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STRAWBERRY

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Fragaria L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by an expert from Germany**to be considered by the**the Technical Committee at its fifty-eighth session**to be held in Geneva on October 24 and 25, 2022**Disclaimer: this document does not represent UPOV policies or guidance*

Alternative names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Fragaria L.</i>	Strawberry	Fraisier	Erdbeere	Fresa, Frutilla

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

ASSOCIATED DOCUMENTS

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

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

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Fragaria* L.

2. Material Required

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

2.2 The material is to be supplied in the form of young plants or seed.

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

Vegetatively propagated varieties: 20 young plants
Seed propagated varieties: sufficient seed to produce 20 plants, or 20 young plants raised from seed.

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

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

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

3. Method of Examination

3.1 *Number of Growing Cycles*

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

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

3.1.3 In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles.

3.1.4 The growing cycle is considered to be the period ranging from the beginning of active vegetative growth or flowering, continuing through active vegetative growth or flowering and fruit development and concluding with the harvesting of fruit.

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

3.2 *Testing Place*

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

3.3 *Conditions for Conducting the Examination*

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.

3.4 *Test Design*

Each test should be designed to result in a total of at least 20 plants.

3.5 *Additional Tests*

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

4. Assessment of Distinctness, Uniformity and Stability

4.1 *Distinctness*

4.1.1 General Recommendations

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

4.1.2 Consistent Differences

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

4.1.3 Clear Differences

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

4.1.4 Number of Plants or Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 8 plants or parts of plants taken from each of 8 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

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

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

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

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

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

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

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

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

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

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

4.2 *Uniformity*

- 4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:
- 4.2.2 These Test Guidelines have been developed for the examination of vegetatively propagated and seed-propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.
- 4.2.3 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.
- 4.2.4 The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction.
- 4.2.5 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 20 plants, 1 off-type is allowed.

4.3 *Stability*

- 4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.
- 4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

- 5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.
- 5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.
- 5.3 The following have been agreed as useful grouping characteristics:
- (a) Plant : growth habit (characteristic 1)
 - (b) Leaf: size (characteristic 7)
 - (c) Petiole: attitude of hairs (characteristic 17)
 - (d) Flower: diameter (characteristic 19)
 - (e) Flower: size of calyx in relation to corolla (characteristic 21)
 - (f) Petal: color of upper side (characteristic 25)
 - (g) Fruit: length in relation to diameter (characteristic 26)
 - (h) Fruit: size (characteristic 27)
 - (i) Fruit: shape (characteristic 28)
 - (j) Fruit: color (characteristic 32)
 - (k) Fruit: position of achenes (characteristic 34)
 - (l) Fruit: position of calyx attachment (characteristic 37)
 - (m) Fruit: attitude of sepals (characteristic 38)
 - (n) Fruit: diameter of calyx in relation to diameter of fruit (characteristic 39)
 - (o) Time of beginning of flowering (characteristic 42)
 - (p) Time of beginning of fruit ripening (characteristic 43)
 - (q) Flowering runners (characteristic 44)

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

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

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

6.1.2 Asterisked Characteristics

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

6.2 *States of Expression and Corresponding Notes*

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

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

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

6.3 *Types of Expression*

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

6.4 *Example Varieties*

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

6.5 Legend

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

- 1 Characteristic number
- 2 (*) Asterisked characteristic – see Chapter 6.1.2
- 3 Type of expression
 QL Qualitative characteristic – see Chapter 6.3
 QN Quantitative characteristic – see Chapter 6.3
 PQ Pseudo-qualitative characteristic – see Chapter 6.3
- 4 Method of observation (and type of plot, if applicable)
 MG, MS, VG, VS – see Chapter 4.1.5
- 5 (+) See Explanations on the Table of Characteristics in Chapter 8.2
- 6 (a)-(d) See Explanations on the Table of Characteristics in Chapter 8.1
- 7 Not applicable

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

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*)	QN	VG	(+)	(a)				
	Plant: growth habit	Plante : port	Pflanze: Wuchsform	Planta: hábito de crecimiento				
	upright	dressé	aufrecht	erecto	Vibrant		1	
	upright to semi-upright	dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semierecto	Korona		2	
	semi-upright	demi-dressé	halbaufrecht	semierecto	Senga Sengana		3	
	semi-upright to spreading	demi-dressé à étalé	halbaufrecht bis breitwüchsig	semierecto a extendido	Weißer Ananas		4	
	spreading	étalé	breitwüchsig	extendido	Lucida Perfecta		5	
2.	QN	VG	(+)	(a)				
	Plant: density of foliage	Plante : densité du feuillage	Pflanze: Dichte des Laubes	Planta: densidad del follaje				
	very sparse	très lâche	sehr locker	muy laxa			1	
	very sparse to sparse	très lâche à lâche	sehr locker bis locker	muy laxa a laxa			2	
	sparse	lâche	locker	laxa	Elista, Pantaguella		3	
	sparse to medium	lâche à moyenne	locker bis mittel	laxa a media	Cirafine, Elvira, Seascape, Sweet Eve		4	
	medium	moyenne	mittel	media	Everest, Florin, Gorella		5	
	medium to dense	moyenne à dense	mittel bis dicht	media a densa	Darselect, Dream, Florence, MA 65		6	
	dense	dense	dicht	densa	Sans Rivale, Yamaska		7	
	dense to very dense	dense à très dense	dicht bis sehr dicht	densa a muy densa	Fontaine, Pink Extara		8	
	very dense	très dense	sehr dicht	muy densa	Alexandria		9	
3.	QN	VG	(+)	(a)				
	Plant: vigor	Plante : vigueur	Pflanze: Wuchsstärke	Planta: vigor				
	very weak	très faible	sehr gering	muy débil			1	
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil			2	
	weak	faible	gering	débil	Serenata, Temptation		3	
	weak to medium	faible à moyenne	gering bis mittel	débil a medio	CIVRI 30, Drisstrawfive		4	
	medium	moyenne	mittel	medio	Clery, Everest, Pandora		5	
	medium to strong	moyenne à forte	mittel bis stark	medio a fuerte	Korona, Salsa		6	
	strong	forte	stark	fuerte	Florence, Yamaska		7	
	strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte	BBB PO 01, Pink Extara		8	
	very strong	très forte	sehr stark	muy fuerte	Schwarze Hubertus		9	

