

PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS

Fragaria L.

STRAWBERRY

UPOV Code: FRAGA

Adopted on 28/11/2012

Entered into force on 01/01/2012

I **SUBJECT OF THE PROTOCOL**

The protocol describes the technical procedures to be followed in order to meet the Council Regulation (EC) N°2100/94 on Community Plant Variety Rights. The technical procedures have been agreed by the Administrative Council and are based on general UPOV Document TG/1/3 and UPOV Guideline TG/22/10 Rev. dated 28/03/2012 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies to all varieties of ***Fragaria L.***

II **SUBMISSION OF PLANT MATERIAL**

1. The Community Plant Variety Office (CPVO) is responsible for informing the applicant of

- the closing date for the receipt of plant material;
- the minimum amount and quality of plant material required;
- the examination office to which material is to be sent.

A sub-sample of the material submitted for test will be held in the variety collection as the definitive sample of the candidate variety.

The applicant is responsible for ensuring compliance with any customs and plant health requirements.

2. Final dates for receipt of documentation and material by the Examination Office

The final dates for receipt of requests, technical questionnaires and the final date or submission period for plant material will be decided by the CPVO and each Examination Office chosen.

The Examination Office is responsible for immediately acknowledging the receipt of requests for testing, and technical questionnaires. Immediately after the closing date for the receipt of plant material the Examination Office should inform the CPVO whether acceptable plant material has been received or not. However if unsatisfactory plant material is submitted the CPVO should be informed as soon as possible.

3. Plant material requirements

Information with the respect to closing dates and submission requirements of plant material for technical examination of varieties can be found on the CPVO website (www.cpvo.europa.eu) in the S2 Gazette.

Quality of plants: Should not be less than the standards laid down in Council Directive 2000/29/EC and its amendments concerning quarantine organisms, and Council Directive 2008/90/EC and Commission Directive 93/48/EEC and their amendments concerning organisms impairing quality, at the date of adoption of this protocol; please refer to "Eur-Lex" for the full text and in case of any subsequent amendments to the three aforesaid Directives.

Chemical treatment: The plant material must not have undergone any treatment unless the CPVO and the examination office allow or request such treatment. If it has been treated, full details of the treatment must be given.

Labelling of individual plants in sample: - Species
- File number of the application allocated by the CPVO
- Breeder's reference
- Examination office's reference (if known)
- Name of applicant
- The phrase "On request of the CPVO"

III CONDUCT OF TESTS

1. Variety collection

A variety collection will be maintained for the purpose of establishing distinctness of the candidate varieties in test. A variety collection may contain both living material and descriptive information. A variety will be included in a variety collection only if plant material is available to make a technical examination.

Pursuant to Article 7 of Council Regulation (EC) No. 2100/94, the basis for a collection should be the following:

- varieties listed or protected at the EU level or at least in one of the EEA Member States;
- varieties protected in other UPOV Member States;
- any other variety in common knowledge.

The composition of the variety collection in each Examination Office depends on the environmental conditions in which the Examination Office is located.

Variety collections will be held under conditions which ensure the long term maintenance of each accession. It is the responsibility of Examination Offices to replace reference material which has deteriorated or become depleted. Replacement material can only be introduced if appropriate tests confirm conformity with the existing reference material. If any difficulties arise for the replacement of reference material, Examination Offices must inform the CPVO. If authentic plant material of a variety cannot be supplied to an Examination Office the variety will be removed from the variety collection.

2. Material to be examined

Candidate varieties will be directly compared with other candidates for Community plant variety rights tested at the same Examination Office, and with appropriate varieties in the variety collection. When necessary an Examination Office may also include other candidates and varieties. Examination Offices should therefore make efforts to co-ordinate the work with other Offices involved in DUS testing of strawberry. There should be at least an exchange of technical questionnaires for each candidate variety, and during the test period, Examination Offices should notify each other and the CPVO of candidate varieties which are likely to present problems in establishing distinctness. In order to solve particular problems Examination Offices may exchange plant material.

3. Characteristics to be used

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in the Annex 1. All the characteristics shall be used, providing that observation of a characteristic is not rendered impossible by the expression of any other characteristic, or the expression of a characteristic is prevented by the environmental conditions under which the test is conducted. In the latter case, the CPVO should be informed. In addition the existence of some other regulation e.g. plant health, may make the observation of the characteristic impossible.

