	niedrig	bajo		3
		medium	moyenne	mittel	medio		5
c61.		high	haute	hoch	alto		7
46.		Fruit: diameter of collar	Fruit: diamètre de la corolle	Frucht: Durchmesser des Kragens	Fruto: diámetro del collar		
QN	f	small	petit	klein	pequeño		3
		medium	moyen	mittel	medio		5
c62.		large	grand	groß	grande		7
47.		Fruit: abscission layer between floral disc and fruit	Fruit: abscission entre le disque floral et le fruit	Frucht: Trennschicht zwischen Blütenscheibe und Frucht	Fruto: capa de abscisión entre el disco floral y el fruto		
QN	f	absent or weakly developed	absente ou faiblement développée	fehlend oder schwach entwickelt	ausente o débilmente desarrollada		1
		intermediate	intermédiaire	mittel	intermedia		2
c63.		strongly developed	fortement développée	stark entwickelt	fuertemente desarrollada		3

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
48. (*) (+)		Fruit: general shape of distal part (excluding nipple, bulging of navel and depression at distal end)	Fruit: forme générale de la partie distale (à l'exclusion du mamelon, de la courbure du fruit secondaire et de la dépression à l'extrémité distale)	Frucht: allgemeine Form des distalen Teils (ohne Warze, Wölbung der sekundären Frucht und Einsenkung am distalen Ende)	Fruto: forma general de la parte distal (excluido el mamelón o pezón, el abultamiento del ombligo y la depresión en el extremo distal)		
QN	f	flattened	aplatie	abgeflacht	aplanada	Clemenules (CLE)	1
		slightly rounded	légèrement arrondie	leicht abgerundet	ligeramente redondeada		2
c64.		strongly rounded	fortement arrondie	stark abgerundet	fuertemente redondeada		3
49. (*) (+)		Fruit: presence of depression at distal end	Fruit: présence d'une dépression à l'extrémité distale	Frucht: Vorhandensein der Einsenkung am distalen Ende	Fruto: presencia de una depresión en el extremo distal		
QL	f	absent	absente	fehlend	ausente	Ortanique (TNR)	1
c65.		present	présente	vorhanden	presente	Arrufatina (CLE)	9
50.		Fruit: depth of depression at distal end	Fruit: profondeur de la dépression à l'extrémité distale	Frucht: Tiefe der Einsenkung am distalen Ende	Fruto: profundidad de la depresión en el extremo distal		
QN	f	shallow	peu profonde	flach	poco profunda		3
		medium	moyenne	mittel	media		5
c66.		deep	profonde	tief	profunda		7
51.		Fruit: diameter of depression at distal end	Fruit: diamètre de la dépression à l'extrémité distale	Frucht: Durchmesser der Einsenkung am distalen Ende	Fruto: diámetro de la depresión en el extremo distal		
QN	f	small	petit	klein	pequeña		3
		medium	moyen	mittel	media		5
c67.		large	grand	groß	grande		7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
52.		Fruit: presence of areola	Fruit: présence d'une aréole	Frucht: Vorhanden-sein der Areola	Fruto: presencia de un areola		
QL	f	absent	absente	fehlend	ausente	Nova (HMA)	1
		incomplete	incomplète	unvollständig	incompleta		2
c70.		complete	complète	vollständig	completa	Ortanique (TNR)	3
53.		Fruit: type of areola	Fruit: type d'aréole	Frucht: Typ der Areola	Fruto: tipo de areola		
(+)							
QL	f	smooth	régulière	glatt	lisa		1
		grooved	cannelée	gerieft	acanalada		2
c71.		ridged	annelée	geringelt	acrestada		3
54.		Fruit: diameter of areola	Fruit: diamètre de l'aréole	Frucht: Durchmesser der Areola	Fruto: diámetro de la areola		
QN	f	small	petit	klein	pequeña	Arrufatina (CLE)	3
		medium	moyen	mittel	media	Owari (SAT)	5
c72.		large	grand	groß	grande	Ortanique (TNR)	7
55.		Fruit: diameter of stylar scar	Fruit: diamètre de la cicatrice stylaire	Frucht: Durchmesser der Griffelnarbe	Fruto: diámetro de la cicatriz estilar		
QN	f	small	petit	klein	pequeña	Clemenules (CLE)	3
		medium	moyen	mittel	media	Owari (SAT)	5
c73.		large	grand	groß	grande		7
56.		Fruit: persistence of style	Fruit: persistance du style	Frucht: Persistenz des Griffels	Fruto: persistencia del estilo		
PQ	f	none	aucune	fehlend	ninguna		1
		partial	partielle	teilweise gegeben	parcial		2
c75.		total	totale	vollständig gegeben	total		3