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4. (*)	QN	VG	(b)			
	Plant: position of inflorescence in relation to foliage	Plante : position de l'inflorescence par rapport au feuillage	Pflanze: Stellung des Blütenstandes im Verhältnis zum Laub	Planta: posición de la inflorescencia en relación con el follaje		
	strongly below	fortement en dessous	stark unterhalb	fuertemente por debajo	Lucia	1
	slightly below	légèrement en dessous	leicht unterhalb	ligeramente por debajo	Senga Sengana	2
	same level	même niveau	auf gleicher Höhe	mismo nivel	Korona	3
	slightly above	légèrement au-dessus	leicht oberhalb	ligeramente por encima	Daroyal	4
	strongly above	fortement au-dessus	stark oberhalb	fuertemente por encima	Vibrant	5
5.	QN	VG	(c)			
	Plant: number of stolons	Plante : nombre de stolons	Pflanze: Anzahl Ausläufer	Planta: número de estolones		
	absent or very few	absent ou très petit	fehlend oder sehr gering	ausente o muy bajo	Alexandria, Rügen	1
	very few	très petit	sehr gering bis gering	muy bajo	Everest, Loran	2
	few	petit	gering	bajo	Bolero, Sonata	3
	few to medium	petit à moyen	gering bis mittel	bajo a medio	Malling Sunrise, Marionnet 97	4
	medium	moyen	mittel	medio	Altess, Amandine, NF 633, Vivaldi	5
	medium to many	moyen à élevé	mittel bis groß	medio a alto	Ranaissance, Starlette	6
	many	élevé	groß	alto	Roseta	7
	many to very many	élevé à très élevé	groß bis sehr groß	alto a muy alto	Mieze Nova	8
	very many	très élevé	sehr groß	muy alto	BBB PO 01	9
6.	QN	VG	(+) (c)			
	Stolon: intensity of anthocyanin coloration	Stolon : intensité de la pigmentation anthocyanique	Ausläufer: Intensität der Anthocyanfärbung	Estolón: intensidad de la pigmentación antocianica		
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Weitgasserii I Nivalis	1
	weak	faible	gering	débil	Alice, BBB PO 01, Florence, Salsa	2
	medium	moyenne	mittel	media	Albion, Charlotte, Darselect	3
	strong	forte	stark	fuerte	Candiss, Wendy	4
	very strong	forte à très forte	sehr stark	muy fuerte		5

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7. (*)	QN	MG/VG	(+)	(a)				
	Leaf: size	Feuille : taille	Blatt: Größe	Hoja: tamaño				
	very small	très petite	sehr klein	muy pequeño				1
	very small to small	très petite à petite	sehr klein bis klein	muy pequeño a pequeño				2
	small	petite	klein	pequeño	Fontaine			3
	small to medium	petite à moyenne	klein bis mittel	pequeño a medio	Sans Rivale, Toscana			4
	medium	moyenne	mittel	medio	Gorella, Korona, Senga Sengana			5
	medium to large	moyenne à grande	mittel bis groß	medio a grande	Elsanta, Honeoye, Salsa			6
	large	grande	groß	grande	Aprica, Darselect			7
	large to very large	grande à très grande	groß bis sehr groß	grande a muy grande	Merkur, Ramir			8
	very large	très grande	sehr groß	muy grande				9
8.	PQ	VG		(a)				
	Leaf: color of upper side	Feuille : couleur de la face supérieure	Blatt: Farbe der Oberseite	Hoja: color del haz				
	yellow green	vert-jaune	gelbgrün	verde amarillento				1
	light green	vert clair	hellgrün	verde claro	Junita			2
	medium green	vert moyen	mittelgrün	verde medio	Dream, Malling Centenary			3
	dark green	vert foncé	dunkelgrün	verde oscuro	Marionnet 99, Mize Schindler			4
	blue green	vert-bleu	blaugrün	verde azulado	Mount Everest			5
9. (*)	QN	VG	(+)	(a)				
	Leaf: rugosity	Feuille : rugosité	Blatt: Blasigkeit	Hoja: rugosidad				
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Anablanca, Florence, Yamaska			1
	weak	faible	gering	débil	Clery			2
	medium	moyenne	mittel	media	Cigaline, Everest			3
	strong	forte	stark	fuerte	Cijosée			4
	very strong	forte à très forte	sehr stark	muy fuerte	Bogota, Romina, Symphony			5
10. (*)	QN	VG	(+)	(a)				
	Leaf: glossiness	Feuille : brillance	Blatt: Glanz	Hoja: brillo				
	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	Bogota, White Dream			1
	medium	moyenne	mittel	medio	Irvine, Kamila, Marionnet 86			2
	strong	forte	stark	fuerte	Aramella, Florence, Sweet Delight, Verity, Vivara			3

	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
11. (*)	QN	MG/VG	(a)			
	Terminal leaflet: length in relation to width	Foliolle terminale : longueur par rapport à la largeur	Endfieder: Länge im Verhältnis zur Breite	Folíolo terminal: longitud en relación con la anchura		
	shorter than broad	plus courte que large	kürzer als breit	más corta que ancha		1
	as short as broad	aussi courte que large	so kurz wie breit	tan corta como ancha	Cirano, Everest, Salsa	2
	longer than broad	plus longue que large	länger als breit	más larga que ancha	Elsanta, Korona, Symphony	3
	much longer than broad	beaucoup plus longue que large	viel länger als breit	mucho más larga que ancha	Anablanca, Cigaline	4
12.	PQ	VG	(+)	(a)		
	Terminal leaflet: shape of base	Foliolle terminale : forme de la base	Endfieder: Form der Basis	Folíolo terminal: forma de la base		
	acute	aiguë	spitz	aguda	Gariguette	1
	obtuse	obtuse	stumpf	obtusa	Cirano, Verity	2
	rounded	arrondie	abgerundet	redondeada	NF 421	3
13.	QN	VG	(+)	(a)		
	Terminal leaflet: margin	Foliolle terminale : bord	Endfieder: Rand	Folíolo terminal: borde		
	serrate	dentelé	gesägt	serrado	Chandler, Elsanta, Gariguette, Yamaska	1
	serrate to crenate	dentelé à crénelé	gesägt bis gekerbt	serrado a crenado	Altess, Amandine, Pandora	2
	crenate	crénelé	gekerbt	crenado	Cambridge Favourite, Everest	3
14.	QN	VG	(+)	(a)		
	Terminal leaflet: depth of incision of margin	Foliolle terminale : profondeur de l'incision du bord	Endfieder: Tiefe der Randeinschnitte	Folíolo terminal: profundidad de la incisión del borde		
	very shallow	très peu profonde	sehr flach	muy poco profunda	Weißer Ananas	1
	shallow	peu profonde	flach	poco profunda	Senga Sengana	2
	medium	moyenne	mittel	media	Symphony	3
	deep	profonde	tief	profunda	Polka	4
	very deep	très profonde	sehr tief	muy profunda	Cigaline	5
15.	QN	VG	(+)	(a)		
	Terminal leaflet: shape in cross section	Foliolle terminale : forme en section transversale	Endfieder: Form im Querschnitt	Folíolo terminal: forma en sección transversal		
	concave	concave	konkav	cóncava	MA 65, Malwina, Verity	1
	straight	droite	gerade	recta	Aramella, Cigaline	2
	convex	convexe	konvex	convexa	Cirano	3

