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

PROTOCOL FOR TESTS ON DISTINCTNESS, UNIFORMITY AND STABILITY

Prunus dulcis (Mill.) D.A. Webb

ALMOND

UPOV Code: PRUNU_DUL

Adopted on 28/06/2021

Entry into force on 28/06/2021

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CPVO-TP/056/2

1. SUBJECT OF THE PROTOCOL AND REPORTING

1.1 Scope of the technical protocol

This Technical Protocol applies to all varieties of ***Prunus dulcis*** **(Mill.) D.A. Webb.**

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/56/4 Cor. Rev. dated 2011-10-20 + 2017-10-17 + 2019-06-14 5 https://www.upov.int/edocs/tgdocs/en/tg056.pdf) for the conduct of tests for Distinctness, Uniformity and Stability.

1.2 Entry into Force

The present protocol enters into force on **28.06.2021**. 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.

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 permanent agreement, 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 http://cpvo.europa.eu/applications-and-examinations/technical-examinations/submission-of-plant-material-s2-publication in the special issue S2 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

3.1.1. 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 plants 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.

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

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.

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
Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 5 plants or parts taken from each of 5 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 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 5 plants, no 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.

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) Tree: distribution of flower buds (characteristic 8)

b) Fruit: size (characteristic 27)

c) Stone: resistance to cracking (characteristic 37)

d) Time of beginning of flowering (characteristic 43)

e) Time of harvest (characteristic 44)

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

In the case of qualitative and pseudo-qualitative characteristics, all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	Note
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	Note
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