The Administrative Council empowers the President, in accordance with Article 23 of Commission Regulation (EC) No. 874/2009, to insert additional characteristics and their expression in respect of a variety.

4. Grouping of varieties

The varieties and candidates to be compared will be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety and which in their various states of expression are fairly evenly distributed throughout the collection. In the case of continuous grouping characteristics overlapping states of expression between adjacent groups is required to reduce the risks of incorrect allocation of candidates to groups. The characters used for grouping could be the following:

- a) Plant: growth habit (characteristic 1)
- b) Petal: colour of upper side (characteristic 27)
- c) Fruit: size (characteristic 29)
- d) Fruit: shape (characteristic 30)
- e) Fruit: colour (characteristic 32)
- f) Type of bearing (characteristic 48)

5. Trial designs and growing conditions

The minimum duration of tests will normally include at least two satisfactory crops of fruit. Tests will be carried out under conditions ensuring normal growth. The size of the plots will be such that plants or parts of plants may be removed for measuring and counting without prejudice to the observations which must be made up to the end of the growing period.

The test design is as follows

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

Unless otherwise indicated, all observations should be made on 20 plants or parts taken from each of 20 plants. In the case of parts of plants, the number to be taken from each of the plants should be 2.

6. Special tests

In accordance with Article 83(3) of Council Regulation (EC) No. 2100/94 an applicant may claim either in the Technical Questionnaire or during the test that a candidate has a characteristic which would be helpful in establishing distinctness. If such a claim is made and is supported by reliable technical data, a special test may be undertaken providing that a technically acceptable test procedure can be devised.

Special tests will be undertaken, with the agreement of the President of CPVO, where distinctness is unlikely to be shown using the characters listed in the protocol.

7. Standards for decisions

a) **Distinctness**

A candidate variety will be considered to be distinct if it meets the requirements of Article 7 of Council Regulation (EC) No. 2100/94.

b) **Uniformity**

For the assessment of uniformity a population standard of 1% and an acceptance probability of 95% should be applied.

For a sample size between 6 and 35 plants, one off-type is allowed.

c) **Stability**

A candidate will be considered to be sufficiently stable when there is no evidence to indicate that it lacks uniformity.

IV REPORTING OF RESULTS

After each recording season the results will be summarised and reported to the CPVO in the form of a UPOV model interim report in which any problems will be indicated under the headings distinctness, uniformity and stability. Candidates may meet the DUS standards after two fruiting periods but in some cases three fruiting periods may be required. When tests are completed the results will be sent by the Examination Office to the CPVO in the form of a UPOV model final report.

If it is considered that the candidate complies with the DUS standards, the final report will be accompanied by a variety description in the format recommended by UPOV. If not the reasons for failure and a summary of the test results will be included with the final report. The variety description should be supplemented by:

- (i) A colour photograph of transversally sliced fruit

The CPVO must receive interim reports and final reports by the date agreed between the CPVO and the examination office.

Interim reports and final examination reports shall be signed by the responsible member of the staff of the Examination Office and shall expressly acknowledge the exclusive rights of disposal of CPVO.

The interim report as well as the final report shall be sent by the Examination Office to the CPVO.

V LIAISON WITH THE APPLICANT

If problems arise during the course of the test the CPVO should be informed immediately so that the information can be passed on to the applicant. Subject to prior agreement, the applicant may be directly informed at the same time as the CPVO particularly if a visit to the trial is advisable.

VI ENTRY INTO FORCE

The present protocol enters into force on **01/01/2012**. Any ongoing DUS examination of candidate varieties started before the aforesaid date will not be affected by the approval of the new TP. Technical examinations of candidate varieties are carried out according to the TP in force when the DUS test starts. The starting date of a DUS examination is considered to be the due date for the submission of plant material for the first growing period.

In cases where the CPVO requests to take-over a DUS report for which the technical examination has either been finalized or which is in the process of being carried out at the moment of the request, such report can only be accepted if the technical examination has been carried out according to the CPVO TP which was in force at the moment when the technical examination started.