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	QN	MG/VG	(+)	(a)				
	Petiole: length	Petiole : longueur	Blattstiel: Länge	Pecíolo: longitud				
	very short	très courte	sehr kurz	muy corta				1
	very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta	Fontaine			2
	short	courte	kurz	corta	Frel, Tristan			3
	short to medium	courte à moyenne	kurz bis mittel	corta a media	Floriante			4
	medium	moyenne	mittel	media	Everest, Favori			5
	medium to long	moyenne à longue	mittel bis lang	media a larga	GH 75			6
	long	longue	lang	larga	Malwina			7
	long to very long	longue à très longue	lang bis sehr lang	larga a muy larga	Faith			8
	very long	très longue	sehr lang	muy larga				9
17. (*)	QN	VG	(+)	(a)				
	Petiole: attitude of hairs	Pétiole : port des poils	Blattstiel: Haarstellung	Pecíolo: porte de los pelos				
	adpressed	apprimé	anliegend	adpreso	Elianny, Vivara			1
	upwards	vers le haut	aufwärts gerichtet	ascendente	Darselect, Elsanta			2
	outwards	vers l'extérieur	abstehend	hacia el exterior	Albion, Filicia, Malwina			3
	downwards	vers le bas	abwärts gerichtet	hacia abajo	Cirano			4
18.	QN	VG		(b)				
	Stipule: intensity of anthocyanin coloration	Stipule : intensité de la pigmentation anthocyanique	Nebenblatt: Intensität Anthocyanfärbung	Estípula: intensidad de la pigmentación antocianica				
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Clery, Hansawhit, Lucida Perfecta, Senga Sengana			1
	weak	faible	gering	débil	Camarosa, Darlisette, Korona, Lambada			2
	medium	moyenne	mittel	media	Anablanca, Cambridge Favourite, Elsanta, Musica			3
	strong	forte	stark	fuerte	Darselect, Sonata			4
	very strong	forte à très forte	sehr stark	muy fuerte	Frugodi			5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. (*)	QN	MG/VG	(c)			
	Flower: diameter	Fleur : diamètre	Blüte: Durchmesser	Flor: diámetro		
	very small	très petit	sehr klein	muy pequeño		1
	very small to small	très petit à petit	sehr klein bis klein	muy pequeño a pequeño	Fontaine	2
	small	petit	klein	pequeño	Darestivale, Sans Rivale	3
	small to medium	petit à moyen	klein bis mittel	pequeño a medio	Majestic, Mara des Bois, Senga Sengana, Yamaska	4
	medium	moyen	mittel	medio	Bogota, Elsanta, Everest, Korona	5
	medium to large	moyen à grand	mittel bis groß	medio a grande	Camarosa, Chandler, Darselect	6
	large	grand	groß	grande	Cambridge Favourite, Ines	7
	large to very large	grand à très grand	groß bis sehr groß	grande a muy grande		8
	very large	très grand	sehr groß	muy grande	SG 0203	9
20. (*)	QN	VG	(+)	(c)		
	Flower: arrangement of petals	Fleur : disposition des pétales	Blüte: Anordnung der Blütenblätter	Flor: disposición de los pétalos		
	free	libre	freistehend	libre	Gariguette, Lia	1
	touching	tangents	sich berührend	en contacto	Cijosée, Wendy	2
	overlapping	se recouvrant	überlappend	solapada	Gladis, Malling Centenary, Marionnet 86	3
21. (*)	QN	VG	(+)	(c)		
	Flower: size of calyx in relation to corolla	Fleur : taille du calice par rapport à la corolle	Blüte: Größe des Kelchs im Verhältnis zur Krone	Flor: tamaño del cáliz en relación con la corola		
	smaller	plus petite	kleiner	más pequeño	Jussara, Toscana	1
	same size	de même taille	gleich groß	mismo tamaño	Filicia, Gladis	2
	larger	plus grande	größer	más grande	Camarosa, Candiss, Everest	3
22. (*)	QL	VG	(c)			
	Flower: stamen	Fleur : étamine	Blüte: Staubfaden	Flor: estambre		
	absent	absente	fehlend	ausente	Pandora, Yamaska	1
	present	présente	vorhanden	presente	Gariguette	9

	English		français		deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
23.	PQ	VG	(+)	(c)				
	Petal: shape	Pétale : forme	Blütenblatt: Form	Pétalo: forma				
	elliptic	elliptique	elliptisch	elíptica	Gariguette		1	
	circular	circulaire	kreisförmig	circular	Daroyal, Darselect, Weiße Ananas		2	
	transverse elliptic	elliptique transverse	quer elliptisch	elíptica transversal	Ines, Portola		3	
	ovate	ovale	eiförmig	oval	BBB PO 01, Elsanta		4	
24.	QN	MG/VG		(c)				
	Petal: ratio length/width	Pétale : rapport longueur / largeur	Blütenblatt: Verhältnis Länge/Breite	Pétalo: relación longitud/anchura				
	low	bas	klein	baja	Ines, Verity		1	
	medium	moyen	mittel	media	CIR 104, Darselect, Honeoye, Majestic, Osiris		2	
	high	élevé	groß	alta	Anablanca, BBB PO 01, Ciflorette, Gariguette, Gustine		3	
25. (*)	PQ	VG		(c)				
	Petal: color of upper side	Pétale : couleur de la face supérieure	Blütenblatt: Farbe der Oberseite	Pétalo: color del haz				
	greenish white	blanc verdâtre	grünlichweiß	blanco verdoso			1	
	white	blanc	weiß	blanco	Gariguette		2	
	light pink	rose clair	hellrosa	rosa claro	Marajox, Pikan		3	
	medium pink	rose moyen	mittelrosa	rosa medio	Frel		4	
	dark pink	rose foncé	dunkelrosa	rosa oscuro	Tarpan		5	
	red	rouge	rot	rojo			6	
26. (*)	QN	MG/VG		(d)				
	Fruit: length in relation to diameter	Fruit : longueur par rapport à diamètre	Frucht: Länge im Verhältnis zum Durchmesser	Fruto: longitud en relación con el diámetro				
	very low	très bas	sehr klein	muy baja	Mieze Schindler		1	
	low	bas	klein	baja	Lia, Sussette		2	
	medium	moyen	mittel	media	Gorella, Honeoye		3	
	high	élevé	groß	alta	Malling Centenary, Osiris		4	
	very high	élevé à très élevé	sehr groß	muy alta	Pantaguella		5	

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27. (*)	QN	MG/VG	(+)	(d)				
	Fruit: size	Fruit : taille	Frucht: Größe	Fruto: tamaño				
	very small	très petite	sehr klein	muy pequeño		Rosa Perle, Ulrichsburg	1	
	very small to small	très petite à petite	sehr klein bis klein	muy pequeño a pequeño		Fontaine	2	
	small	petite	klein	pequeño		Linne, Summer Breeze Snow	3	
	small to medium	petite à moyenne	klein bis mittel	pequeño a medio		Toscana, Weiße Ananas	4	
	medium	moyenne	mittel	medio		BBB PO 01, Sans Rivale	5	
	medium to large	moyenne à grande	mittel bis groß	medio a grande		Finesse, MA 65	6	
	large	grande	groß	grande		Altess, Lia	7	
	large to very large	grande à très grande	groß bis sehr groß	grande a muy grande		Albion, Verity	8	
	very large	très grande	sehr groß	muy grande			9	
28. (*)	PQ	VG	(+)	(d)				
	Fruit: shape	Fruit : forme	Frucht: Form	Fruto: forma				
	reniform	reniforme	nierenförmig	reniforme		Jumbo	1	
	conical	conique	kegelförmig	cónica		Albion, Clery, Everest, Matis, Murano, Sweet Charlie	2	
	cordate	cordée	herzförmig	cordada		Malling Champion	3	
	ovate	ovale	eiförmig	oval		Quarantaine de Prin	4	
	oblong	oblongue	rechteckig	oblonga			5	
	rhombic	rhombique	rhombisch	rómbica		Lumotar	6	
	oblate	arrondie-aplatie	breitrund	achatada		BBB PO 01	7	
	circular	circulaire	kreisförmig	circular		Florika	8	
	wedged	cunéiforme	keilförmig	cuneada		Konia	9	
29.	QN	VG	(+)					
	Fruit: position of maximum diameter	Fruit : position du diamètre maximal	Frucht: Position des maximalen Durchmessers	Fruto: posición del diámetro máximo				
	strongly towards calyx	fortement vers le calice	stark zum Kelch hin	fuertemente hacia el cáliz		Symphony	1	
	moderately towards calyx	modérément vers le calice	mäßig zum Kelch hin	moderadamente hacia el cáliz		Senga Sengana	2	
	at middle	au milieu	in der Mitte	en el centro		Florika, Weiße Ananas	3	