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
57.		Fruit: presence of navel opening	Fruit: présence d'une ouverture du fruit secondaire	Frucht: Vorhandensein der Öffnung der sekundären Frucht	Fruto: presencia de un apertura del ombligo		
PQ	f	absent	absente	fehlend	ausente	Clemenules (CLE)	1
		occasionally present	présente occasionnellement	zuweilen vorhanden	ocasionalmente presente	Fortune (HMA)	2
c76.		always present	toujours présente	immer vorhanden	siempre presente		3
58.		Fruit: diameter of navel opening	Fruit: diamètre de l'ouverture du fruit secondaire	Frucht: Durchmesser der Öffnung der sekundären Frucht	Fruto: diámetro de la apertura del ombligo		
QN	f	small	petit	klein	pequeña	Ellendale (TNR)	3
		medium	moyen	mittel	media	Fortune (HMA)	5
c77.		large	grand	groß	grande		7
59.		Fruit: presence of radial grooves at distal end	Fruit: présence de cannelures radiales à l'extrémité distale	Frucht: Vorhandensein radialer Furchen an am distalen Ende	Fruto: presencia de acanaladuras radiales en el extremo distal		
QL	f	absent	absentes	fehlend	ausentes		1
c79.		present	présentes	vorhanden	presentes		9
60.		Fruit: expression of radial grooves at distal end	Fruit: expression des cannelures radiales à l'extrémité distale	Frucht: Ausprägung der radialen Furchen am distalen Ende	Fruto: expresión de las acanaladuras radiales en el extremo distal		
QN	f	weak	faible	gering	débil		3
		medium	moyenne	mittel	media		5
c80.		strong	forte	stark	fuerte		7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
61.		Fruit surface: predominant color	Fruit: couleur prédominante à la surface	Fruchtoberfläche: Hauptfarbe	Superficie del fruto: color predominante		
PQ	f	green	vert	grün	verde		1
	g	yellow green	vert-jaune	gelbgrün	verde amarillento		2
		light yellow	jaune clair	hellgelb	amarillo claro		3
		medium yellow	jaune moyen	mittelgelb	amarillo medio	Mapo (TNL)	4
		yellow orange	orange-jaune	gelborange	naranja amarillento		5
		medium orange	orange moyen	mittlorange	naranja medio	Clemenules (CLE)	6
		dark orange	orange foncé	dunkelorange	naranja oscuro		7
		orange red	rouge orangé	orangerot	rojo anaranjado	Nova (HMA)	8
c82.		red	rouge	rot	rojo		9
62.		Fruit surface: glossiness	Surface du fruit: brillance	Fruchtoberfläche: Glanz	Superficie del fruto: brillo		
QN	f	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Clemenules (CLE)	1
	g	weak	faible	gering	débil		3
		medium	moyenne	mittel	medio	Afourer (TNR)	5
		strong	forte	stark	fuerte		7
c85.		very strong	très forte	sehr stark	muy fuerte		9
63.		Fruit surface: roughness	Surface du fruit: rugosité	Fruchtoberfläche: Rauheit	Superficie del fruto: rugosidad		
QN	f	smooth	lisse	glatt	lisa	Murcott (TNR)	3
	g	medium	intermédiaire	mittel	media	Clemenules (CLE)	5
c86.		rough	rugueuse	rauh	rugosa	Temple (HMA)	7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
64.		Fruit surface: size of oil glands	Surface du fruit: taille des glandes à huile	Fruchtoberfläche: Größe der Öldrüsen	Superficie del fruto: tamaño de las glándulas de aceite		
PQ	f	all more or less the same size	toutes plus ou moins de la même taille	alle mehr oder weniger gleich groß	todas más o menos del mismo tamaño		1
c87.	g	larger ones interspersed by smaller ones	grandes et petites intercalées	größere vermischt mit kleineren	glándulas grandes intercaladas con otras más pequeñas		2
65.		Fruit surface: size of larger oil glands	Surface du fruit: taille des glandes à huile les plus grosses	Fruchtoberfläche: Größe der größeren Öldrüsen	Superficie del fruto: tamaño de las glándulas de aceite más grandes		
QN	f	small	petites	klein	pequeñas		3
	g	medium	moyennes	mittel	medianas		5
c88.		large	grosses	groß	grandes		7
66.		Fruit surface: conspicuousness of larger oil glands	Surface du fruit: netteté des glandes à huile les plus grosses	Fruchtoberfläche: Sichtbarkeit der größeren Öldrüsen	Superficie del fruto: visibilidad de las glándulas de aceite más grandes		
QN	f	weak	faible	gering	débil	Clemenules (CLE)	3
	g	medium	moyenne	mittel	media		5
c89.		strong	forte	stark	fuerte	Owari (SAT)	7
67.		Fruit surface: presence of pitting and pebbling on oil glands	Surface du fruit: présence de grenure et de crépissure sur les glandes à huile	Fruchtoberfläche: Vorhandensein von Grübchen und Körnern	Superficie del fruto: presencia de picado y granulado en las glándulas de aceite		
PQ	f	pitting and pebbling absent	grenure et crépissure absentes	Grübchen und Körner fehlend	picado y granulado ausentes		1
	g	pitting absent, pebbling present	grenure absente, crépissure présente	Grübchen fehlend, Körner vorhanden	picado ausente, granulado presente		2
		pitting present, pebbling absent	grenure présente, crépissure absente	Grübchen vorhanden, Körner fehlend	picado presente, granulado ausente		3
c90.		pitting and pebbling present	grenure et crépissure présentes	Grübchen und Körner vorhanden	picado y granulado presentes		4