ANNEXES TO FOLLOW

ANNEX I

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Legend:

- (*) UPOV asterisked characteristic
- (+) See Explanation on the Table of Characteristics
- (a)-(d) See Explanations on the Table of Characteristics
- G Grouping characteristics

Types of expression of characteristics:

- QL Qualitative characteristic
- QN Quantitative characteristic
- PQ Pseudo-qualitative characteristic

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ANNEX I

TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
1.	1.		Plant: growth habit		
(*)	(*)				
(+)	(+)	(a)	upright	Benton, Darselect, Gorella	1
QN	QN		semi-upright	Cirafine, Senga Sengana	2
G			spreading	Darsidor, Pantagruella	3
2.	2.		Plant: density of foliage		
(+)	(+)	(a)	sparse	Ciflorette, Elista	3
QN	QN		medium	Cirafine, Gorella	5
			dense	Cirano, Talisman	7
3.	3.	(a)	Plant: vigour		
(+)	(+)		weak	Senga Precosa	3
QN	QN		medium	Gorella	5
			strong	Elsanta, Grande	7
4.	4.		Plant: position of inflorescence in relation to foliage		
	(*)				
	QN	(c)	beneath	Crusader	1
			same level	Astino, Cambridge Favourite	2
			above	Direktor Paul Wallbaum, Drisstrawnine, Orly	3
5.	5.		Plant: number of stolons		
	(*)		absent or very few	Leo Alba, Rügen	1
QN	QN	(b)	few	Marala, Sans Rivale	3
			medium	Anabelle, Gorella	5
			many	Cambridge Favourite, Macherauchs Frühernte	7

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
6.	6.		Stolon: anthocyanin coloration		
(+)	(+)	(b)	absent or very weak	Tioga	1
QN	QN		weak	Cijosée, Tenira	3
			medium	Darselect, Gorella	5
			strong	Cigaline, Royal Sovereign	7
			very strong	Arking, Frel	9
7.	7.		Stolon: density of pubescence		
QN	QN	(b)	sparse	Chandler, Elista, Vigerla	1
			medium	Cambridge Favourite, Gariguette	2
			dense	Grande, Siabelle	3
8.	8.		Leaf: size		
(+)	(+)	(a)	small	Everest	3
QN	QN		medium	Camarosa	5
			large	Darselect	7
9.	9.		Leaf: colour of upper side		
PQ	PQ	(a)	yellow green	Tristar	1
			light green	Aliso, Cigaline, Georg Soltwedel	2
			medium green	Darselect, Gorella	3
			dark green	Direktor Paul Wallbaum, Macherauchs Frühernte	4
			blue green	Mrak	5
10.	10. (*)		Leaf: blistering		
(+)	(+)	(a)	absent or weak	Anabelle, Bemanil, Marmion	1
QN	QN		medium	Cigaline, Senga Precosa	2
			strong	Cijosée, Jamil, Marie France	3
11.	11. (*)		Leaf: glossiness		
	(*)	(a)	absent or weak	Aptos, Bogota, Mrak	1
QN	QN		medium	Darestivale, Irvine	2
			strong	Mara des Bois, Sweet Delight, Tioga	3

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
12.	12.		Leaf: variegation		
QL	QL	(a)	absent		1
			present		9
13.	13. (*)		Terminal leaflet: length in relation to width		
QN	QN	(a)	shorter	Siabelle	1
			equal	Chandler, Crusader	2
			moderately longer	Elsanta, Montrose, Redgauntlet	3
			much longer	Gariguette, Macherauchs Frühernte	4
14.	14. (*)		Terminal leaflet: shape of base		
(+)	(+)		acute	Gorella, Regina	1
PQ	PQ	(a)	obtuse	Darselect, Senga Sengana	2
			rounded	Crusader, Florika, Marie France	3
15.	15.		Terminal leaflet: margin		
(+)	(+)		serrate	Garriguette, Promise, Tenira	1
PQ	PQ	(a)	serrate to crenate	Commitment	2
			crenate	Cambridge Favourite, Gentonova, Irvine	3
16.	16.		Terminal leaflet: shape in cross section		
(+)	(+)		concave	Hapil, Ostara, Senga Precosana	1
QN	QN	(a)	straight	Georg Soltwedel, Mara des Bois	2
			convex	Cambridge Favourite, Domanil, Madame Moutot	3
17.	17.		Petiole: length		
QN	QN	(a)	short	Pantagruella	3
			medium	Polka	5
			long	Darselect	7