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30.	PQ	VG	(+)	(d)				
	Fruit: shape of apex	Fruit : forme de l'apex	Frucht: Form der Spitze	Fruto: forma del ápice				
	truncate	tronquée	gerade	truncada				1
	notched	échancré	gekerbt	con muescas		Camarosa		2
	retuse	rétuse	eingedrückt	retusa		Zanta		3
	rounded	arrondie	abgerundet	redondeada		Korona, Weiße Ananas		4
	acute	aiguë	spitz	aguda				5
31.	PQ	VG	(+)	(d)				
	Fruit: shape at calyx end	Fruit : forme du sommet	Frucht: Form am Kelchende	Fruto: forma en el extremo del cáliz				
	obtuse	obtuse	stumpf	obtusa		NF 421		1
	rounded	arrondie	abgerundet	redondeada		Florence		2
	flattened	aplatie	abgeflacht	aplanada		Malwina, Symphony		3
	retuse	rétuse	eingedrückt	retusa		Elegance		4
32. (*)	PQ	VG	(+)	(d)				
	Fruit: color	Fruit : couleur	Frucht: Farbe	Fruto: color				
	pinkish white	blanc rosâtre	rosaweiß	blanco rosáceo		Weiße Ananas		1
	yellowish white	blanc jaunâtre	gelblichweiß	blanco amarillento		Lucida Perfecta		2
	light orange	orange claire	hellorange	naranja claro		Merton Dawn		3
	medium orange	orange moyen	mittlorange	naranja medio		Cambridge Favourite		4
	orange red	rouge orangé	orangerot	rojo anaranjado		Gorella		5
	pink	rose	rosa	rosa				6
	light red	rouge clair	hellrot	rojo claro				7
	medium red	rouge moyen	mittelrot	rojo medio		Elsanta, Royal Sovereign, Sweet Charlie		8
	dark red	rouge foncé	dunkelrot	rojo oscuro		Honeoye, Seascape, Senga Sengana		9
	blackish red	rouge noirâtre	schwärzlichrot	rojo negruzco		Arista		10

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33.	QN	VG	(+)	(d)				
	Fruit: width of band without achenes	Fruit : largeur de la zone sans akènes	Frucht: Breite der nüsschenfreien Zone	Fruto: anchura de la banda sin aquenios				
	absent or very narrow	absente ou très étroite	fehlend oder sehr schmal	ausente o muy estrecha	Drisstrawfive, Fontaine		1	
	very narrow to narrow	très étroite à étroite	sehr schmal bis schmal	muy estrecha a estrecha	Altess, Amandine, Verity		2	
	narrow	étroite	schmal	estrecha	Elsanta, Everest, Murano, Pandora		3	
	narrow to medium	étroite à moyenne	schmal bis mittel	estrecha a media	CIR 107, Honeoye, Ines		4	
	medium	moyenne	mittel	media	Dream, Lorette, Salsa		5	
	medium to broad	moyenne à large	mittel bis breit	media a ancha	Romina, Yamaska		6	
	broad	large	breit	ancha	Frugodi, Valotar		7	
	broad to very broad	large à très large	breit bis sehr breit	ancha a muy ancha			8	
	very broad	très large	sehr breit	muy ancha			9	
34. (*)	QN	VG	(+)	(d)				
	Fruit: position of achenes	Fruit : position des akènes	Frucht: Position der Nüsschen	Fruto: posición de los aquenios				
	strongly below surface	fortement enfoncée	stark eingesenkt	fuertemente por debajo de la superficie	Mieze Schindler		1	
	slightly below surface	légèrement enfoncée	leicht eingesenkt	ligeramente por debajo de la superficie	Albion, Kimberley		2	
	level with surface	affleurante	eben	nivelada con la superficie	Malling Centenary, Osiris		3	
	above surface	saillante	aufsitzend	por encima de la superficie	Alice, Frugodi, Toscana		4	
35.	PQ	VG	(+)					
	Fruit: color of achenes	Fruit : couleur des akènes	Frucht: Farbe der Nüsschen	Fruto: color de los aquenios				
	greenish	verdâtre	grünlich	verdoso	Lucy		1	
	yellow	jaune	gelb	amarillo	Candiss		2	
	red	rouge	rot	rojo	Weiße Ananas		3	
36.	QN	MG/VG	(+)	(d)				
	Fruit: density of achenes	Fruit : densité des akènes	Frucht: Dichte der Nüsschen	Fruto: densidad de los aquenios				
	sparse	lâche	locker	laxa			1	
	medium	moyenne	mittel	media	Elegance, Evita, Red Glory		2	
	dense	dense	dicht	densa	Lucy, NF 205		3	

	English		français		deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
37. (*)	QN	VG	(+)	(d)				
	Fruit: position of calyx attachment	Fruit : position de l'attache du calice	Frucht: Position des Kelchansatzes	Fruto: posición de la inserción del cáliz				
	inserted	insérée	eingesenkt	insertada	Finesse		1	
	level with fruit	au niveau de la surface du fruit	eben	nivel con el fruto	Lia, Murano, Senga Sengana, Sweet Charlie		2	
	raised	saillante	aufsitzend	elevada	Ciflorette, Gariguette, NF 421		3	
38. (*)	QN	VG	(+)	(d)				
	Fruit: attitude of sepals	Fruit : port des sépales	Frucht: Haltung der Kelchblätter	Fruto: porte de los sépalos				
	upwards	vers le haut	aufwärts gerichtet	ascendente	Gariguette		1	
	outwards	vers l'extérieur	abstehend	hacia el exterior	Altess, Lia, Osiris		2	
	downwards	vers le bas	abwärts gerichtet	hacia abajo	Pink Extara		3	
39. (*)	QN	VG	(+)	(d)				
	Fruit: diameter of calyx in relation to diameter of fruit	Fruit : diamètre du calice par rapport au diamètre du fruit	Frucht: Durchmesser des Kelches im Verhältnis zum Durchmesser der Frucht	Fruto: diámetro del cáliz en relación con el diámetro del fruto				
	much smaller	beaucoup plus petit	viel kleiner	mucho más pequeño	Momoirohoppé 8 Go		1	
	slightly smaller	légèrement plus petit	etwas kleiner	ligeramente más pequeño	Lia, Tecla, Vivaldi		2	
	same size	même taille	gleich groß	mismo tamaño	Avarosa, Candiss, Cirano, Cupid, Daroyal		3	
	slightly larger	légèrement plus grand	etwas größer	ligeramente más grande	Gladis, Murano		4	
	much larger	beaucoup plus grand	viel größer	mucho más grande	ASF 2021, FD 1604		5	
40.	PQ	VG	(+)	(d)				
	Fruit: color of flesh	Fruit : couleur de la chair	Frucht: Farbe des Fleisches	Fruto: color de la pulpa				
	whitish	blanchâtre	weißlich	blanquecino	Anablanca, BBB PO 01, Fontaine		1	
	light pink	rose clair	hellrosa	rosa claro	Jukhyang		2	
	orange red	rouge orangé	orangerot	rojo anaranjado	Elegance		3	
	light red	rouge clair	hellrot	rojo claro	Majestic		4	
	medium red	rouge moyen	mittelrot	rojo medio	Aprica, Malling Sunrise, NF 421		5	
	dark red	rouge foncé	dunkelrot	rojo oscuro	Cijosée, Daroyal		6	

