CPVO · OCVV
Community Plant Variety Office
Office Communautaire des Variétés Végétales

PROTOCOL FOR TESTS ON DISTINCTNESS, UNIFORMITY AND STABILITY

Prunus armeniaca L.

APRICOT

UPOV Code: PRUNU_ARM

Adopted on 31/03/2023

Entry into force on 31/03/2023

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CPVO-TP/070/3

1. SUBJECT OF THE PROTOCOL AND REPORTING

1.1 Scope of the technical protocol

This Technical Protocol applies to fruit varieties of ***Prunus armeniaca* L.** For the examination of rootstock varieties, the CPVO Technical Protocol for Prunus rootstocks should be applied.

The protocol describes the technical procedures to be followed in order to meet the requirements of Council Regulation 2100/94 on Community Plant Variety Rights. The technical procedures have been agreed by the Administrative Council and are based on documents agreed by the International Union for the Protection of New Varieties of Plants (UPOV), such as the General Introduction to DUS (UPOV Document TG/1/3 http://www.upov.int/export/sites/upov/resource/en/tg_1_3.pdf), its associated TGP documents (http://www.upov.int/tgp/en/) and the relevant UPOV Test Guideline TG/70/5 dated 26/10/2021 (https://www.upov.int/edocs/tgdocs/en/tg070.pdf) for the conduct of tests for Distinctness, Uniformity and Stability.

1.2 Entry into Force

The present protocol enters into force on **31/03/2023**. Any ongoing DUS examination of candidate varieties for which the first growing cycle for the purpose of observations has started (following the adequate period of establishment) before the aforesaid date will not be affected by the approval of the Technical Protocol.
Technical examinations of candidate varieties are carried out according to the TP in force when the first growing cycle for the purpose of observations following the adequate period of establishment starts.

In cases where the Office requests to take-over a DUS report for which the technical examination has either been finalized or which is in the process to be carried out at the moment of this 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 first growing cycle for the purpose of observations following the adequate period of establishment started.

1.3 Reporting between Examination Office and CPVO and Liaison with Applicant

1.3.1 Reporting between Examination Office and CPVO
The Examination Office shall deliver to the CPVO a preliminary report ("the preliminary report") no later than two weeks after the date of the request for technical examination by the CPVO.

The Examination Office shall also deliver to the CPVO a report relating to each growing period ("the interim report") and, when the Examination Office considers the results of the technical examination to be adequate to evaluate the variety or the CPVO so requests, a report relating to the examination ("the final report").

The final report shall state the opinion of the Examination Office on the distinctness, uniformity and stability of the variety. Where it considers those criteria to be satisfied, or where the CPVO so requests, a description of the variety shall be added to the report.

If a report is negative the Examination Office shall set out the detailed reasons for its findings.

The interim and the final reports shall be delivered to the CPVO as soon as possible and no later than on the deadlines as laid down in the designation agreement.

1.3.2 Informing on problems in the DUS test
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 pertinent agreement, on matters of particular urgency, the applicant may be directly informed at the same time as the CPVO particularly if a visit to the trial is advisable.

1.3.3 Sample keeping in case of problems
If the technical examination has resulted in a negative report, the CPVO shall inform the Examination Office as soon as possible in case that a representative sample of any relevant testing material shall be kept.

2. MATERIAL REQUIRED

2.1 Plant material requirements

Information with respect to the agreed closing dates and submission requirements of plant material for the technical examination of varieties can be found on https://public.plantvarieties.eu/publication in the special issue S2/S3 of the Official Gazette of the Office. General requirements on submission of samples are also to be found following the same link.

2.2 Informing the applicant of plant material requirements

The CPVO informs the applicant that

- he is responsible for ensuring compliance with any customs and plant health requirements.
- the plant material supplied should be visibly healthy, not lacking in vigour, nor affected by any important pest or disease.
- 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.

2.3 Informing about problems on the submission of material

The Examination Office shall report to the CPVO immediately in cases where the test material of the candidate variety has not arrived in time or in cases where the material submitted does not fulfil the conditions laid down in the request for material issued by the CPVO.

In cases where the examination office encounters difficulties to obtain plant material of reference varieties the CPVO should be informed.

3. METHOD OF EXAMINATION

3.1 Number of growing cycles

The duration of tests should be two independent growing cycles for the purpose of observation of characteristics following an adequate number of growing cycles for establishment of plants; at the end of each growing cycle for the purpose of observation of characteristics the competent authority will determine whether or not the following growing cycle is required.

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

The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles.

3.1.2 The growing cycle is considered to be the duration of a single growing season, beginning with bud burst (flowering and/or vegetative), flowering and fruit harvest and concluding when the following dormant period ends with the swelling of new season buds.

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" http://www.upov.int/edocs/tgpdocs/en/tgp_9.pdf.

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

3.4.1 Varieties resulting from crossing: Each test should be designed to result in a total of at least 3 trees.
Varieties resulting from mutation: Each test should be designed to result in a total of at least 9 trees.

3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 Special tests for additional characteristics

In accordance with Article 23 of Implementing Rules N° 874/2009 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 characteristics listed in the protocol.

3.6 Constitution and maintenance of a variety collection

The process for the constitution and the maintenance of a variety collection can be summarized as follows:

Step 1: Making an inventory of the varieties of common knowledge

Step 2: Establishing a collection ("variety collection") of varieties of common knowledge which are relevant for the examination of distinctness of candidate varieties

Step 3: Selecting the varieties from the variety collection which need to be included in the growing trial or other tests for the examination of distinctness of a particular candidate variety.

3.6.1 Forms of variety collection
The variety collection shall comprise variety descriptions and living plant material, thus a living reference collection. The variety description shall be produced by the EO unless special cooperation exists between EOs and the CPVO. The descriptive and pictorial information produced by the EO shall be held and maintained in a form of a database.

3.6.2 Living Plant Material
The EO shall collect and maintain living plant material of varieties of the species concerned in the variety collection.

3.6.3 Range of the variety collection
The living variety collection shall cover at least those varieties that are suitable to climatic conditions of a respective EO.

3.6.4 Making an inventory of varieties of common knowledge for inclusion in the variety collection

The inventory shall include varieties protected under National and Community PBR, varieties of National Catalogues (where such catalogues exist) and varieties in trade or in commercial registers.
In addition to the above, the inventory shall be extended to the appropriate to

- any commercial document in which varieties are marketed as propagating or harvested material, especially when there is no official registration system;
- any list including varieties which are publicly available within plant collections (varieties included in genetic resource collections, collection of old varieties, etc.);
- information provided by relevant plant experts;
- relevant example varieties referred to in the technical protocols.