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
18.	18.		Petiole: attitude of hairs		
(+)	(+)	(a)	upwards	Elista, Georg Soltwedel	1
QN	QN		slightly outwards	Darselect, Elsanta	2
			horizontal	Cambridge Favourite, Direktor Paul Wallbaum, Mara des Bois	3
19.	19.		Stipule: anthocyanin coloration		
QN	QN	(b)	absent or very weak	Elista	1
			weak	Crusader	3
			medium	Gorella	5
			strong	Talisman	7
			very strong	Royal Sovereign	9
20.	20.		Inflorescence: number of flowers		
QN	QN	(c)	few	Pantagruella	3
			medium	Lambada	5
			many	Elsanta	7
21.	21.		Pedicel: attitude of hairs		
(+)	(+)		upwards	Cigaline	1
QN	QN	(d)	slightly outwards	Darselect	2
			horizontal	Parker	3
22.	22.		Flower: diameter		
QN	QN	(c)	small	Rapella, Redgauntlet	3
			medium	Gorella, Mara des Bois	5
			large	Darselect, Domanil	7
23.	23. (*)		Flower: arrangement of petals		
(+)	(+)		free	Cirafine, Talisman	1
QN	QN	(c)	touching	Darsidor, Regina	2
			overlapping	Florika, Senga Gigana	3

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
24.	24.		Flower: size of calyx in relation to corolla		
(*)	(*)	(c)	smaller	Bogota, Grande, Nordika	1
QN	QN		same size	Darselect, Korona	2
			larger	Cigoulette, Regina	3
25.	25.		Flower: stamen		
(*)	(*)	(c)	absent	Pandora, Yamaska	1
QL	QL		present	Gariguette	9
26.	26.		Petal: length in relation to width		
QN	QN	(c)	much shorter	Florika, Senga Gigana	1
			moderately shorter	Gento Nova, Tioga	2
			equal	Darselect, Redgauntlet	3
			moderately longer	Ciflorette, Elsanta, Gorella	4
			much longer	Talisman	5
27.	27.		Petal: colour of upper side		
	(*)	(c)	greenish white		1
PQ	PQ		white	Gariguette	2
			pink	Frel, Marajox, Pikan	3
G			red	Tarpan	4
28.	28.		Fruit: length in relation to width		
	(*)	(d)	much shorter	Early Dawn	1
QN	QN		moderately shorter	Elista, Madame Moutot	2
			equal	Gento Nova, Gorella, Merton Dawn	3
			moderately longer	Gariguette, Talisman	4
			much longer	Ciflorette, Marie France	5

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
29.	29.		Fruit: size		
	(*)	(d)	very small	Astino, Frel	1
(+)	(+)		small	Senga Precosa	3
QN	QN		medium	Mara des Bois, Senga Tigaiga	5
			large	Darselect, Drisstrawnine, Domanil	7
G			very large	Maxim, Ventana	9
30.	30.		Fruit: shape		
	(*)	(d)	reniform	Early Dawn, Favette	1
(+)	(+)		conical	Gorella, Matis	2
PQ	PQ		cordate	Direktor Paul Wallbaum	3
			ovoid	Florika, Macherauchs Frühernte	4
			cylindrical	Chandler, Marie France	5
			rhomboid	Gariguette, Pantagruella	6
			obloid	Elista	7
			globose	Grande, Madame Moutot	8
G			wedged	Georg Soltwedel	9
31.	31.		Fruit: difference in shape of terminal and other fruits		
(+)	(+)		none or very slight	Cambridge Favourite, Vigerla	1
QN	QN		slight	Gariguette, Senga Sengana	3
			moderate	Darselect, Gorella	5
			large	Bogota, Georg Soltwedel, Talisman	7
			very large	Maxim	9

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
32.	32.		Fruit: colour		
	(*)	(d)	whitish yellow	Weisse Ananas	1
PQ	PQ		light orange	Madame Moutot, Merton Dawn	2
			medium orange	Cambridge Favourite	3
			orange red	Ciflorette, Gorella	4
			medium red	Elsanta, Royal Sovereign	5
			dark red	Seascape, Senga Sengana	6
G			blackish red	Honey Oya, Rubina	7
33.	33.		Fruit: evenness of colour		
(+)	(+)	(d)	even or very slightly uneven	Valeta	1
QN	QN		slightly uneven	Tamella	2
			strongly uneven	Marie France	3
34.	34.		Fruit: glossiness		
QN	QN	(d)	weak	Bemanil, Madame Moutot	1
			medium	Darselect, Macherauchs Frühernte	2
			strong	Elsanta, Redgauntlet	3
35.	35.		Fruit: evenness of surface		
(+)	(+)	(d)	even or very slightly uneven	Valeta	1
QN	QN		slightly uneven	Senga Precosana	2
			strongly uneven	Redgauntlet	3
36.	36.		Fruit: width of band without achenes		
(+)	(+)	(d)	absent or very narrow	Drisstrawnine, Senga Sengana	1
QN	QN		narrow	Elsanta, Mara des Bois, Pandora	3
			medium	Darselect, Gariguette	5
			broad	Pantagruella	7
			very broad	Belrubi, Earliglo	9