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
41.	PQ	VG	(+)	(d)				
	Fruit: color of core	Fruit : couleur du cœur	Frucht: Farbe des Innenstrunks	Fruto: color del corazón				
	white	blanc	weiß	blanco		BBB PO 01, Pink Extara	1	
	light red	rouge clair	hellrot	rojo claro		Elegance, Figaro, Toscana	2	
	medium red	rouge moyen	mittelrot	rojo medio		Avarosa, Gladis, Murano	3	
	dark red	rouge foncé	dunkelrot	rojo oscuro		Malwina	4	
42. (*)	QN	MG	(+)					
	Time of beginning of flowering	Epoque de début de la floraison	Zeitpunkt des Blühbeginns	Época de inicio de la floración				
	very early	très précoce	sehr früh	muy temprana		Lorette	1	
	very early to early	très précoce à précoce	sehr früh bis früh	muy temprana a temprana		Avarosa, Murano, Starlette	2	
	early	précoce	früh	temprana		Anabelle, Camarillo, Charlotte	3	
	early to medium	précoce à moyenne	früh bis mittel	temprana a media		Evie 3, Sweet Eve	4	
	medium	moyenne	mittel	media		Gorella, Hansawhit, Osiris, Velvet	5	
	medium to late	moyenne à tardive	mittel bis spät	media a tardía		Avamaria, Driscoll Jubilee	6	
	late	tardive	spät	tardía		Laetitia, Rinia	7	
	late to very late	tardive à très tardive	spät bis sehr spät	tardía a muy tardía		Filicia, Finesse, Florin, Sussette	8	
	very late	très tardive	sehr spät	muy tardía		Judibell, Malwina	9	
43. (*)	QN	MG	(+)					
	Time of beginning of fruit ripening	Époque de début de maturité des fruits	Zeitpunkt des Beginns der Fruchtreife	Hora de inicio de la maduración del fruto				
	very early	très précoce	sehr früh	muy temprana		Flair, Lorette, Sweet Charlie	1	
	very early to early	très précoce à précoce	sehr früh bis früh	muy temprana a temprana		Avarosa, Honeoye, Julyana, Murano	2	
	early	précoce	früh	temprana		Altess, CIR 104, Deluxe, Drisstrawfive, Floriante, Verity	3	
	early to medium	précoce à moyenne	früh bis mittel	temprana a media		Cirafine, Evita, Gorella, Janiss, Pink Extara, Senga Sengana	4	
	medium	moyenne	mittel	media		Cijosée, Cupid, Gladis, Malling Opal, Velvet	5	
	medium to late	moyenne à tardive	mittel bis spät	media a tardía		Bolero, Faith, Laetitia, Marionnet 100	6	
	late	tardive	spät	tardía		Flamenco, Yamaska	7	
	late to very late	tardive à très tardive	spät bis sehr spät	tardía a muy tardía		Finesse, Seascape, Sophie, Sussette	8	
	very late	très tardive	sehr spät	muy tardía		GH 75, Judibell, Malwina	9	

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
44. (*)	QL	VG				
	Flowering runners	Stolons à fleurs	Blühende Ausläufer	Estolones con flores		
	absent	absents	fehlend	ausente	Elsanta	1
	present	présents	vorhanden	presente	Aromas, Cirafine, Florika	9

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

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

- (a) Observations should be made on plants shortly before the beginning of fruit ripening. Observations on the leaf should be made on fully-developed leaves.
- (b) Observations should be made on plants when they are in full flower. Unless otherwise indicated, observations on the flower should not be made on the terminal flower. In the case of remontant varieties, the characteristics should be observed on the first flush of flowers.
- (c) Observations should be made after the end of bearing. In case of dayneutral varieties the observations should be carried out at the same time, at the end of bearing of the non-remontant varieties.
- (d) Observations should be made on one-year-old plants when picking ripe, excluding the terminal fruits of the infructescences.

8.2 *Explanations for individual characteristics*

Ad. 1: Plant : growth habit



1
upright



3
semi-upright



5
spreading

Ad. 2: Plant: density of foliage



3
sparse



5
medium



7
dense

Ad. 3: Plant: vigor

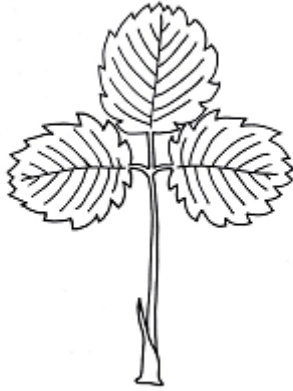
The plant vigor should be considered as the overall abundance of vegetative growth. In particular it is related to height and diameter of the plant.

Ad. 6: Stolon: intensity of anthocyanin coloration

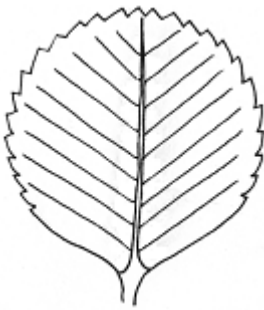
Observations should be made on the middle third of the stolon.

Ad. 7: Leaf: size

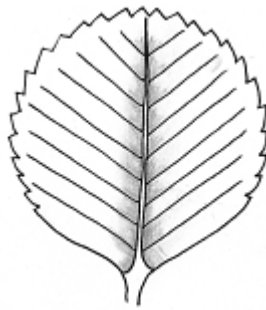
Observations should be made excluding the petiole and stipules.



Ad. 9: Leaf: rugosity



1
absent or very weak



2
weak



3
medium



4
strong

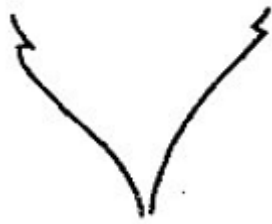


5
very strong

Ad. 10: Leaf: glossiness

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

Ad. 12: Terminal leaflet: shape of base



1
acute



2
obtuse



3
rounded

Ad. 13: Terminal leaflet: margin



1
serrate



2
serrate to crenate

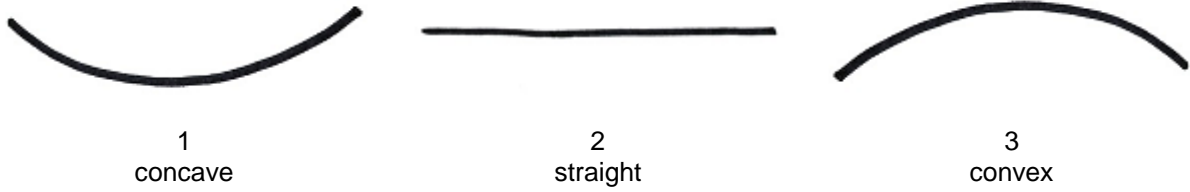


3
crenate

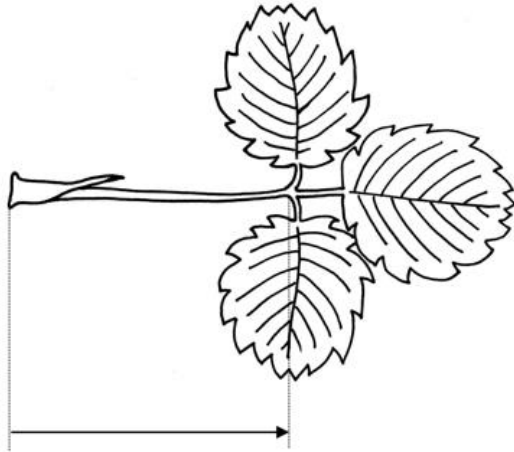
Ad. 14: Terminal leaflet: depth of incision of margin