3.6.5 Maintenance and renewal/update of a living variety collection
The EO shall maintain the variety collection under appropriate growing conditions (e.g. glasshouse, orchard, in vitro), where it shall be ensured that the plants are adequately irrigated, fertilised, pruned and protected from harmful pests and diseases. For the renewal of existing living material the identity of replacement living plant material shall be verified by conducting side-by-side plot comparisons between the material in the collection and the new material or by checking the identity of the new material against the variety description.

4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY

The prescribed procedure is to assess distinctness, uniformity and stability in a growing trial.

4.1 Distinctness

4.1.1 General recommendations
It is of particular importance for users of this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 9 'Examining Distinctness' (http://www.upov.int/edocs/tgpdocs/en/tgp_9.pdf) prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in this Technical Protocol.

Further guidance is provided in documents TGP/9 "Examining Distinctness" and TGP/8 "Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability".

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 Technical Protocols are familiar with the recommendations contained in the UPOV-General Introduction to DUS prior to making decisions regarding distinctness.

4.1.4 Number of plants/parts of plants to be examined
In case of varieties resulting from crossing, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 3 plants or parts taken from each of 3 plants and any other observations made on all plants in the test, disregarding any off-type plants.

In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 5.

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

In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 2.

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 third column of 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. colour 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 this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 10 'Examining Uniformity' (http://www.upov.int/edocs/tgpdocs/en/tgp_10.pdf) prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in this Technical Protocol:

4.2.2 This Technical Protocol has been developed for the examination of vegetatively propagated varieties. For varieties with other types of propagation the recommendations in the UPOV-General Introduction to DUS and document TGP/13 "Guidance for new types and species", Section 4.5 "Testing Uniformity" should be followed.

For the assessment of uniformity in a sample of 3 plants, a population standard of 1% and an acceptance probability

of at least 95% should be applied. In the case of a sample size of 3 plants, no off-types are allowed. For the assessment of uniformity in a sample of 9 plants, a population standard of 1 % and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 9 plants, 1 off-type is allowed.

4.3 Stability

4.3.1 It is of particular importance for users of this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 11 'Examining Stability' (http://www.upov.int/edocs/tgpdocs/en/tgp_11.pd)

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 plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. GROUPING OF VARIETIES AND ORGANISATION 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 organise the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

a) Petal: colour (characteristic 27)

b) Fruit: weight (characteristic 29)

c) Fruit: shape in lateral view (characteristic 30)

d) Fruit: ground colour of skin (characteristic 46)

e) Fruit: relative area of over colour (characteristic 49)

f) Fruit: colour of flesh (characteristic 51)

g) Time of beginning of flowering (characteristic 58)

h) Time of beginning of fruit ripening (characteristic 59)

5.4 If other characteristics than those from the Technical Protocol are used for the selection of varieties to be included into the growing trial, the EO shall inform the CPVO and seek the prior consent of the CPVO before using these characteristics.

5.5 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the UPOV-General Introduction to DUS and document TGP/9 "Examining Distinctness".

6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS

6.1 Characteristics to be used

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in the table of characteristics. 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 or by specific legislation on plant health. In the latter case, the CPVO should be informed.

The Administrative Council empowers the President, in accordance with Article 23 of Commission Regulation N°874/2009, to insert additional characteristics and their expressions in respect of a variety.

6.2. States of expression and corresponding notes

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

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

6.3 Example Varieties

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

6.4 Legend

For column 'CPVO N°':

G	Grouping characteristic	-see Chapter 5
QL	Qualitative characteristic	
QN	Quantitative characteristic	
PQ	Pseudo-qualitative characteristic	
(+)	Explanations for individual characteristics	-see Chapter 8.2

For column 'UPOV N°':
The numbering of the characteristics is provided as a reference to the UPOV guideline.

(*)	UPOV Asterisked characteristic	- Characteristics that are important for the international harmonization of variety descriptions.

For column 'Stage, method':

MG, MS, VG, VS		-see Chapter 4.1.5
(a)-(d)	Explanations covering several Characteristics	-see Chapter 8.1

7. TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
1. (+)	**1. (*)**	**VG**	**Tree: vigour**		
QN		**(a)**	very weak	Sub-zero	1
			weak	Ninfa, Rustic	2
			medium	Bergeron, Canino, Peeka, Rouge du Roussillon	3
			strong	Earle Orange, Magyar kajszi, Palsteyn, Pisana, Portici	4
			very strong	Monaco Bello, Moniquí, Solitaire, Viceroy	5
2. (+)	**2. (*)**	**VG**	**Tree: habit**		
PQ		**(a)**	fastigiate	Japan's Early	1
			upright	Harcot, Primando, Reale d'Imola	2
			upright to spreading	Ceglédi óriás, Paz, Proimo Tyrinthos, Veecot	3
			spreading	Blenheim, Canino, Grandir, Hargrand, Magyar kajszi	4
			drooping	Palsteyn, Pisana, Vesna	5
3. (+)	**3.**	**VG**	**Tree: number of branches**		
QN		**(a)**	few	Earle Orange, Roxana	1
			few to medium	Ceglédi zamatos	2
			medium	Bergeron, Magyar kajszi, San Castrese	3
			medium to many	Ceglédi napsugár	4
			many	Harlayne, Prevete, Roxy, Veecot	5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
4.	**4. (*)**	**VG**	**Tree: distribution of flower buds**		
QN		**(a)**	predominantly on spurs	Earle Orange, Nugget, Roxy, Royal Roussillon, Sun Glo	1
			equally on spurs and on one-year-old shoots	Bergeron, Bulida, Canino, San Castrese, Veecot	2
			predominantly on one-year-old shoots	Amal, Ouardi, Roxana	3
5. (+)	**5.**	**VG**	**One-year-old shoot: colour on sunny side**		
PQ		**(a)**	yellow brown	Cape Bebeco, Grandir	1
			red brown	Palsteyn, Royal, Veecot	2
			purple brown	Blenheim, Harcot	3
6. (+)	**6.**	**VG**	**One-year-old shoot: size of bud support**		
QN		**(a)**	small	Canino, Cape Bebeco, Harcot, Vitillo	1
			medium	Hargrand, Magyar kajszi, Palsteyn, Portici, Tri Gems	2
			large	Ceglédi arany, Himidi, Suapriseven	3
7. (+)	**7. (*)**	**VG**	**Young shoot: intensity of anthocyanin coloration of apex**		
QN			very weak	Anderheart	1
			very weak to weak	Cristal	2
			weak	Blenheim, Hargrand, Paz, Perla	3
			weak to medium	Ceglédi szilárd, Mambo	4
			medium	Cape Bebeco, Polonais, San Castrese, Sun Glo	5
			medium to strong	Ceglédi gömbölyű, Samouraï	6
			strong	Ceglédi bíbor, Harcot, Ladisun, Ohaicos, Ravival	7
			strong to very strong		8
			very strong	Rojo Passion	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
8.	**8.**	**MG/MS /VG**	**Leaf blade: length**		
QN		**(b)**	very short		1
			very short to short		2
			short	Bulida, Early Biady, Perla, Samarkandskij rannij	3
			short to medium	Ceglédi bájos	4
			medium	Canino, Portici, Rouge du Roussillon, Veecot	5
			medium to long	Clarina, Lunafull	6
			long	Ceglédi arany, Moniquí, Roxana	7
			long to very long	César, Koolgat	8
			very long		9
9.	**9.**	**MG/MS /VG**	**Leaf blade: width**		
QN		**(b)**	very narrow	Hurgat	1
			very narrow to narrow	Koolgat	2
			narrow	Ceglédi bíbor, Monaco Bello, Rouget de Sernhac, Veecot	3
			narrow to medium	Ceglédi napsugár, Nyujtó Ferenc emléke	4
			medium	Canino, Cape Bebeco, Harcot, Vitillo	5
			medium to broad	Hargrand, Magyar kajszi	6
			broad	Ceglédi Piroska, Moniquí, Pisana	7
			broad to very broad	Candela	8
			very broad	Nadejda	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
10.	**10. (*)**	**MG/VG**	**Leaf blade: ratio length/width**		
QN		**(b)**	very low	Canino, Portici	1
			very low to low	Ceglédi bájos	2
			low	Cafona, Hargrand, Supergold	3
			low to medium	Ceglédi szilárd	4
			medium	Harcot, Rouget de Sernhac, Rustic, San Castrese	5
			medium to high	Ceglédi napsugár	6
			high	Big Cot, Ceglédi bíbor, Colorado	7
			high to very high	Titicot	8
			very high	Koolgat, Noemi, Super Seven	9
11.	**11.**	**VG**	**Leaf blade: intensity of green colour of upper side**		
QN		**(b)**	light	Roxy, San Castrese, Veecot, Velasquez	1
			light to medium	Ceglédi kedves	2
			medium	Canino, Ceglédi óriás, Flaming Gold, Grandir, Harcot	3
			medium to dark	Roxana	4
			dark	Earle Orange, Ninja	5
12. (+)	**12.**	**VG**	**Leaf blade: shape of base**		
PQ		**(b)**	acute	Ceglédi bíbor, Rouget de Sernhac, San Francesco	1
			obtuse	Bhart, Magyar kajszi, Portici	2
			truncate	Bergeron, Blenheim, Canino, Perla	3
			cordate	Bulida, Monabri, Moniquí	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
13. (+)	**13.**	**VG**	**Leaf blade: angle of apex**		
PQ		**(b)**	acute	Koolgat, San Castrese	1
			right-angled	Bulida, Canino, Ceglédi óriás	2
			moderately obtuse	Bergeron, Farclo, Portici	3
			strongly obtuse	Hargrand, Moniquí	4
14. (+)	**14.**	**VG**	**Leaf blade: length of tip**		
QN		**(b)**	absent or very short	Alpha	1
			very short to short	Vemina	2
			short	Amber Gold, Bhart, Harmat, Moniquí	3
			short to medium	Rambo	4
			medium	Koolgat, Magyar kajszi, Roxy	5
			medium to long	Nyujtó Ferenc emléke, Oscar	6
			long	Fina, Memphis, Roxana	7
			long to very long	Playa Cot	8
			very long		9
15. (+)	**15. (*)**	**VG**	**Leaf blade: incisions of margin**		
PQ		**(b)**	crenate	Canino, Royal Roussillon, San Castrese, Verdun	1
			bicrenate	Bhart, Ninfa	2
			serrate	Vitillo	3
			biserrate	Farius, Himidi, Roxana, Suapriseven	4
16.	**16.**	**VG**	**Leaf blade: undulation of margin**		
QN		**(b)**	absent or very weak	Colomer, Earle Orange	1
			weak	Harcot, Palsteyn, Portici	2
			medium	Blenheim, Cape Bebeco, Roxana	3
			strong	Piet Cillié, San Francesco	4
			very strong	Polonais	5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
17. (+)	**17.**	**VG**	**Leaf blade: profile in cross section**		
QN		**(b)**	slightly convex	Megatea	1
			flat or weakly concave	Earle Orange, Rouget de Sernhac, San Castrese	2
			moderately concave	Bergeron, Dulcinea, Moniquí, Rustic	3
			strongly concave	Polonais	4
18.	**18. (*)**	**MG/MS /VG**	**Petiole: length**		
QN		**(b)**	very short	Csic Cebas Mirloblanco	1
			very short to short	Cyrano, Pricia	2
			short	Cape Bebeco, Madison, Ninfa, Veecot	3
			short to medium	Ceglédi bájos, Ceglédi gömbölyű, Koolgat	4
			medium	Bergeron, Bulida, Cafona, Canino, Hargrand	5
			medium to long	Ceglédi napsugár, Nyujtó Ferenc emléke, Samouraï, Totem	6
			long	Banzaï, Ladisun, Reale d'Imola	7
			long to very long		8
			very long	HG nº1	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
19. (+)	**19. (*)**	**MG/MS /VG**	**Leaf: ratio length of blade/length of petiole**		
QN		**(b)**	very low		1
			very low to low		2
			low	Earle Orange, Harcot, Pisana, Rouget de Sernhac	3
			low to medium	Apache, Banzaï	4
			medium	Bergeron, Portici, Rouge du Roussillon	5
			medium to high	Koolgat	6
			high	Monaco Bello, Moniquí	7