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
37.	37.		Fruit: position of achenes		
(*)	(*)				
(+)	(+)	(d)	below surface	Cirafine, Elista	1
QN	QN		level with surface	Darselect, Regina	2
			above surface	Brighton, Rigensa	3
38.	38.		Fruit: position of calyx attachment		
(+)	(+)	(d)	inserted	Aliso, Favette	1
QN	QN		level with fruit	Cambridge Favourite, Talisman	2
			raised	Gariguette, Regina	3
39.	39.		Fruit: attitude of sepals		
(+)	(+)	(d)	upwards	Bounty, Gariguette	1
QN	QN		outwards	Angéline, Framura	2
			downwards	Ciflorette, Elvira	3
40.	40.		Fruit: diameter of calyx in relation to diameter of fruit		
(+)	(+)				
QN	QN	(d)	much smaller	Favette, Lumina	1
			slightly smaller	Ostara, Senga Sengana	2
			same size	Cirafine, Tenira	3
			slightly larger	Darselect, Senga Precosa	4
			much larger	Angéline, Cambridge Favourite	5
41.	41.		Fruit: adherence of calyx		
QN	QN	(d)	very weak	Confitura, Primek	1
			weak	Senga Precosa, Siabelle	3
			medium	Mara des Bois, Senga Sengana	5
			strong	Darselect, Redgauntlet	7
			very strong	Rainier	9

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
42.	42.		Fruit: firmness		
QN	QN	(d)	very soft	Madame Moutot, Marie France	1
			soft	Gento, Grande	3
			medium	Gariguette, Gorella	5
			firm	Darselect, Tigaiga	7
			very firm	Holiday, Parker	9
43.	43.		Fruit: colour of flesh (excluding core)		
(+)	(+)	(d)	whitish	Madame Moutot, Regina	1
PQ	PQ		light pink	Direktor Paul Wallbaum, Senga Precosa	2
			orange red	Elsanta, Talisman	3
			light red	Cambridge Favourite, Ciflorette	4
			medium red	Gariguette, Elista	5
			dark red	Senga Tigaiga	6
44.	44.		Fruit: colour of core		
(+)	(+)	(d)	white	Orly	1
PQ	PQ		light red	Figaro	2
			medium red	Drisstrawnine, Marvel	3
45.	45.		Fruit: cavity		
QN	QN	(d)	absent or small	Gerida, Onebor	1
			medium	Agana, Douglas	2
			large	Cortina, Fiesta, Commitment	3
46.	46.		Time of beginning of flowering		
	(*)		very early	Karina, Sweet Charlie	1
QN	QN		early	Gariguette, Pantagruella, Driscoll Lanai, Aromas	3
			medium	Cambridge Favourite, Elsanta	5
			late	Daisy, Tago	7
			very late	Marzheyw, Pandora	9

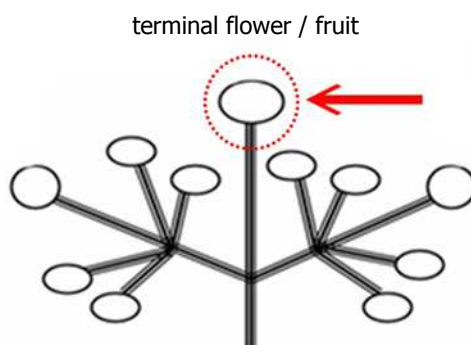
CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
47.	47.		Time of beginning of fruit ripening		
(+)	(+)		very early	Tamar	1
QN	QN		early	Ventana	3
			medium	Driscoll Lanai	5
			late	Aromas, Driscoll Jubilee	7
			very late		9
48.	48. (*)		Type of bearing		
(+)	(+)		not remontant	Cambridge Favourite, Gariguette	1
PQ	PQ		partially remontant	Redgauntlet, Sweet Charlie	2
			fully remontant	Brighton, Cirafine, Mara des Bois	3
G			day neutral	Florika, Aromas	4

EXPLANATIONS AND METHODS

Explanations covering several characteristics

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

- a) Observations on the plant and leaf which should be made on plants shortly before the beginning of fruit ripening. Observations on the leaf which should be made on fully-developed leaves.
- b) Observations on the stipule and the stolon which should be made after the end of bearing (excluding day-neutral varieties).
- c) Observations of the inflorescence (including the flower) which 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.
- d) Unless otherwise indicated, observations on the fruit should not be made on terminal fruits.