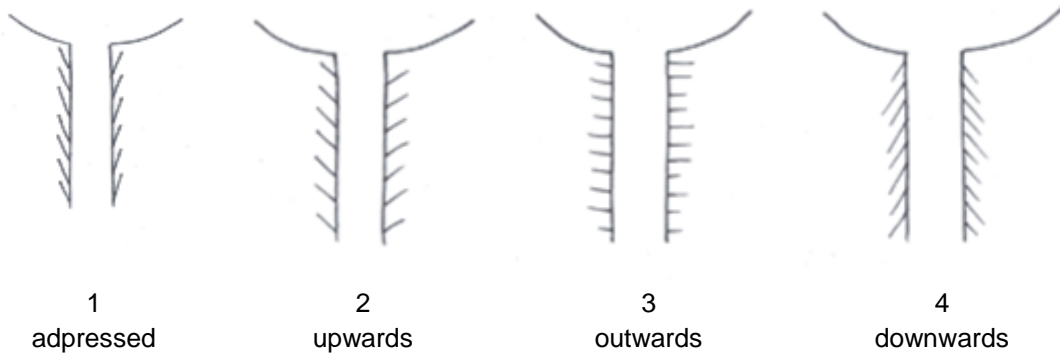
Ad. 15: Terminal leaflet: shape in cross section



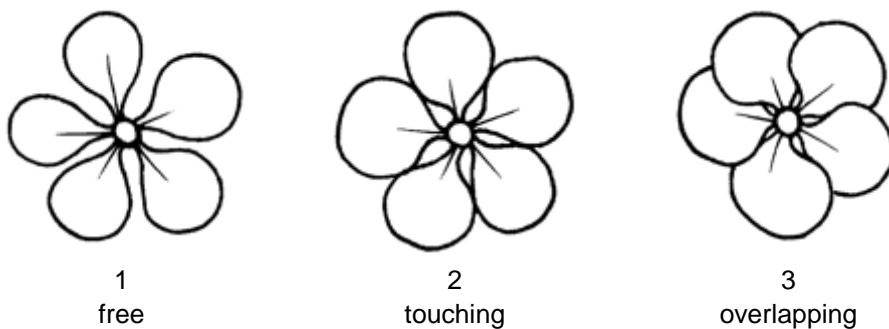
Ad. 16: Petiole: length



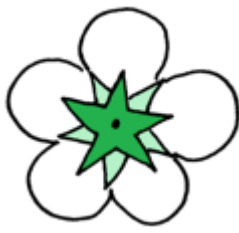
Ad. 17: Petiole: attitude of hairs



Ad. 20: Flower: arrangement of petals



Ad. 21: Flower: size of calyx in relation to corolla



1
smaller

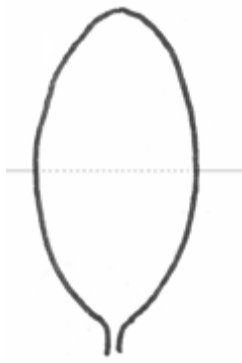


2
same size

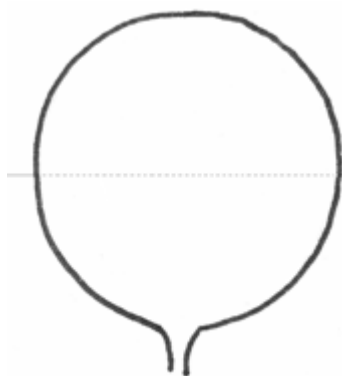


3
larger

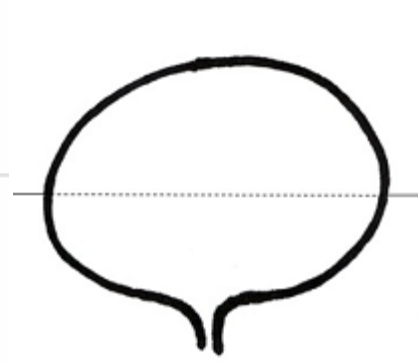
Ad. 23: Petal: shape



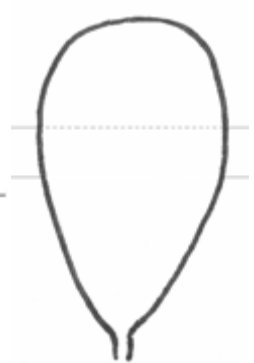
1
elliptic



2
circular



3
transverse elliptic



4
ovate

Ad. 27: Fruit: size

Observations should be made visually, or by assessing the fruit weight.

Ad. 28: Fruit: shape



1
reniform



2
conical



3
cordate



4
ovate



5
oblong



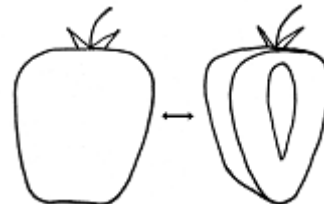
6
rhombic



7
oblate

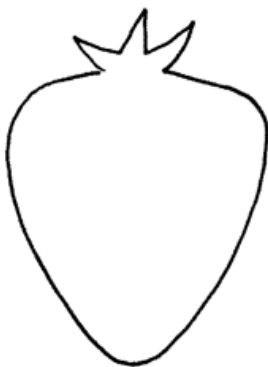


8
circular

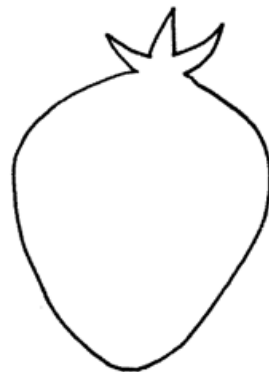


9
wedged

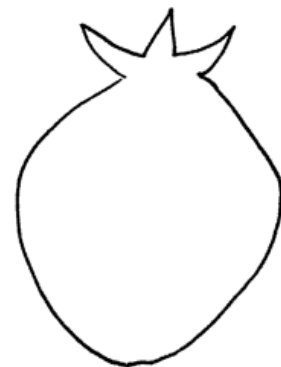
Ad. 29: Fruit: position of maximum diameter