			high to very high		8
			very high		9
20.	**20.**	**VG**	**Petiole: thickness**		
QN		**(b)**	thin	Flaming Gold, San Castrese, Veecot	1
			medium	Bulida, Harcot, Portici	2
			thick	Ceglédi arany, Moniquí, Reale d'Imola	3
21.	**21.**	**VG**	**Petiole: intensity of anthocyanin coloration of upper side**		
QN		**(b)**	absent or very weak		1
			very weak to weak		2
			weak	Tri Gems	3
			weak to medium	Sublime	4
			medium	Bhart, Canino, Cape Bebeco, San Castrese	5
			medium to strong	Ninja, Oscar	6
			strong	Ceglédi bíbor, Early Biady, Grandir, Harogem	7
			strong to very strong	Cheyenne	8
			very strong		9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
22. (+)	**22. (*)**	**MG/VG**	**Petiole: number of nectaries**		
QN		**(b)**	none or one	Colorado, Mandulakajszi, Rouget de Sernhac	1
			two or three	Banzaï, Magyar kajszi, Ninja, Primarina, Veecot	2
			more than three	Bulida, Canino, Cape Bebeco, Moniquí, Pisana	3
23.	**23.**	**VG**	**Petiole: size of nectaries**		
QN		**(b)**	small	Alpha, Colorado, Madison, San Francesco, Yerevani	1
			medium	Ceglédi óriás, Samouraï, San Castrese, Tilton	2
			large	Canino, Early Biady, Harmat, Red Blush	3
24.	**24. (*)**	**MS/VG**	**Flower: diameter**		
QN		**(c)**	small	Borsi rózsa, Supergold	1
			small to medium	Somo	2
			medium	Magyar kajszi, Polonais, Portici, Reale d'Imola	3
			medium to large	Ceglédi arany	4
			large	Hargrand, Harmat, San Castrese	5
25. (+)	**25.**	**VG**	**Flower: position of stigma relative to anthers**		
QN		**(c)**	below	Harmat, Rouge du Roussillon	1
			same level	Hargrand, Palsteyn, Portici	2
			above	Canino, Grandir, Pisana, Polonais	3
26. (+)	**26.**	**VG**	**Petal: shape**		
PQ		**(c)**	elliptic	Rubilis	1
			circular	Faralia, Harcot, Luizet	2
			oblate	Canino, Polonais, Rustic, Vitillo	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
27. (+)	**27. (*)**	**VG**	**Petal: colour**		
PQ			white	Bulida, Cafona, Polonais	1
			pinkish white	Magyar kajszi, San Castrese	2
			light pink	Harcot	3
G			dark pink	Cheyenne, Ninja	4
28. (+)	**28.**	**VG**	**Sepal: attitude**		
QN			upwards	Ladisun	1
			outwards	Colomer, Farbaly	2
			downwards	Bergeron, Cape Bebeco	3
29.	**29. (*)**	**MG/VG**	**Fruit: weight**		
QN			very low	Haggith, Menace, Supergold, Zard	1
			very low to low		2
			low	Borsi rózsa, Ladisun	3
			low to medium	Val orange	4
			medium	Cafona, Canino, Harcot, Paz	5
			medium to high	Iziagat, Oscar	6
			high	Ceglédi bíbor, Moniquí, Portici	7
			high to very high	Swilate	8
G			very high	Ceglédi óriás, Flamengo, Hargrand, Palsteyn, Pisana	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
30. (+)	**30. (*)**	**VG**	**Fruit: shape in lateral view**		
PQ		**(d)**	triangular	Gilgat, Luizet	1
			ovate	Bergeron, Pisana	2
			oblate	Korai zamatos, Nugget	3
			circular	Earle Orange, Grandir, Ninfa, Ouardi, Polonais	4
			oblong	Blenheim, Portici, Sundrop	5
			elliptic	Précoce d'Imola, Wenatchee, Yerevani	6
			oblique rhombic	Banga, Bulida, Canino, Vulcan	7
G			obovate	Harcot, Harmat, Trevatt	8
31. (+)	**31. (*)**	**VG**	**Fruit: shape in ventral view**		
PQ		**(d)**	triangular	Gilgat, Luizet, Mandulakajszi, Reale d'Imola	1
			ovate	Bergeron, Canino, Fracasso	2
			oblate	Nugget	3
			circular	Polonais, Rouge du Roussillon, San Castrese	4
			oblong	Baracca, Hargrand, Veecot	5
			elliptic	Bella d'Imola, Flaming Gold, Yerevani	6
			obovate	Harcot, Harmat, Ladisun, Portici	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
32.	**32.**	**MG/VG**	**Fruit: height**		
QN		**(d)**	very short		1
			very short to short		2
			short	Samarkandskij rannij, Sayeb, Supergold	3
			short to medium	Val orange	4
			medium	Bergeron, Canino, Cape Bebeco	5
			medium to tall	Ceglédi kedves, Ceglédi napsugár, Cheyenne, Iziagat	6
			tall	Goldrich, Mandulakajszi, Vitillo	7
			tall to very tall	Flamengo	8
			very tall		9
33.	**33.**	**MG/VG**	**Fruit: width in lateral view**		
QN		**(d)**	very narrow		1
			very narrow to narrow		2
			narrow	Cerasiello, Harmat, Manicot, Samarkandskij rannij, Supergold	3
			narrow to medium	Aprireve	4
			medium	Bergeron, Bhart, Cafona, Paz	5
			medium to broad	Ceglédi kedves, Ceglédi szilárd, Swilate	6
			broad	Hargrand, Moniquí, Sherpa, Vitillo	7
			broad to very broad		8
			very broad		9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
34.	**34.**	**MG/VG**	**Fruit: width in ventral view**		
QN		**(d)**	very narrow		1
			very narrow to narrow		2
			narrow	Cerasiello, Harlayne, Tri Gems	3
			narrow to medium	Ceglédi zamatos, Swired	4
			medium	Bhart, Cape Bebeco, Palummella	5
			medium to broad	Ceglédi gömbölyű, Swilate	6
			broad	Ceglédi arany, Flamengo, Goldrich, Moniquí	7
			broad to very broad		8
			very broad		9
35.	**35.**	**MG/VG**	**Fruit: ratio height/ventral width**		
QN		**(d)**	very low	Larclyd	1
			very low to low	Ceglédi arany	2
			low	Korai zamatos, Peeka	3
			low to medium	Ceglédi bájos	4
			medium	Cafona, Canino, Magyar kajszi, Rouge du Roussillon, Solitaire	5
			medium to high	Ceglédi napsugár, Cheyenne, Monaco Bello	6
			high	Bergeron, Tri Gems, Vitillo	7
			high to very high	Elgat, Lido	8
			very high	Farbella	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
36.	**36. (*)**	**MG/VG**	**Fruit: ratio lateral width/ventral width**		
QN		**(d)**	very low	Monaco Bello	1
			very low to low	Lemeda	2
			low	Mandorlon, Maria Ferez, Rustic, Vesna	3
			low to medium	Ceglédi napsugár, Nyujtó Ferenc emléke	4
			medium	Bergeron, Luizet, Pisana, Rouge du Roussillon	5
			medium to high	Aprireve, Ceglédi zamatos	6
			high	Borsi rózsa, Calicot, IPS 660, Swired	7
			high to very high	Titicot, Tudor	8
			very high		9
37. (+)	**37. (*)**	**VG**	**Fruit: symmetry in ventral view**		
QN		**(d)**	symmetric	Canino, Magyar kajszi, Paz, Portici	1
			slightly asymmetric	Ceglédi óriás, Meligat, Royal	2
			strongly asymmetric	Borsi rózsa, Grandir, Milord, Reale d'Imola	3
38. (+)	**38. (*)**	**VG**	**Fruit: suture**		
PQ		**(d)**	raised	Priboto	1
			slightly sunken	Magyar kajszi, Ninfa, Rouge du Roussillon	2
			moderately sunken	Bergeron, Ladisun, Monaco Bello, Pineapple	3
			strongly sunken	Cape Bebeco, Dima, Kech-pshar, Portici	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
39.	**39.**	**VG**	**Fruit: depth of stalk cavity**		
QN		**(d)**	shallow	Harlayne, Peeka, Rouge du Roussillon, San Castrese	1
			shallow to medium		2
			medium	Blenheim, Grandir, Magyar kajszi, Vitillo	3