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
68.		Fruit surface: density of pitting on oil glands	Surface du fruit: densité de la grenure sur les glandes à huile	Fruchtoberfläche: Dichte der Grübchen an den Öldrüsen	Superficie del fruto: densidad del picado en las glándulas de aceite		
QN	f	sparse	éparse	locker	dispersa		3
	g	medium	moyenne	mittel	media		5
c91.		dense	dense	dicht	densa		7
69.		Fruit surface: density of pebbling on oil glands	Surface du fruit: densité de la crépissure sur les glandes à huile	Fruchtoberfläche: Dichte der Körner an den Öldrüsen	Superficie del fruto: densidad del granu- lado en las glándulas de aceite		
QN	f	sparse	éparse	locker	dispersa		3
	g	medium	moyenne	mittel	media		5
c93.		dense	dense	dicht	densa		7
70.		Fruit surface: degree of pebbling on oil glands	Surface du fruit: degré de crépissure sur les glandes à huile	Fruchtoberfläche: Grad der Körnerbildung an den Öldrüsen	Superficie del fruto: nivel de granulado en las glándulas de aceite		
QN	f	weak	faible	gering	débil		3
	g	medium	moyen	mittel	medio		5
c94.		strong	fort	stark	fuerte		7
71. (*)		Fruit rind: thickness	Écorce du fruit: épaisseur	Fruchtschale: Dicke	Corteza del fruto: espesor		
QN	f	thin	fine	dünn	delgada	Murcott (TNR)	3
	g	medium	moyenne	mittel	media	Clemenules (CLE)	5
c95.		thick	épaisse	dick	gruesa	Minneola (TNL)	7
72. (*)		Fruit rind: adherence to flesh	Écorce du fruit: adhérence à la chair	Fruchtschale: Anhaften am Fleisch	Corteza del fruto: adherencia a la pulpa		
QN	f	weak	faible	gering	débil	Clemenules (CLE)	3
	g	medium	moyenne	mittel	media	Fortune (HMA)	5
c96.		strong	forte	stark	fuerte	Ortanique (TNR)	7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
73.		Fruit rind: strength	Écorce du fruit: rigidité	Fruchtschale: Stärke	Corteza del fruto: vigor		
QN	f	weak	faible	gering	débil		3
	g	medium	moyenne	mittel	medio		5
c97.		strong	forte	groß	fuerte		7
74.		Fruit rind: oiliness	Écorce du fruit: onctuosité	Fruchtschale: Öligkeit	Corteza del fruto: oleosidad		
QN	f	dry	sèche	trocken	seca		3
	g	medium	moyenne	mittel	mediana	Clemenules (CLE)	5
c98.		oily	grasse	ölig	oleosa	Ortanique (TNR)	7
75.		Fruit rind: conspicuousness of oil glands on inner surface	Écorce du fruit: netteté des glandes à huile sur la face interne	Fruchtschale: Sichtbarkeit der Öldrüsen an der inneren Oberfläche	Corteza del fruto: glándulas de aceite en la superficie interna		
QN	f	absent or weakly conspicuous	absentes ou peu nettes	fehlend oder schwach sichtbar	ausentes o poco visibles		1
	g	intermediate	moyennes	mittel	intermedias	Clemenules (CLE)	2
c99.		strongly conspicuous	très nettes	gut sichtbar	muy visibles		3
76.		Fruit: color of albedo	Fruit: couleur de l'albédo	Frucht: Farbe der Albedo	Fruto: color del albedo		
PQ	f	greenish	verdâtre	grünlich	verdoso		1
		white	blanc	weiß	blanco	Clemenules (CLE)	2
		light yellow	jaune clair	hellgelb	amarillo claro	Murcott (TNR)	3
		light orange	orange clair	hellorange	naranja claro	Afourer (TNR)	4
		pink	rose	rosa	rosa		5
c100.		reddish	rougeâtre	rötlich	rojizo		6
77.		Fruit: density of albedo	Fruit: densité de l'albédo	Frucht: Dichte der Albedo	Fruto: densidad del albedo		
QN	f	loose	faible	locker	laxo	Clemenules (CLE)	3
		medium	moyenne	mittel	medio	Fortune (HMA)	5
c101.		dense	dense	dicht	denso	Ortanique (TNR)	7