Explanations for individual characteristics

Ad. 1: Plant: growth habit



1
upright

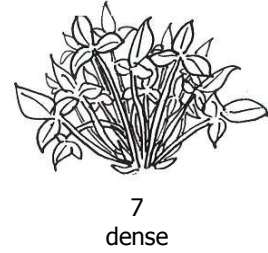
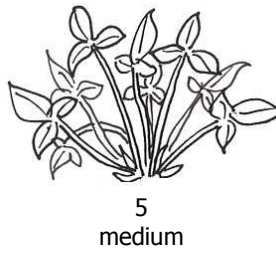
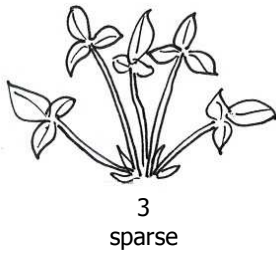


2
semi-upright



3
spreading

Ad. 2: Plant: density of foliage



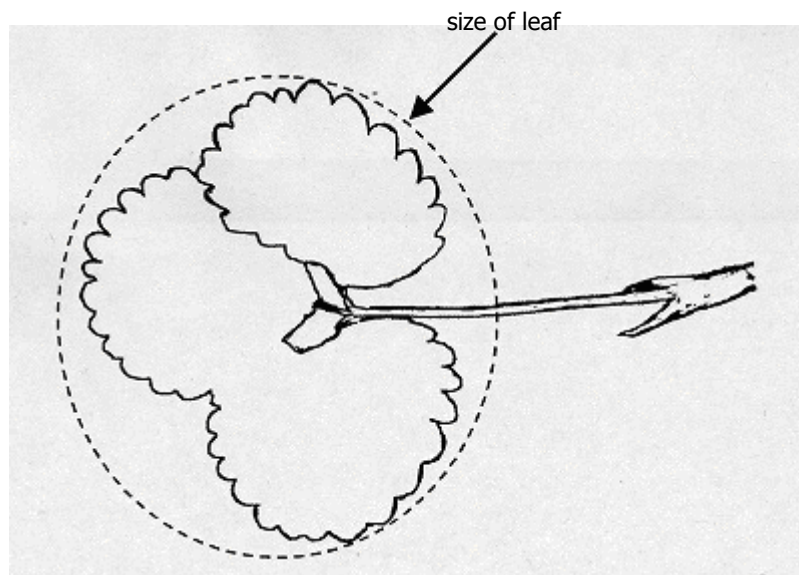
Ad. 3: Plant: vigour

The plant vigour should be considered as the overall abundance of vegetative growth.

Ad. 6: Stolon: anthocyanin coloration

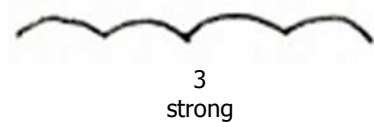
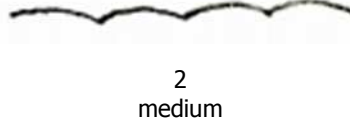
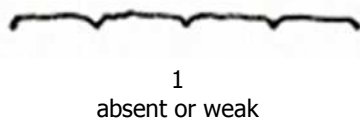
The anthocyanin coloration should be observed on the middle third of the stolon.

Ad. 8: Leaf: size

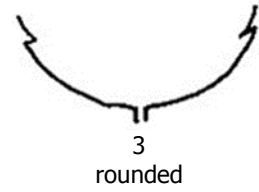
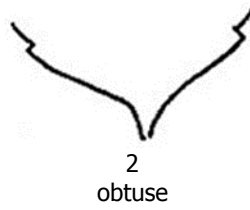
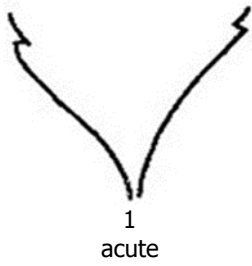


The size of leaf excludes the petiole and stipules.