			medium to deep	Roxana	4
			deep	Banzaï, Canino, Ceglédi óriás, Palsteyn	5
40. (+)	**40. (*)**	**VG**	**Fruit: shape of apex in lateral view**		
PQ		**(d)**	acute	Hula Blush, Mandulakajszi, Reale d'Imola	1
			rounded	Bergeron, Goldrich, Portici	2
			truncate	Bella d'Imola, Hargrand, Royal	3
41. (+)	**41.**	**VG**	**Fruit: shape of pistil end in ventral view**		
PQ		**(d)**	pointed	Mediabel	1
			flat	Farbaly	2
			weakly depressed	Suapriseven	3
			strongly depressed	Primaya	4
42. (+)	**42. (*)**	**VG**	**Fruit: presence of mucron**		
QL		**(d)**	absent	Blenheim, Bulida, Canino, San Castrese	1
			present	Bhart, Pisana	9
43.	**43.**	**VG**	**Fruit: surface**		
PQ		**(d)**	smooth	Bergeron, Ninja, Palsteyn, Portici, Rouge du Roussillon	1
			slightly bumpy	Cape Bebeco, Oscar, Supergold	2
			moderately bumpy	Canino, Ceglédi óriás, Faralia, Nonno, Sherpa	3
			very bumpy	Lotte	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
44.	**44. (*)**	**VG**	**Fruit: pubescence**		
QL		**(d)**	absent	Badami, Glattschalige Frühmarille	1
			present	Bergeron, Bulida, Canino, Magyar kajszi	9
45.	**45.**	**VG**	**Fruit: glossiness**		
QN		**(d)**	absent or weak	Rouge du Roussillon	1
			medium	Harcot, Oscar	2
			strong	Lotte, Maravilla, Sun Glo	3
46. (+)	**46. (*)**	**VG**	**Fruit: ground colour of skin**		
PQ		**(d)**	not visible	Ravicille, Ravilong	1
			white	San Nicola, Shirazskij belyj	2
			yellowish	Piet Cillié, Soldonné, Vitillo, Yerevani	3
			yellowish green	Grüne Spätmarille, Kaisi Ashtarak, Roxy, Sateni Karmir	4
			light orange	Canino, Goldcot, Hargrand, Rouge du Roussillon	5
			medium orange	Luizet, Pisana, Veecot	6
G			dark orange	Bhart, Harcot, Harogem	7
47.	**47. (*)**	**VG**	**Fruit: hue of over colour**		
PQ		**(d)**	orange red	Cape Bebeco	1
			red	Bhart, Faralia	2
			pink	Colorado, Palsteyn, Rustic	3
			purple	Rubissia, Totem	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
48.	**48.**	**VG**	**Fruit: intensity of over colour**		
QN		**(d)**	very light		1
			very light to light		2
			light	Big Cot, Ceglédi napsugár	3
			light to medium	IPS 16121	4
			medium	Swilate	5
			medium to dark		6
			dark	Flash Cot, Primarina	7
			dark to very dark	Rubely	8
			very dark	Apridelice	9
49. (+)	**49. (*)**	**VG**	**Fruit: relative area of over colour**		
QN		**(d)**	absent or very small	Ceglédi gömbölyű, Charisma, Maria Matilde, Moniquí	1
			very small to small	Bayoto	2
			small	Cafona, Canino, Cape Bebeco, Goldrich	3
			small to medium	Ceglédi kedves	4
			medium	Magyar kajszi, Palsteyn, Portici, Roxy	5
			medium to large	Ceglédi szilárd	6
			large	Bergeron, Bhart, Golden Blush, Pisana	7
			large to very large	Cheyenne	8
G			very large	Ravicille, Ravilong	9
50. (+)	**50. (*)**	**VG**	**Fruit: pattern of over colour**		
PQ		**(d)**	isolated spots	Big Cot, Margotina, Rouge du Roussillon	1
			solid flush	Bergeron, Cape Bebeco, Ninja	2
			very small spots throughout	Grandir, Moniquí, Pieve	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
51.	**51. (*)**	**VG**	**Fruit: colour of flesh**		
PQ		**(d)**	white	Mouchbah Mourry, Spitak	1
			yellowish white	Barese, Malatya, Moniquí	2
			whitish green	Amban	3
			light orange	Canino, Cape Bebeco, Harmat, San Castrese	4
			medium orange	Grandir, Harglow, Pisana, Rouge du Roussillon, Screara	5
			dark orange	Bhart, Francese, Harcot, Palsteyn	6
G			red		7
52.	**52.**	**VG**	**Fruit: texture of flesh**		
QN		**(d)**	fine	Fracasso, Harlayne, Koolgat, Peeka	1
			medium	Canino, Cape Bebeco, Magyar kajszi, Piet Cillié	2
			coarse	Bergeron, Précoce d'Imola	3
53. (+)	**53.**	**MG/MS /VG**	**Fruit: firmness of flesh**		
QN		**(d)**	very soft	Harmat, Viceroy	1
			very soft to soft	Samarkandskij rannij	2
			soft	Goldcot, Grandir	3
			soft to medium	MK 132	4
			medium	Cape Bebeco, Magyar kajszi, Piet Cillié, Rouge du Roussillon	5
			medium to firm	Lunafull	6
			firm	Bella d'Imola, Bergeron, Palsteyn, Suapriseven	7
			firm to very firm	Congat, Fardao	8
			very firm	Farclo, Priboto	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
54.	**54.**	**MG**	**Fruit: ratio weight of fruit/weight of stone**		
QN		**(d)**	very low		1
			very low to low		2
			low	Borsi rózsa, Reale d'Imola	3
			low to medium	Ceglédi zamatos	4
			medium	Blenheim, Portici, Primaya	5
			medium to high	Ceglédi napsugár	6
			high	Badami, Bergeron, Hula Blush, San Castrese	7
			high to very high	Hollycot	8
			very high	Flamengo	9
55.	**55. (*)**	**VG**	**Fruit: adherence of stone to flesh**		
QN		**(d)**	absent to very weak	Bergeron, Bhart, Ninfa, Peeka	1
			very weak to weak	Canino, Paz, Rouge du Roussillon, Sirena	2
			medium	Ceglédi arany, Tardif de Bordaneil	3
			medium to strong	Ceglédi napsugár	4
			strong	Cafona, Comandor, Flamengo	5
56. (+)	**56. (*)**	**VG**	**Stone: shape in lateral view**		
PQ		**(d)**	ovate	Goldcot, Grandir, Magyar kajszi, Portici	1
			circular	Canino, Eten Bey, Hargrand, Suaprieight	2
			elliptic	Bergeron, Vitillo	3
			oblong	Bella d'Imola, Palsteyn, Rouge du Roussillon	4
			obovate	Harcot, Harmat	5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
57. (+)	**57.**	**VG**	**Kernel: bitterness**		
QN		**(d)**	absent or weak	Bergeron, Harcot, Magyar kajszi, Reale d'Imola	1
			medium	Bella d'Imola, Harlayne, Ninja, Palsteyn, Suaprieight, Swired	2
			strong	Borsi rózsa, Canino, Colorado, Manicot, Memphis, Samouraï, Supergold	3
58. (+)	**58. (*)**	**MG/VG**	**Time of beginning of flowering**		
QN			very early	Bakour, Colorado, Currots, Harmat, Ninfa, Solitaire	1
			very early to early	Rambo	2
			early	Canino, Harcot, San Castrese	3
			early to medium	Ceglédi szilárd, Goldrich	4
			medium	Bhart, Magyar kajszi, Moniquí, Portici, San Francesco, Supergold	5
			medium to late	Ceglédi zamatos, Digat	6
			late	Bergeron, Farius, Harlayne, Ladisun, Polonais	7
			late to very late	Hurgat	8
G			very late	Badami, Harglow, Stella, Zard	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
59. (+)	**59. (*)**	**MG/VG**	**Time of beginning of fruit ripening**		
QN			very early	Bakour, Ninfa, Rutbhart	1
			very early to early	Monabri, Tsunami	2
			early	Bhart, Ladisun, Rouget de Sernhac, Tomcot	3
			early to medium	Goldrich, Hargrand, Magyar kajszi	4
			medium	Amber Gold, Bergeron, Harlayne, Pisana	5
			medium to late	Anegat, Swired	6
			late	Faralia, Larquen	7
			late to very late	Fartoli	8
G			very late	Farclo, Farlis, Lartago	9