	MoE ^o English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
78. (*)	Fruit: amount of albedo adhering to flesh (strands excluded)	Fruit: quantité d'albédo adhérent à la chair (à l'exclusion des brins)	Frucht: Umfang der am Fleisch anhaftenden Albedo (ohne Fasern)	Fruto: cantidad de albedo que se adhiere a la pulpa (excluidos los filamentos)		
QN	f absent or very small	absente ou très faible	fehlend	ausente o muy pequeña	Clemenules (CLE)	1
	small	faible	gering	pequeña		3
	medium	moyenne	mittel	media		5
	large	forte	groß	grande		7
c102.	very large	très forte	sehr groß	muy grande		9
79.	Fruit: presence of albedo strands	Fruit: présence de brins d'albédo	Frucht: Vorhandensein von Albedofasern	Fruto: presencia de filamentos de albedo		
QL	f absent	absents	fehlend	ausentes		1
c103.	present	présents	vorhanden	presentes	Clemenules (CLE)	9
80.	Fruit: amount of albedo strands	Fruit: quantité de brins d'albédo	Frucht: Anzahl Albedofasern	Fruto: cantidad de filamentos de albedo		
QN	f small	faible	klein	baja		3
	medium	moyenne	mittel	media		5
c104.	large	forte	groß	alta		7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
81.		Fruit: main color of flesh	Fruit: couleur principale de la chair	Frucht: Hauptfarbe des Fleisches	Fruto: color principal de la pulpa		
PQ	f	whitish	blanchâtre	weißlich	blanquecino		1
	h	light green	vert clair	hellgrün	verde claro		2
		light yellow	jaune clair	hellgelb	amarillo claro		3
		medium yellow	jaune moyen	mittelgelb	amarillo medio		4
		light orange	orange clair	hellorange	naranja claro		5
		medium orange	orange moyen	mittlorange	naranja medio	Clemenules (CLE)	6
		dark orange	orange foncé	dunkelorange	naranja oscuro		7
		red	rouge	rot	rojo		8
c107.		purple	violet	purpur	púrpura		9
82.		Fruit: filling of core	Fruit : structure du cœur	Frucht: Ausfüllung des inneren Fruchtfleisches	Fruto: relleno del hueco central		
QN	f	absent or very sparse	absente ou très lâche	fehlend	ausente o muy laxo	Fortune (HMA)	1
	h	sparse	lâche	locker	laxo		3
		medium	intermédiaire	mittel	medio	Clemenules (CLE)	5
		dense	dense	dicht	denso	Murcott (TNR)	7
c109.		very dense	très dense	sehr dicht	muy denso		9
83.		Fruit: diameter of core	Fruit: diamètre du cœur	Frucht: Durchmesser des inneren Fruchtfleisches	Fruto: diámetro del hueco central		
QN	f	small	petit	klein	pequeño	Murcott (TNR)	3
	h	medium	moyen	mittel	medio	Clemenules (CLE)	5
c110.		large	grand	groß	grande	Hernandina (CLE)	7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
84.		Fruit: presence of rudimentary segments	Fruit: présence de segments rudimentaires	Frucht: Vorhandensein unvollständigen Segmente	Fruto: presencia de gajos rudimentarios		
QN	f	absent or weak	nulle ou faible	null oder gering	nula o débil	Clemenules (CLE)	1
	h	intermediate	intermédiaire	dazwischenliegend	intermedia		2
c111.		strong	forte	stark	fuerte		3
85.		Fruit: number of well developed segments	Fruit: nombre de segments bien développés	Frucht: Anzahl gut entwickelter Segmente	Fruto: número de gajos bien desarrollados		
QN	f	few	peu	gering	bajo	Oroval (CLE)	3
	h	medium	moyen	mittel	medio	Ortanique (TNR)	5
c112.		many	beaucoup	groß	alto	Temple (HMA)	7
86.		Fruit: coherence of adjacent segment walls	Fruit: adhérence des parois des segments adjacents	Frucht: Zusammenhalt der nebeneinanderliegenden Segmentwände	Fruto: adherencia entre los gajos adyacentes		
QN	f	weak	faible	gering	débil	Clemenules (CLE)	3
	h	medium	moyenne	mittel	media	Fortune (HMA)	5
c113.		strong	forte	stark	fuerte		7
87.		Fruit: strength of segment walls	Fruit: rigidité des parois des segments	Frucht: Stärke der Segmentwände	Fruto: firmeza de las paredes de los gajos		
QN	f	weak	faible	schwach	débil	Mapo (TNL)	3
	h	medium	moyenne	mittel	media	Fino (CLE)	5
c114.		strong	forte	stark	fuerte	Oronules	7
88.		Fruit: length of juice vesicles	Fruit: longueur des vésicules de jus	Frucht: Länge der Saftbläschen	Fruto: longitud de las vesículas de jugo		
QN	f	short	courtes	kurz	corta	Wilking (HMA)	3
	h	medium	moyennes	mittel	media		5
c115.		long	longues	lang	larga	Clemenules (CLE)	7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
89.		Fruit: thickness of juice vesicles	Fruit: épaisseur des vésicules de jus	Frucht: Dicke der Saftbläschen	Fruto: grosor de las vesículas de jugo		
QN	f	thin	fines	dünn	delgadas	Clemenules (CLE)	3
	h	medium	moyennes	mittel	medianas		5
c116.		thick	épaisses	dick	gruesas	Mapo (TNL)	7
90.		Fruit: conspicuousness of juice vesicle walls	Fruit: netteté des parois des vésicules de jus	Frucht: Sichtbarkeit der Saftbläschenwände	Fruto: visibilidad de las paredes de las vesículas de jugo		
QN	f	low	faible	gering	baja		3
	h	medium	moyenne	mittel	media		5
c117.		high	forte	groß	alta		7
91.		Fruit: coherence of juice vesicles	Fruit: adhérence des vésicules de jus	Frucht: Zusammenhalt der Saftbläschen	Fruto: coherencia de las vesículas de jugo		
QN	f	weak	faible	gering	débil		3
	h	medium	moyenne	mittel	media		5
c118.		strong	forte	stark	fuerte		7
92. (*)		Fruit: presence of navel (viewed internally)	Fruit: présence de fruit secondaire (vue interne)	Frucht: Vorhandensein von sekundären Früchten (von innen gesehen)	Fruto: presencia de ombligo (visto internamente)		
PQ	f	absent or very rare	absent ou très rare	fehlend oder sehr selten	ausente o muy rara		1
		occasionally present	présent occasionnellement	zuweilen vorhanden	ocasionalmente presente		2
c119.		always present	toujours présent	immer vorhanden	siempre presente		3
93.		Fruit: size of navel (viewed internally)	Fruit: taille du fruit secondaire (vue interne)	Frucht: Größe der sekundären Frucht (von innen gesehen)	Fruto: tamaño del ombligo visto internamente		
QN	f	small	petit	klein	pequeño		3
		medium	moyen	mittel	medio		5
c120.		large	grand	groß	grande		7