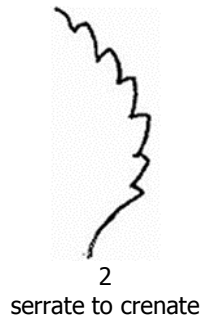
Ad. 10: Leaf: blistering



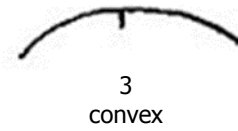
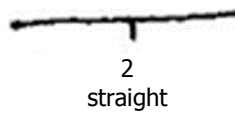
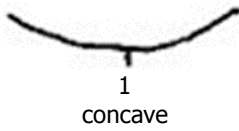
Ad. 14: Terminal leaflet: shape of base



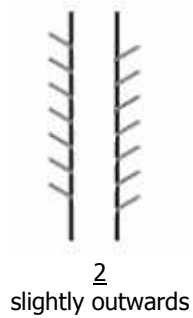
Ad. 15: Terminal leaflet: margin



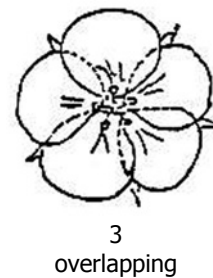
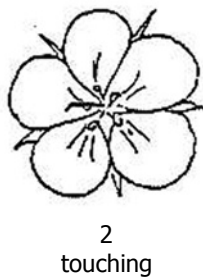
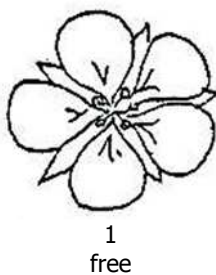
Ad. 16: Terminal leaflet: shape in cross section



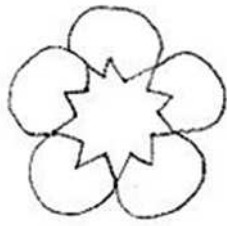
Ad. 18: Petiole: attitude of hairs
Ad. 21: Pedicel: attitude of hairs



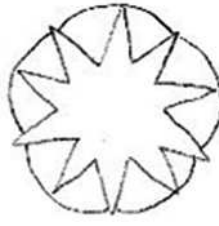
Ad. 23: Flower: arrangement of petals



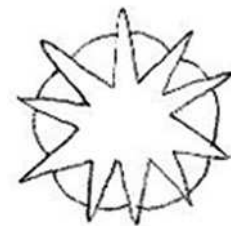
Ad. 24: Flower: size of calyx in relation to corolla



1
smaller



2
same size

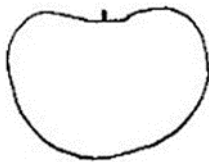


3
larger

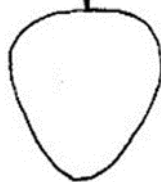
Ad. 29: Fruit: size

The fruit size is determined by the length, height and thickness.

Ad. 30: Fruit: shape



1
reniform



2
conical



3
cordate



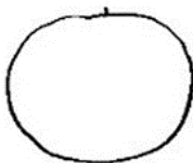
4
ovoid



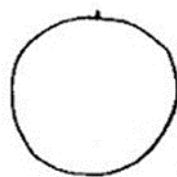
5
cylindrical



6
rhomboid



7
oblong



8
globose



9
wedged

Ad. 31: Fruit: difference in shape of terminal and other fruits

The diagram under the section "Explanations covering several characteristics" at the beginning of this chapter, illustrates the terminal and other fruits.

Ad. 33: Fruit: evenness of colour



1

even or very slightly uneven

2

slightly uneven

3

strongly uneven

Ad. 35: Fruit: evenness of surface



1

even or very slightly uneven

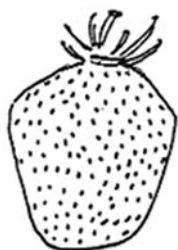
2

slightly uneven

3

strongly uneven

Ad. 36: Fruit: width of band without achenes



1

absent or very narrow

3

narrow

5

medium

7

broad

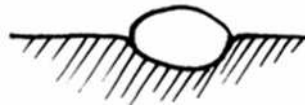
9

very broad

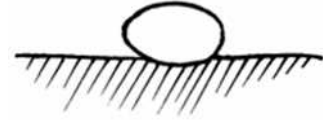
Ad. 37: Fruit: position of achenes



1
below surface

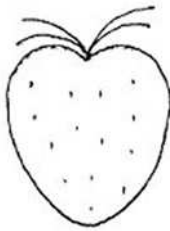


2
level with surface

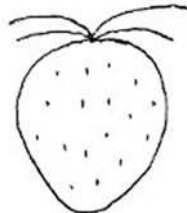


3
above surface

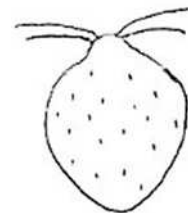
Ad. 38: Fruit: position of calyx attachment