8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

8.1 Explanations covering several characteristics

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

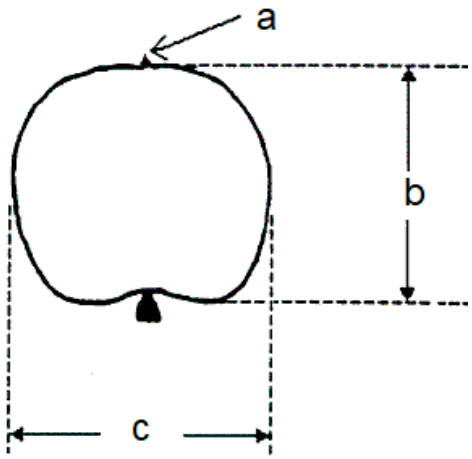
a) Observations should be made during the dormant period and before the beginning of flowering, on trees that have fruited at least once.

b) Observations should be made on fully developed leaves from the middle third of a well developed current season's long shoot.

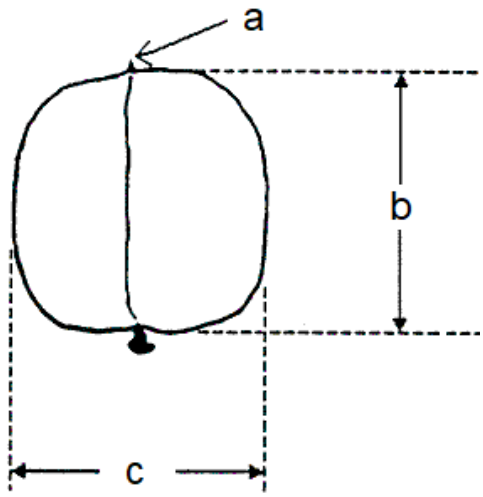
c) Observations should be made on fully developed flowers at the beginning of dehiscence.

d) Observations should be made on mature fruits. Fruit ripening should be considered as the time of eating maturity.

Lateral view



Ventral view



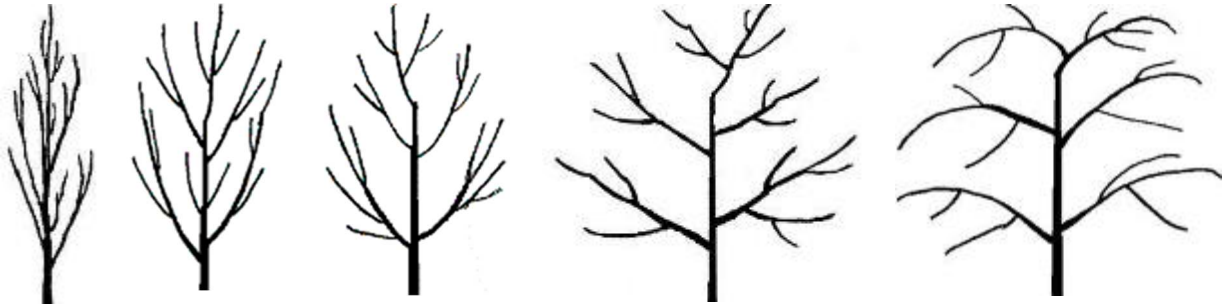
a = mucron
b = height
c = width

8.2 Explanations for individual characteristics

Ad. 1: Tree: vigour

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

Ad. 2: Tree: habit



1 fastigate | 2 upright | 3 upright to spreading | 4 spreading | 5 drooping

Ad. 3: Tree: number of branches

Observations should be made on the number of lateral branches and shoots, excluding spurs.

Ad. 5: One-year-old shoot: colour of sunny side

Observations should be made in the middle of one-year-old primary shoots.

Ad. 6: One-year-old shoot: size of bud support

1
small

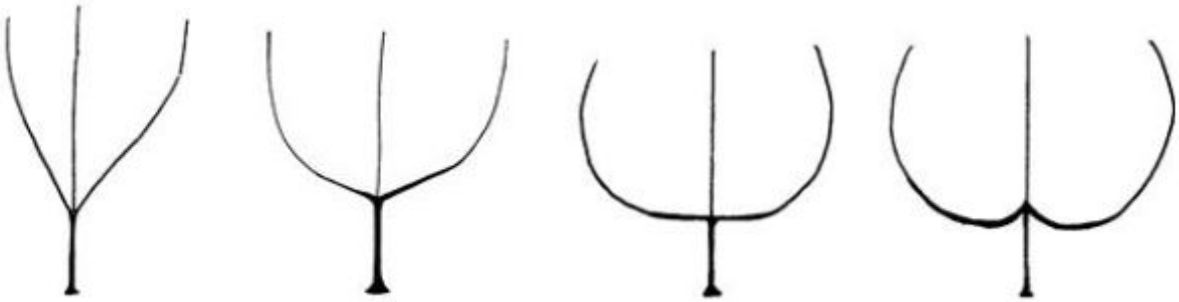
2
medium

3
large

Ad. 7: Young shoot: intensity of anthocyanin coloration of apex

Observation should be made during rapid growth, when the intensity of anthocyanin coloration of apex expresses at its maximum.