	MoE ^o	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
94.		Fruit: juiciness	Fruit: succulence	Frucht: Saftigkeit	Fruto: succulencia		
QN	f	low	faible	gering	baja		3
		medium	moyenne	mittel	media	Campeona (HMA)	5
c121.		high	élevée	groß	alta	Marisol (CLE)	7
95.		Fruit juice: total soluble solids	Jus du fruit: total de solides solubles	Fruchtsaft: Gesamtgehalt der gelösten Stoffe des Saftes	Jugo del fruto: sólidos solubles totales		
QN	f	low	faible	niedrig	bajo	Okitsu (SAT)	3
		medium	moyen	mittel	mediano	Temple (HMA)	5
c122.		high	fort	hoch	alto	Honey (HMA)	7
96.		Fruit juice: acidity	Jus du fruit: acidité	Fruchtsaft: Säure	Jugo del fruto: acidez		
QN	f	low	faible	gering	baja	Hernandina (CLE)	3
		medium	moyenne	mittel	media	Clemenules (CLE)	5
c123.		high	forte	stark	alta	Fortune (HMA)	7
97.		Fruit: strength of fibre	Fruit: rigidité des fibres	Frucht: Stärke der Fasern	Fruto: vigor de la fibra		
QN	f	weak	faible	schwach	débil		3
		medium	moyenne	mittel	medio		5
c124.		strong	forte	stark	fuerte		7
98.		Fruit: number of seeds (controlled self-pollination)	Fruit: nombre de pépins (autopollinisation contrôlée)	Frucht: Anzahl Samen (kontrollierte Selbstbefruchtung)	Fruto: número de semillas (autopollinización controlada)		
QN	f	absent or very few	absents ou très peu nombreux	fehlend oder sehr gering	ausente o muy bajo	Clemenules (CLE)	1
		few	peu nombreux	gering	bajo		3
		medium	moyennement nombreux	mittel	medio	Kara (HMA)	5
		many	nombreux	groß	alto		7
c125.		very many	très nombreux	sehr groß	muy alto	Común (MMN)	9

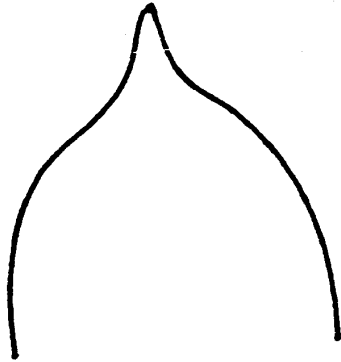
	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
99.		Fruit: number of seeds (open pollination)	Fruit: nombre de pépins (fécondation libre)	Frucht: Anzahl Samen (frei abblühend)	Fruto: número de semillas (polinización libre)		
(+)	f	absent or very few	absents ou très peu nombreux	fehlend oder sehr gering	ausente o muy bajo		1
		few	peu nombreux	gering	bajo		3
		moderate	modérément nombreux	mittel	moderado		5
c126.		many	nombreux	groß	alto		7
100.		Seed: polyembryony (*)	Pépin: polyembryonie	Samen: Polyembryonie	Semilla: poliembrionía		
QL	i	absent	absente	fehlend	ausente	Wilking (HMA)	1
c127.		present	présente	vorhanden	presente	Común (MMN)	9
101.		Seed: length	Pépin: longueur	Samen: Länge	Semilla: longitud		
QN	i	short	court	kurz	corta	Temple (HMA)	3
		medium	moyen	mittel	media		5
c128.		long	long	lang	larga	Campeona (HMA)	7
102.		Seed: width	Pépin: largeur	Samen: Breite	Semilla: anchura		
QN	i	narrow	étroit	schmal	estrecha	Temple (HMA)	3
		medium	moyen	mittel	media		5
c129.		broad	large	breit	ancha	Campeona (HMA)	7
103.		Seed: surface	Pépin: surface	Samen: Oberfläche	Semilla: superficie		
QL	i	smooth	lisse	glatt	lisa	Kinnow	1
c130.		wrinkled	ridée	runzlig	arrugada	Wilking (HMA)	2
104.		Seed: prominence of wrinkles	Pépin: proéminence des rides	Samen: Ausprägung der Runzeln	Semilla: prominencia de las arrugas		
QN	i	weak	faible	schwach	débil		3
		medium	moyenne	mittel	media		5
c131.		strong	forte	stark	fuerte		7

MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
105.	Seed: external color	Pépin: couleur externe	Samen: Außenfarbe	Semilla: color externo		
PQ	i greenish	verdâtre	grünlich	verdoso	Kara (HMA)	1
	whitish	blanchâtre	weißlich	blanquecino		2
	yellowish	jaunâtre	gelblich	amarillento		3
	pinkish	rosâtre	blaßrosa	rosado		4
c132.	brownish	brunâtre	bräunlich	amarronado		5
106.	Seed: color of inner seed coat	Pépin: couleur du tégument interne	Samen: Farbe der inneren Samenschale	Semilla: color de la cubierta interna		
PQ	i white	blanc	weiß	blanco		1
	light yellow	jaune clair	hellgelb	amarillo claro		2
	light brown	marron clair	hellbraun	marrón claro	Murcott (TNR)	3
	medium brown	marron moyen	mittelbraun	marrón medio		4
	dark brown	marron foncé	dunkelbraun	marrón oscuro		5
	red	rouge	rot	rojo		6
c133.	purple	violet	purpur	púrpura		7
107.	<u>Polyembryonic varieties only</u>: Seed: color of cotyledons	<u>Variétés poly-embryonnaires seulement</u>: Pépin: couleur des cotylédons	<u>Nur poly-embryonische Sorten</u>: Samen: Farbe der Kotyledonen	<u>Sólo variedades poliembriónicas</u>: Semilla: color de los cotiledones		
PQ	i white	blanc	weiß	blanco	Murcott (TNR)	1
	cream	crème	cremefarben	crema	Kara (HMA)	2
	light green	vert clair	hellgrün	verde claro	Común (MMN)	3
c134.	dark green	vert foncé	dunkelgrün	verde oscuro		4