1
inserted

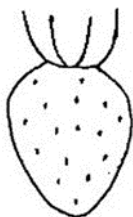


2
level with fruit

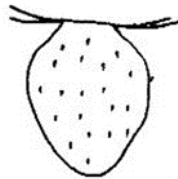


3
raised

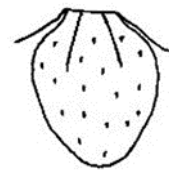
Ad. 39: Fruit: attitude of sepals



1
upwards



2
outwards



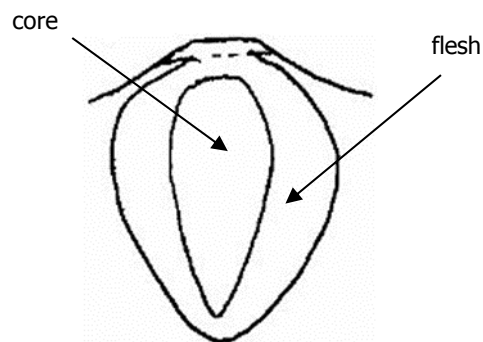
3
downwards

Ad. 40: Fruit: diameter of calyx in relation to diameter of fruit

The diameter of calyx is measured with the sepals held flat.

Ad. 43: Fruit: colour of flesh (excluding core)

Ad. 44: Fruit: colour of core



Ad. 47: Time of beginning of fruit ripening

The time when the first fruit in the first cluster ripens.

Ad. 48: Type of bearing

Not remontant:	Flowering and fruiting only once in a season;
Partly remontant:	The potential to flower and fruit twice in a season, but strongly influenced by the environment;
Fully remontant:	Flowering and fruiting twice in a season, largely irrespective of the environment;
Day neutral:	Flowering and fruiting multiple times, continuously in a season. Do not require decreasing day length for flower induction. In cases where stolons are observed, therefore, stolons produce flowers and fruits in the same season as the plant producing the stolon.

LITERATURE

- Baldini, E., Branzanti, E.C., 1964: Monografia delle principali cultivar di fragola non rifiorenti. Ist. Coltiv. Arboree, Università, Bologna, IT, 240 pp.
- Bazzocchi, R., Branzanti, E.C., Cristoferi, G., Rosati, P., 1972: Monografia delle principali cultivar di fragola non rifiorenti, (2°), C.N.R., Bologna, IT, 226 pp.
- Brossier, J.-O., 1962: Variétés de fraisiers non remontantes inscrites au catalogue des espèces et variétés, leur détermination et leur description. Institut national de la recherche agronomique (INRA), Paris, FR.
- Bundessortenamt (ed.), 1995: Beschreibende Sortenliste Beerenobst. Landbuch Verlag, Hannover, DE, 131 pp.
- Centre technique interprofessionnel des fruits et légumes (ed.), 1997: La fraise - Plant et variétés. Paris, FR, 103 pp.
- Dale, A.; Luby, J.J., 1990: The strawberry into the 21st century - Proceedings of the Third North American Strawberry Conference. Houston, Texas. Timber Press, Portland, Oregon, US.
- Fischer, M., 1995: Farbatlas Obstsorten. Eugen Ulmer Verlag, Stuttgart, DE.
- Götz, G., Silbereisen, R., 1989: Obstsorten-Atlas Kernobst, Steinobst, Beerenobst, Schalenobst. Eugen Ulmer GmbH & Co.
- Groupe d'Étude de contrôle des variétés et des Semences (GEVES), 2003: Les Variétés de Fraisier - anciennes, actuelles, nouvelles (CD-ROM). La Minière, FR.
- 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.
- Müllier, Bissmann, Poenicke, Rosenthal, Schindler: Deutschlands Obstsorten. Bd. 7, Fachhandel für Gartenbau, Kötzschenbroda-Dresden, Winzerstr. 55, DE.
- Naumann, W.-D; Seipp, D.; 1989: Erdbeeren. Ulmer Verlag, Stuttgart, DE, 256 pp.
- Sorge, P., 1984: Beerenobstsorten. Neumann Verlag, Leipzig-Radebeul, DE, 259 pp.

ANNEX II

The Technical Questionnaire is available on the CPVO website under the following reference:
CPVO-TQ/022/3