1
strongly towards calyx

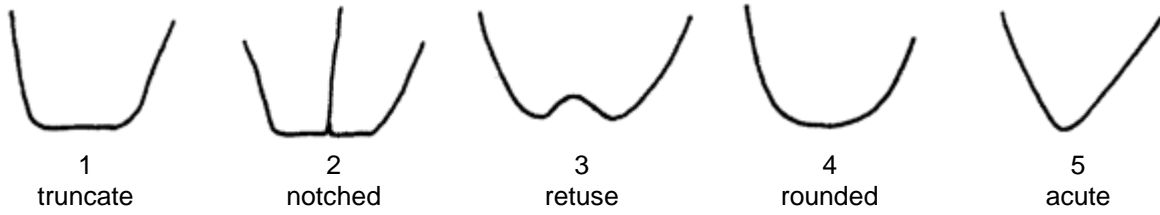


2
moderately towards calyx



3
at middle

Ad. 30: Fruit: shape of apex



Ad. 31: Fruit: shape at calyx end

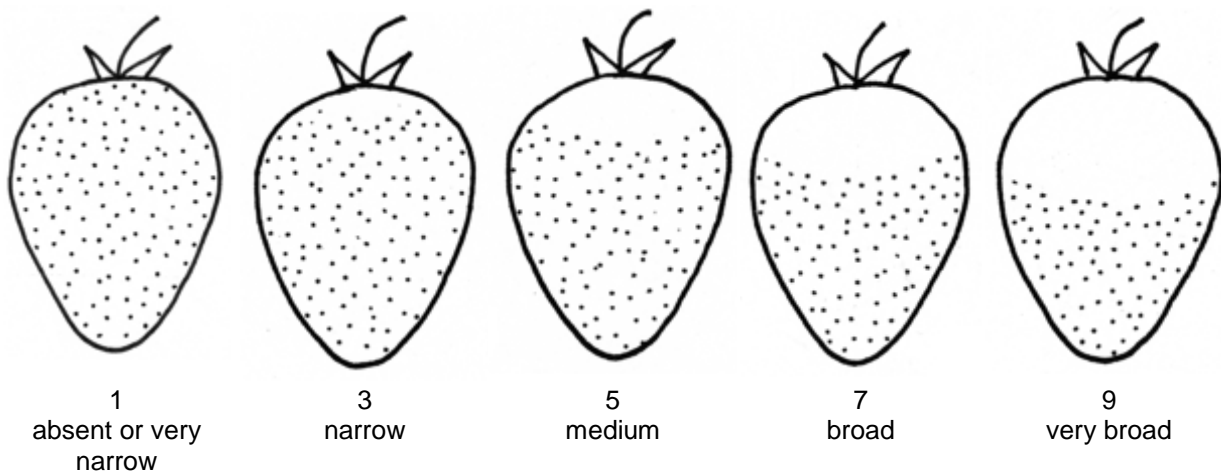


Observations should be made excluding the neck.

Ad. 32: Fruit: color

Observations should be made on the side of the fruit which is exposed to the sun.

Ad. 33: Fruit: width of band without achenes

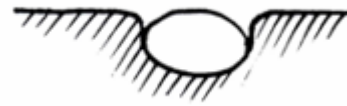


Ad. 34: Fruit: position of achenes

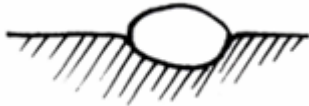
Observations should be made on the central part of fruit surface.



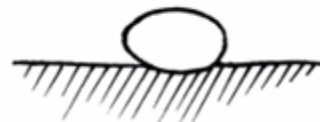
1
strongly below surface



2
slightly below surface



3
level with surface



4
above surface

Ad. 35: Fruit: color of achenes

Observations should be made on the sunny side of the fruit.

Ad. 36: Fruit: density of achenes

Observations should be made on the central part of the fruit by counting in a defined area [e.g. a window of 1 cm²] or by visual assessment of the density of achenes on the skin.

Ad. 37: Fruit: position of calyx attachment



1
inserted



2
level with fruit



3
raised

Ad. 38: Fruit: attitude of sepals



1
upwards



2
outwards



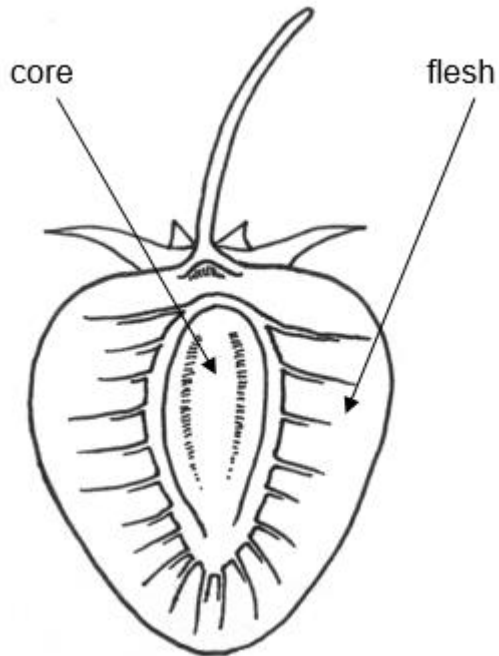
3
downwards

Ad. 39: Fruit: diameter of calyx in relation to diameter of fruit

Observations should be made with the sepals held flat.

Ad. 40: Fruit: color of flesh

Observations should be made excluding the core.



Ad. 41: Fruit: color of core

See Ad. 40.

Ad. 42: Time of beginning of flowering

The time of beginning of flowering is reached when 50% of plants show at least one open flower.

Ad. 43: Time of beginning of fruit ripening

The time of beginning of fruit ripening is reached when 50 % of plants provide of at least one fully colored fruit.

9. Literature

Bundessortenamt (ed.), 2015: Beschreibende Sortenliste Erdbeeren. Landbuch Verlag, Hannover, DE, 128 pp.

Centre technique interprofessionnel des fruits et légumes (ed.), 1997: La fraise - Plant et variétés. Paris, FR, 103 pp.

Groupe d'Étude de contrôle des variétés et des Semences (GEVES), 2003: Les Variétés de Fraisier - anciennes, actuelles, nouvelles (CD-ROM). La Minière, FR

Istituto Sperimentale per la Frutticoltura, 2002: Monografia di cultivar di fragola. Roma, 291 pp.

Japan Seed Trade Association, 1978: The report on the characterization and classification of strawberry varieties. Japan Seed Trade Association, Tokyo (by consignment of the MAFF), JP, 20 pp.