Ad. 12: Leaf blade: shape of base



1
acute

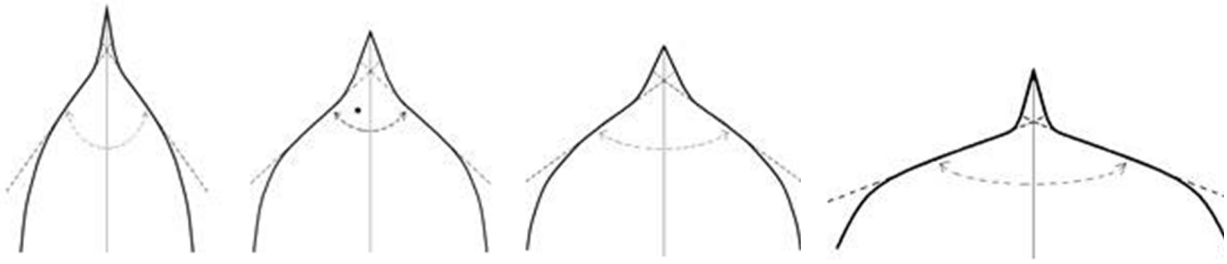
2
obtuse

3
truncate

4
cordate

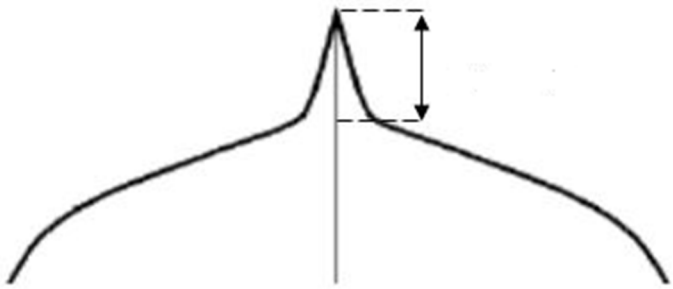
Ad. 13: Leaf blade: angle of apex

Observation should exclude the tip.



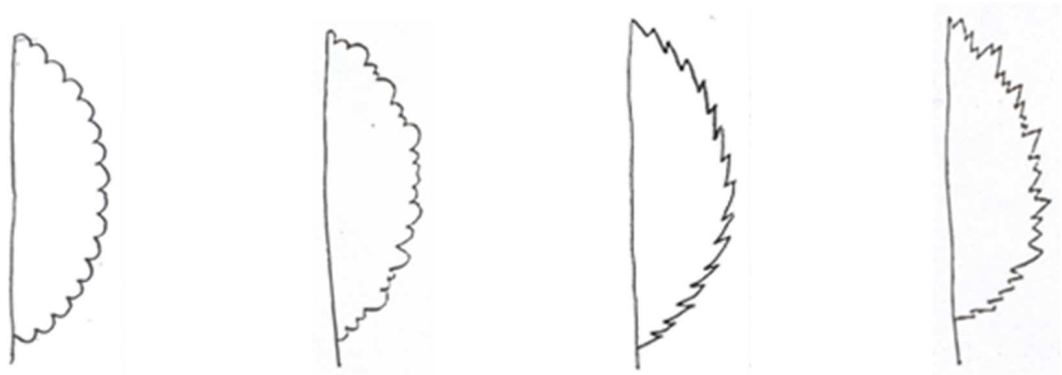
1 acute | 2 right-angled | 3 moderately obtuse | 4 strongly obtuse

Ad. 14: Leaf blade: length of tip



Ad. 15: Leaf blade: incisions of margin

Observation should be made on the upper part of the leaf excluding the tip of the leaf blade.

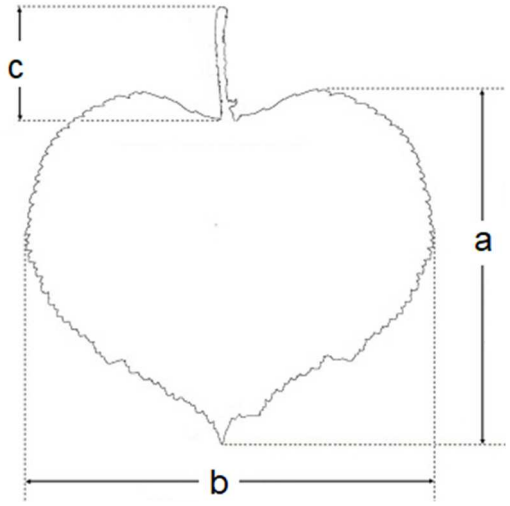


1 crenate | 2 bicrenate | 3 serrate | 4 biserrate

Ad. 17: Leaf blade: profile in cross section

Leaves observed should be on spurs or at base of flowering shoots.

Ad. 19: Leaf: ratio length of blade/length of petiole



a = length of leaf blade
b = width of leaf blade
c = length of petiole

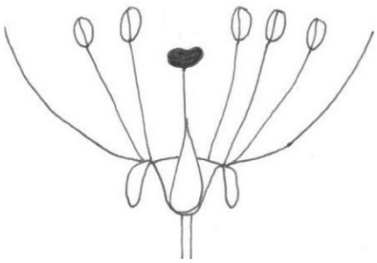
Ad. 22: Petiole: number of nectaries

1
none or one

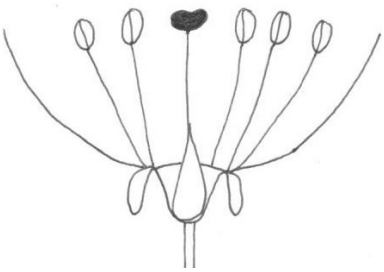
2
two or three

3
more than three

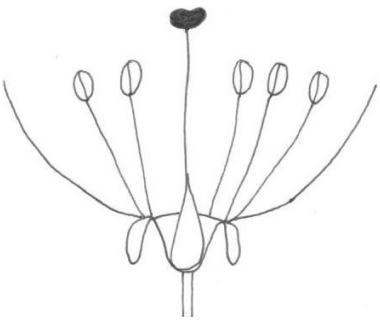
Ad. 25: Flower: position of stigma relative to anthers



1
below



2
same level



3
above

Ad. 26: Petal: shape

Observations should exclude the claw.