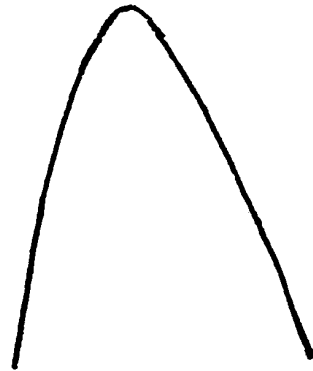
MoE ^o	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
108. (*)	Time of maturity of fruit for consumption	Époque de maturité du fruit pour la consommation	Zeitpunkt der Fruchtreife für den Genuß	Época de madurez del fruto para su consumo		
QN	early	précoce	früh	temprana	Okitsu (SAT)	3
	medium	moyenne	mittel	media	Clemenules (CLE)	5
c136.	late	tardive	spät	tardía	Murcott (TNR)	7
109. (*)	Fruit: parthenocarp	Fruit: parthénocarpie	Frucht: Parthenokarpie	Fruto: partenocarpia		
QL	absent	absente	fehlend	ausente	Temple (HMA)	1
c137.	present	présente	vorhanden	presente	Clemenules (CLE)	9
110. (+)	Plant: self-incompatibility	Plante: auto-incompatibilité	Pflanze: Selbst-unverträglichkeit	Planta: auto-incompatibilidad		
QL	absent	absente	fehlend	ausente	Ellendale (TNR)	1
c138.	present	présente	vorhanden	presente	Clemenules (CLE)	9