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="Fragaria L."/>
1.2	Common name	<input type="text" value="Strawberry"/>
1.3	Species (please indicate):	<input type="text"/>
2. Applicant		
	Name	<input type="text"/>
	Address	<input type="text"/>
	Telephone No.	<input type="text"/>
	Fax No.	<input type="text"/>
	E-mail address	<input type="text"/>
	Breeder (if different from applicant)	<input type="text"/>
3. Proposed denomination and breeder's reference		
	Proposed denomination (if available)	<input type="text"/>
	Breeder's reference	<input type="text"/>

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

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross []
(please state parent variety)
(.....) x (.....)
female parent male parent

(b) partially known cross []
(please state known parent variety(ies))
(.....) x (.....)
female parent male parent

(c) unknown cross []

4.1.2 Mutation []
(please state parent variety)

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

4.1.4 Other []
(Please provide details)

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

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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4.2	Method of propagating the variety	
4.2.1	Vegetative propagation	
(a)	<i>In vitro</i> propagation	[]
(b)	Runners	[]
(c)	Other (state method)	[]
	<input type="text"/>	
4.2.2	Seed-propagated varieties	[]
	<input type="text"/>	
4.2.3	Other (Please provide details)	[]
	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

Characteristics	Example Varieties	Note
5.1 Plant : growth habit (1)		
upright	Vibrant	1 []
upright to semi-upright	Korona	2 []
semi-upright	Senga Sengana	3 []
semi-upright to spreading	Weiße Ananas	4 []
spreading	Lucida Perfecta	5 []
5.2 Leaf: size (7)		
very small		1 []
very small to small		2 []
small	Fontaine	3 []
small to medium	Sans Rivale, Toscana	4 []
medium	Gorella, Korona, Senga Sengana	5 []
medium to large	Elsanta, Honeoye, Salsa	6 []
large	Aprica, Darselect	7 []
large to very large	Merkur, Ramir	8 []
very large		9 []
5.3 Petiole: attitude of hairs (17)		
adpressed	Elianny, Vivara	1 []
upwards	Darselect, Elsanta	2 []
outwards	Albion, Filicia, Malwina	3 []
downwards	Cirano	4 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.4 Flower: diameter (19)		
very small		1 []
very small to small	Fontaine	2 []
small	Darestivale, Sans Rivale	3 []
small to medium	Majestic, Mara des Bois, Senga Sengana, Yamaska	4 []
medium	Bogota, Elsanta, Everest, Korona	5 []
medium to large	Camarosa, Chandler, Darselect	6 []
large	Cambridge Favourite, Ines	7 []
large to very large		8 []
very large	SG 0203	9 []
5.5 Flower: size of calyx in relation to corolla (21)		
smaller	Jussara, Toscana	1 []
same size	Filicia, Gladis	2 []
larger	Camarosa, Candiss, Everest	3 []
5.6 Petal: color of upper side (25)		
greenish white		1 []
white	Gariguette	2 []
light pink	Marajox, Pikan	3 []
medium pink	Frel	4 []
dark pink	Tarpan	5 []
red		6 []
5.7 Fruit: length in relation to diameter (26)		
very low	Mieze Schindler	1 []
low	Lia, Sussette	2 []
medium	Gorella, Honeoye	3 []
high	Malling Centenary, Osiris	4 []
very high	Pantagruella	5 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.8 Fruit: size (27)		
very small	Rosa Perle, Ulrichsburg	1 []
very small to small	Fontaine	2 []
small	Linne, Summer Breeze Snow	3 []
small to medium	Toscana, Weiße Ananas	4 []
medium	BBB PO 01, Sans Rivale	5 []
medium to large	Finesse, MA 65	6 []
large	Altess, Lia	7 []
large to very large	Albion, Verity	8 []
very large		9 []
5.9 Fruit: shape (28)		
reniform	Jumbo	1 []
conical	Albion, Clery, Everest, Matis, Murano, Sweet Charlie	2 []
cordate	Malling Champion	3 []
ovate	Quarantaine de Prin	4 []
oblong		5 []
rhombic	Lumotar	6 []
oblate	BBB PO 01	7 []
circular	Florika	8 []
wedged	Konia	9 []
5.10 Fruit: color (32)		
pinkish white	Weiße Ananas	1 []
yellowish white	Lucida Perfecta	2 []
light orange	Merton Dawn	3 []
medium orange	Cambridge Favourite	4 []
orange red	Gorella	5 []
pink		6 []
light red		7 []
medium red	Elsanta, Royal Sovereign, Sweet Charlie	8 []
dark red	Honeoye, Seascape, Senga Sengana	9 []
blackish red	Arista	10 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.11 Fruit: position of achenes (34)		
strongly below surface	Mieze Schindler	1 []
slightly below surface	Albion, Kimberley	2 []
level with surface	Malling Centenary, Osiris	3 []
above surface	Alice, Frugodi, Toscana	4 []
5.12 Fruit: position of calyx attachment (37)		
inserted	Finesse	1 []
level with fruit	Lia, Murano, Senga Sengana, Sweet Charlie	2 []
raised	Ciflorette, Gariguetta, NF 421	3 []
5.13 Fruit: attitude of sepals (38)		
upwards	Gariguetta	1 []
outwards	Altess, Lia, Osiris	2 []
downwards	Pink Extara	3 []
5.14 Fruit: diameter of calyx in relation to diameter of fruit (39)		
much smaller	Momoirohoppé 8 Go	1 []
slightly smaller	Lia, Tecla, Vivaldi	2 []
same size	Avarosa, Candiss, Cirano, Cupid, Daroyal	3 []
slightly larger	Gladis, Murano	4 []
much larger	ASF 2021, FD 1604	5 []
5.15 Time of beginning of flowering (42)		
very early	Lorette	1 []
very early to early	Avarosa, Murano, Starlette	2 []
early	Anabelle, Camarillo, Charlotte	3 []
early to medium	Evie 3, Sweet Eve	4 []
medium	Gorella, Hansawhit, Osiris, Velvet	5 []
medium to late	Avamaria, Driscoll Jubilee	6 []
late	Laetitia, Rinia	7 []
late to very late	Filicia, Finesse, Florin, Sussette	8 []
very late	Judibell, Malwina	9 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.16 Time of beginning of fruit ripening (43)		
very early	Flair, Lorette, Sweet Charlie	1 []
very early to early	Avarosa, Honeoye, Julyana, Murano	2 []
early	Altess, CIR 104, Deluxe, Drisstrawfive, Floriante, Verity	3 []
early to medium	Cirafine, Evita, Gorella, Janiss, Pink Extara, Senga Sengana	4 []
medium	Cijosée, Cupid, Gladis, Malling Opal, Velvet	5 []
medium to late	Bolero, Faith, Laetitia, Marionnet 100	6 []
late	Flamenco, Yamaska	7 []
late to very late	Finesse, Seascape, Sophie, Sussette	8 []
very late	GH 75, Judibell, Malwina	9 []
5.17 Flowering runners (44)		
absent	Elsanta	1 []
present	Aromas, Cirafine, Florika	9 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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6. Similar varieties and differences from these varieties

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

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Fruit: color of flesh</i>	<i>orange red</i>	<i>dark red</i>

Comments:

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#7. Additional information which may help in the examination of the variety

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

Yes No

(If yes, please provide details)

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

Yes No

(If yes, please provide details)

7.3 Other information

7.3.1 Additional information on the bearing type

The variety is

not remontant

partially remontant

fully remontant

day neutral

under the following growing conditions:

- temperature _____ °C

- day length _____ h

7.3.2 Additional information on chilling requirements

- Indicate the minimum number of chilling hours:
_____ hours

7.3.3 Resistance to pests and diseases yes [...] no [...]

7.3.4 A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder's reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (<http://www.upov.int/tgp/en/>).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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8. Authorization for release

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

Yes [] No []

(b) Has such authorization been obtained?

Yes [] No []

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

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

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

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

(a) Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes []	No []
(b) Chemical treatment (e.g. growth retardant, pesticide)	Yes []	No []
(c) Tissue culture	Yes []	No []
(d) Other factors	Yes []	No []

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

.....

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

Yes []

(please provide details as specified by the Authority)

No []

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

Applicant's name

Signature Date