1
elliptic

2
circular

3
oblate

Ad. 27: Petal: colour

Observations should be made on the petals at balloon stage.

Ad. 28: Sepal: attitude

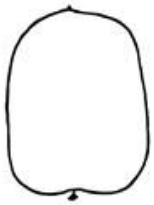
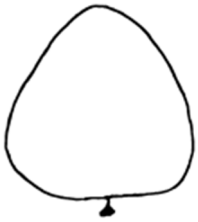
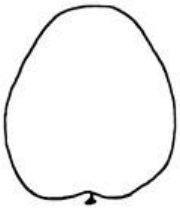
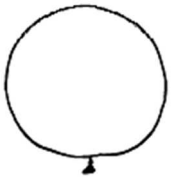
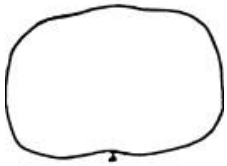
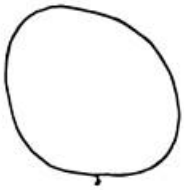
Observations should be made on fully opened flowers.

1
upwards

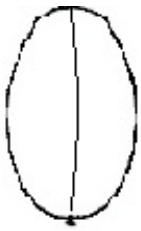
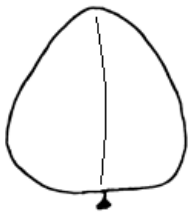
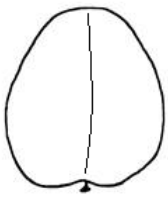
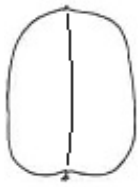
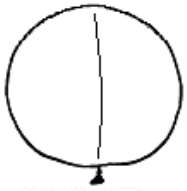
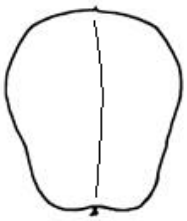
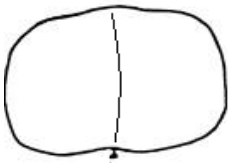
2
outwards

3
downwards

Ad. 30: Fruit: shape in lateral view

	←broadest part →			
	below middle		at middle	above middle
relative width				
narrow			 6 elliptic	
medium			 5 oblong	
	 1 triangular	 2 ovate	 4 circular	 8 obovate
broad			 3 oblate	 7 oblique rhombic

Ad. 31: Fruit: shape in ventral view

	← broadest part →			
	below middle		at middle	above middle
relative width				
narrow			 6 elliptic	
medium	 1 triangular	 2 ovate	 5 oblong  4 circular	 7 obovate
broad			 3 oblate	

Ad. 37: Fruit: symmetry in ventral view

1
symmetric

2
slightly asymmetric

3
strongly asymmetric

Ad. 38: Fruit: suture

1
raised

2
slightly sunken

3
moderately sunken

4
strongly sunken

Ad. 40: Fruit: shape of apex in lateral view

1
acute

2
rounded

3
truncate

Ad. 41: Fruit: shape of pistil end in ventral view

Observations should exclude the mucron tip.

1
pointed

2
flat

3
weakly depressed

4
strongly depressed

Ad. 42: Fruit: presence of mucron

1
absent

9
present

Ad. 46: Fruit: ground colour of skin

The ground colour is the first colour to appear chronologically during the development of the skin and upon which the over colour will develop in time. It is not always necessarily the largest area of the skin.

Ad. 49: Fruit: relative area of over colour

1
absent or very small

3
small

5
medium

7
large

9
very large

Ad. 50: Fruit: pattern of over colour

1
isolated spots

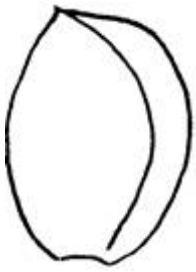
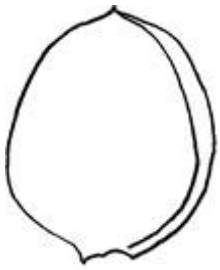
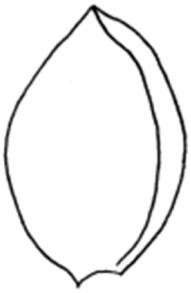
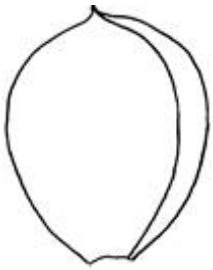
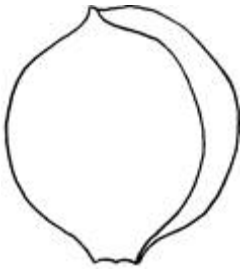
2
solid flush

3
very small spots throughout

Ad. 53: Fruit: firmness of flesh

Observation is made by squeezing the fruit.

Ad. 56: Stone: shape in lateral view

	←broadest part →		
	below middle	at middle	above middle
relative width			
narrow		 4 oblong	
medium	 1 ovate	 3 elliptic	 5 obovate
broad		 2 circular	

Ad. 57: Kernel: bitterness

Observation is made by tasting the kernel.

Ad. 58: Time of beginning of flowering

Time of beginning of flowering is reached when 5 – 10% of flowers are open.

Ad. 59: Time of beginning of fruit ripening

Time of beginning of fruit ripening is reached when 5 – 10% of fruits have eating maturity.

8.3 Synonyms of example varieties

Example Varieties	Synonym(s)
Sant' Ambrogio	Ambrosia, Saint Ambroise
Bhart	NJA 32
Borsi rózsa	Kecskemeter rose, Ružova neskora, Trandafirii tirzi
Čačacansko zlato	Čačak's Gold
Earle Orange	Erle Orange, Stark Earli Orange, Early Orange
Goldrich	Sungiant
Magyar kajszi	Cea mai bună de Ungaria, Gönci magyar kajszi, Hungarian Best, Klosterneuburger Aprikose, Krasnoshchokij, Mađarska najbolja, Meilleur d'Hongrie, Ungarische Beste
Pineapple	Abricot d'Ananas, Ananas-Marille, Ananasnyj
Proimo Tyrinthos	Précoce de Tyrinthe
Sateni Karmir	Tabarza
Yerevani	Shalakh

9. LITERATURE

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10. TECHNICAL QUESTIONNAIRE

The Technical Questionnaire is available on the CPVO website under the following reference:
CPVO-TQ/070/3 – *Prunus armeniaca* L. – apricot

Link to e-TQ:

https://online.plantvarieties.eu/backOfficeFormQuestions?viewFormId=14413&viewFormType=TQ&viewFormLang=EN&speciesIds=PRU02&status=1,2&order=formName