8. Explanations on the Table of Characteristics

Ad. 14 (c24.): Leaf blade: shape of apex



1
acuminate



2
acute

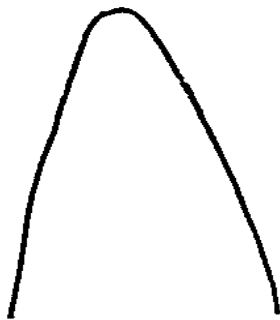


3
obtuse

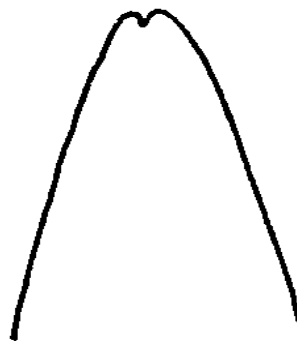


4
rounded

Ad. 15 (c25.): Leaf blade: emargination at tip

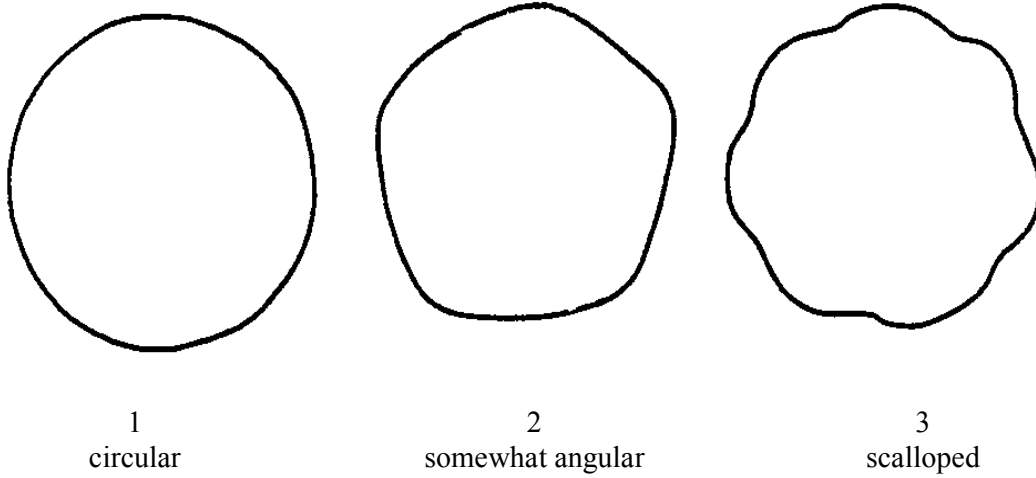


1
absent

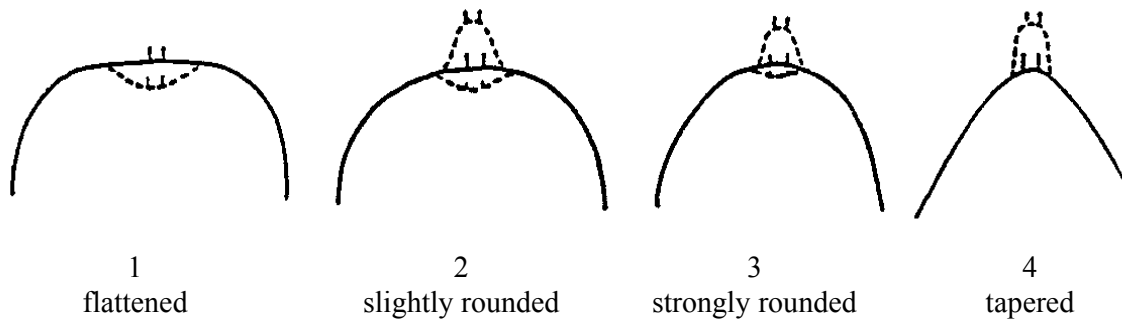


9
present

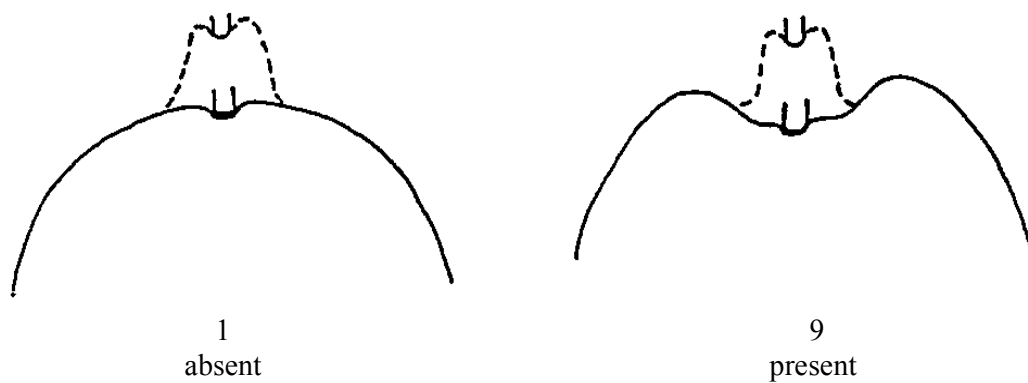
Ad. 32 (c48.): Fruit: circumference in transverse section



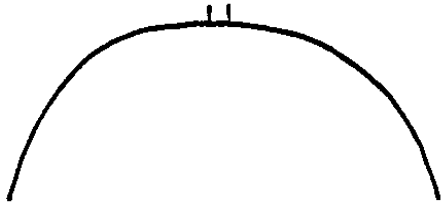
Ad. 33 (c49.): Fruit: general shape of proximal part (excluding neck, collar and depression at stalk end)



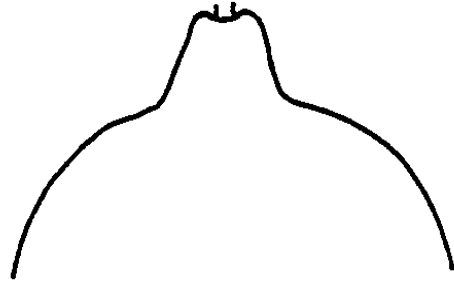
Ad. 34 (c50.): Varieties with fruit neck absent only: Fruit: presence of depression at stalk end



Ad. 36 (c52.): Fruit: presence of neck

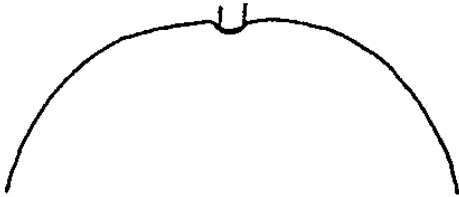


1
absent

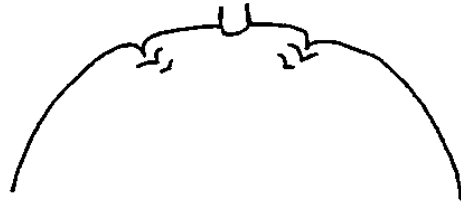


9
present

Ad. 39 (c55.): Fruit: presence of constriction at stalk end



1
absent

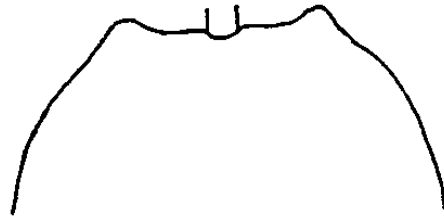


9
present

Ad. 44 (c60.): Fruit: presence of collar

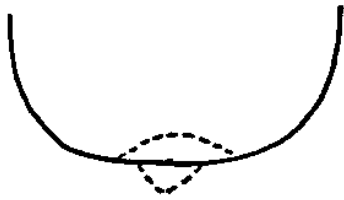


1
absent



9
present

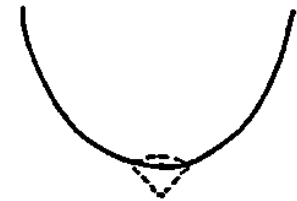
Ad. 48 (c64.): Fruit: general shape of distal part (excluding nipple, bulging of navel and depression at distal end)



1
flattened

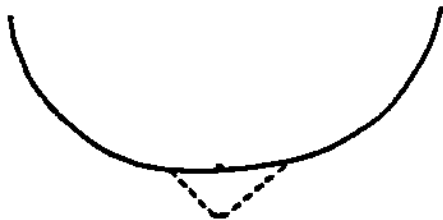


2
slightly rounded



3
strongly rounded

Ad. 49 (c65.): Fruit: presence of depression at distal end



1
absent



9
present

Ad. 53 (c71.): Fruit: type of areola



1
smooth



2
grooved



3
ridged

Ad. 99 (c126.): Fruit: number of seeds (open pollination)

Ad. 110 (c138.): Plant: self-incompatibility

LIST OF EXAMPLE VARIETIES FOR MANDARIN

Variety denomination	Group or species	Observations	Synonyms
Afourer	TNR		Murcott Afourer
Arrufatina	CLE		
Campeona	HMA	Citrus nobilis	
Clemenules	CLE		Clementina de Nules
Comun	MMN		Wilowleaf, Avana, Mediterraneana
Ellendale	TNR		
Encore	HMA	Citrus nobilis x Citrus deliciosa	
Fino	CLE		Clementina Fina
Fortune	HMA	Citrus clementina x Citrus tangerina	
Hernandina	CLE		
Honey	HMA	Citrus nobilis x Citrus deliciosa	
Kara	HMA	Citrus unshiu x Citrus nobilis	
Kinow	HMA	Citrus nobilis x Citrus deliciosa	
Mapo	TNL		
Marisol	CLE		
Minneola	TNL	Citrus paradisi x Citrus tangerina Grapefruit Duncan x Mandarin Dancy	Honeybell
Murcott	TNR		
Nova	HMA	Citrus clementina x Tangelo Orlando	Clemenvilla
Okitsu	SAT		
Orlando	TNL	Citrus paradisi x Citrus tangerina Grapefruit Duncan x Mandarin Dancy	Lake Tangelo
Oroval	CLE		
Ortanique	TNR		
Owari	SAT		
Page	HMA	Tangelo MINNEOLA x Citrus clementina	
Pixie	HMA	Citrus nobilis x Citrus tangerina	
Temple	HMA	Citrus temple Ort ex Y Tan.	
Wilking	HMA	Citrus nobilis x Citrus deliciosa	

9. Literature

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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		
<p>1. Subject of the Technical Questionnaire</p> <p><i>Citrus clementina</i> Hort. ex Tan. (Clementine) – CLE []</p> <p><i>Citrus deliciosa</i> Ten. (Mediterranean Mandarin) – MMN []</p> <p><i>Citrus reticulata</i> Blanco (Tangerine) – PMN []</p> <p><i>Citrus unshiu</i> Marc. (Satsuma) – SAT []</p> <p>Mandarin x (Grapefruit or Pummelo) (Tangelo) – TNL []</p> <p>Mandarin x Orange (Tangor) – TNR []</p> <p>Other Hybrid – HMA: []</p>		
<p>2. Applicant</p> <p>Name <input style="width: 80%;" type="text"/></p> <p>Address <input style="width: 80%;" type="text"/></p> <p>Telephone No. <input style="width: 80%;" type="text"/></p> <p>Fax No. <input style="width: 80%;" type="text"/></p> <p>E-mail address <input style="width: 80%;" type="text"/></p> <p>Breeder (if different from applicant) <input style="width: 80%;" type="text"/></p>		
<p>3. Proposed denomination and breeder's reference</p> <p>Proposed denomination (if available) <input style="width: 80%;" type="text"/></p> <p>Breeder's reference <input style="width: 80%;" type="text"/></p>		

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

4.1 Breeding Scheme

4.1.1 Variety resulting from:

- (a) controlled cross []
(please state parent varieties)
- (b) partially unknown cross []
(please state known parent variety(ies))
- (c) totally unknown cross []

4.1.2 Mutation []
(please state parent variety)

4.1.3 Discovery []
(please state where, when and how developed)

4.1.4 Other []
(please provide details)

4.2 Method of Propagating the Variety

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 Fruit: length (28)		
short	Wilking (HMA)	3[]
medium	Clemenules (CLE)	5[]
long	Minneola (TNL)	7[]
5.2 Fruit: diameter (29)		
small	Fino (CLE)	3[]
medium	Clemenules (CLE)	5[]
large	Ortanique (TNR)	7[]
5.3 Fruit: presence of neck (36)		
absent	Clemenules (CLE)	1[]
present		9[]
5.4 Fruit surface: predominant color (61)		
green		1[]
yellow green		2[]
light yellow		3[]
medium yellow	Mapo (TNL)	4[]
yellow orange		5[]
medium orange	Clemenules (CLE)	6[]
dark orange		7[]
orange red	Nova (HMA)	8[]
red		9[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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5.5 Fruit: main color of flesh			
(81)			
whitish			1[]
light green			2[]
light yellow			3[]
medium yellow			4[]
light orange			5[]
medium orange	Clemenules (CLE)		6[]
dark orange			7[]
red			8[]
purple			9[]
5.6 Time of maturity of fruit for consumption			
(108)			
early	Okitsu (SAT)		3[]
medium	Clemenules (CLE)		5[]
late	Murcott (TNR)		7[]
5.7 Fruit: parthenocarpy			
(109)			
absent	Temple (HMA)		1[]
present	Clemenules (CLE)		9[]

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 Special conditions for the examination of the variety

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

Yes [] No []

7.2.2 If yes, please give details:

7.3 Other information

A representative color photograph of the variety should accompany the Technical Questionnaire

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

Applicant's name

Signature

[Annex follows]