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			weak	Marcona, Tuono, Umm al-Fahm	3
			medium	Nonpareil	5
			strong	Bartre, Flour en Bas, Peerless	7
2. (+)	**2. (*)**	**VG**	**Tree: habit**		
PQ			upright	Fournat de Brezenaud	1
			upright to spreading	Ferragnès	2
			spreading	Nec Plus Ultra	3
			drooping	Primorskij, Umm al-Fahm	4
3.	**3. (*)**	**VG**	**Tree: texture of bark**		
QN			smooth	Bartre, Volcani 5	1
			moderately cracked		2
			strongly cracked	Ferragnès	3
4.	**4.**	**VG**	**One-year-old shoot: thickness**		
QN			thin	Aï	3
			medium	Nonpareil	5
			thick	Primorskij, Texas	7
5. (*)	**5. (+)**	**VG**	**One-year-old shoot: anthocyanin coloration**		
QN		**(a)**	absent or very weak		1
			weak	Desmayo Largueta	3
			medium	Bartre, Nonpareil	5
			strong	Ferragnès, Marcona, Texas	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
6. (*)	**6. (+)**	**VG**	**Shoot: feathering**		
QN			absent or very weak	Bartre	1
			weak	Texas	2
			medium	Desmayo Larguerta	3
			strong	Marcona	4
			very strong	Aï	5
7.	**7.**	**VG**	**Tree: density of foliage**		
QN			sparse	Fournat de Brezenaud	3
			medium	Nonpareil	5
			dense	Peerless	7
8.	**8. (*)**	**VG**	**Tree: distribution of flower buds**		
QN			predominantly on spurs	Cristomorto	1
			equally on spurs and one year old shoots	Ferragnès	2
G			predominantly on one year old shoots	Nonpareil	3
9.	**9. (*)**	**MG/MS**	**Leaf blade: length**		
QN		**(a)**	short	Aï	3
			medium	Primorskij	5
			long	Bartre	7
10.	**10. (*)**	**MG/MS**	**Leaf blade: width**		
QN		**(a)**	narrow	Aï	3
			medium	Nec Plus Ultra	5
			broad	Bartre	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
11.	**11. (*)**	**MS**	**Leaf: ratio length/width**		
QN		**(a)**	slightly elongated	Volcani 5	3
			moderately elongated	Nec Plus Ultra, Texas	5
			very elongated	Nonpareil	7
12.	**12. (*)**	**VG**	**Leaf blade: intensity of green colour**		
QN		**(a)**	light	Bartre	3
			medium	Nonpareil	5
			dark	Texas	7
13. (+)	**13. (*)**	**VG**	**Leaf blade: incision of margin**		
QL		**(a)**	serrate		1
			crenate	Texas	2
14.	**14. (*)**	**MS/VG**	**Petiole: length**		
QN		**(a)**	short	Ferragnès	3
			medium	Primorskij	5
			long	Peerless	7
15. (+)	**15. (*)**	**VG**	**Flower bud: shape**		
PQ		**(a)**	triangular	Aï	1
			ovate	Desmayo Largueta	2
			circular	Cristomorto	3
16. (+)	**16. (*)**	**VG**	**Flower bud: colour of tip of petals**		
PQ		**(a)**	white	Ardechoise	1
			pink	Bartre, Marcona	2
			red	Aï, Trell	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
17.	**17. (*)**	**VG**	**Flower bud: colour of sepals**		
PQ		**(a)**	green	Cristomorto	1
			brown	Tuono	2
			red	Desmayo Largueta	3
18.	**18.**	**VG**	**Flower bud: pubescence of sepals**		
QN		**(a)**	absent or very weak	Marcona	1
			weak	Ardechoise	2
			medium	Bartre	3
			strong		4
			very strong		5
19.	**19. (*)**	**MS/VG**	**Flower: diameter**		
QN		**(b)**	small	Umm al-Fahm	3
			medium	Peerless	5
			large	Nec Plus Ultra	7
20. (+)	**20. (*)**	**VG**	**Petal: shape**		
PQ		**(b)**	narrow elliptic	Volcani 5	1
			medium elliptic	Butte	2
			circular	Texas	3
			rhombic	Umm al-Fahm	4
21.	**21. (*)**	**VG**	**Petal: colour of inner side**		
PQ		**(b)**	white	Bartre	1
			light pink	Aï	2
			medium pink	Marcona	3
			dark pink	Trell	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
22.	**22.**	**VG**	**Petal: undulation of margin**		
QN		**(b)**	absent or very weak	Carmel	1
			weak	Butte	2
			medium	Nec Plus Ultra	3
			strong	Texas	4
			very strong		5
23.	**23.**	**VG**	**Flower: number of stamens**		
QN			few	Cristomorto	1
			medium	Aï	2
			many	Bartre	3
24.	**24. (*)**	**VG**	**Stamen: anthocyanin coloration of filament**		
QN		**(b)**	absent or weak	Price	1
			moderate	Nonpareil	2
			strong	Texas	3
25.	**25. (*)**	**VG**	**Stigma: position in relation to anthers**		
QN		**(b)**	below	Drake	1
			same level	Nec Plus Ultra	2
			above	Desmayo Largueta	3
26.	**26.**	**VG**	**Stigma: size**		
QN		**(b)**	small	Desmayo Largueta	1
			medium		2
			large	Aï	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
27.	**27. (*)**	**VG**	**Fruit: size**		
QN		**(c)**	very small		1
			small	Texas	3
			medium	Nonpareil	5
			large	Ardechoise	7
G			very large	Bartre	9
28. (+)	**28. (*)**	**VG**	**Fruit: shape (in lateral view)**		
PQ		**(c)**	ovate	Marcona	1
			elliptic	Aï	2
			circular	Nec Plus Ultra	3
			obovate	Ardechoise	4
29. (+)	**29. (*)**	**VG**	**Fruit: shape of apex**		
PQ		**(c)**	acute	Carmel	1
			obtuse	Price	2
			rounded	Texas	3
30.	**30. (*)**	**VG**	**Fruit: pubescence**		
QN		**(c)**	sparse		1
			medium	Desmayo Largueta	2
			dense	Ferraduel	3
31.	**31. (*)**	**MS/VG**	**Stone: length**		
QN		**(d)**	short	Texas	3
			medium	Nec Plus Ultra	5
			long	Peerless	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
32.	**32. (*)**	**MS/VG**	**Stone: width (in lateral view)**		
QN		**(d)**	narrow	Price	3
			medium	Nec Plus Ultra	5
			broad	Peerless	7
33.	**33. (*)**	**MS/VG**	**Stone: ratio length/width in lateral view**		
QN		**(d)**	compressed		1
			medium		2
			elongated		3
34. (+)	**34. (*)**	**VG**	**Stone: shape (in lateral view)**		
PQ		**(d)**	ovate	Marcona, Montrone	1
			elliptic	Catuccia	2
			circular	Nonpareil	3
			obovate	Nec Plus Ultra	4
35. (+)	**35.**	**VG**	**Stone: shape of apex**		
PQ		**(d)**	acute		1
			obtuse		2
			rounded		3
36.	**36. (*)**	**VG**	**Stone: thickness of endocarp**		
QN		**(d)**	thin	Nonpareil	1
			medium	Ferragnes	2
			thick	Bartre	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
37. (+)	**37. (*)**	**VG**	**Stone: resistance to cracking**		
QN		**(d)**	absent or very weak	Nonpareil	1
			weak	Princess	2
			medium	Texas	3
			strong	Desmayo Largueta	4
G			very strong	Bartre	5
38. (+)	**38. (*)**	**VG**	**Stone: keel development**		
QN		**(d)**	weak	Marcona, Peerless	3
			medium	Nec Plus Ultra	5
			strong	Nonpareil	7
39.	**39. (*)**	**VG**	**Kernel: size**		
QN			very small	Kapareil	1
			small	Texas	3
			medium	Nonpareil	5
			large	Ferragnès	7
			very large	Bartre	9
40. (+)	**40. (*)**	**VG**	**Kernel: intensity of brown colour**		
QN			light	Nonpareil	1
			medium		2
			dark		3
41.	**41. (*)**	**VG**	**Kernel: rugosity of surface**		
QN			weak	Texas	1
			medium	Umm al-Fahm	3
			strong	Carmel	5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
42.	**42. (*)**	**VG**	**Time of leaf bud burst in relation to beginning of flowering**		
QN			earlier	Cavaliera	1
			same	Ferragnès	2
			later	Texas	3
43. (+)	**43. (*)**	**MG / VG**	**Time of beginning of flowering**		
QN			very early	Cavaliera, Zahaf	1
			very early to early	Avola, Desmayo Largueta, Rameira	2
			early	Chellaston, Princesse	3
			early to medium	Bartre, Marcona, Nec Plus Ultra	4
			medium	Cristomorto, Miagkoskorlupij, Nonpareil, Peerless	5
			medium to late	Ferragnès, Guara, Primorskij	6
			late	Felisia, Steliette	7
			late to very late	Vialfas	8
G			very late	Diamar, Penta	9
44. (+)	**44. (*)**	**MG / VG**	**Time of harvest**		
QN			very early	Cavaliera, Umm al-Fahm	1
			early	Nec Plus Ultra	3
			medium	Ferragnès	5
			late	Marcona	7
G			very late	Texas	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 at the central third of the shoot. The observations on the leaves should be made on mature leaves from current season's shoots.

b) Observations should be made at the time of full flowering.

c) Observations should be made approximately 3 months after full flowering.

d) Observations should be made after splitting or cracking of the flesh of the fruit.

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 upright | 2 upright to spreading | 3 spreading | 4 drooping

Ad. 5: One-year-old shoot: anthocyanin coloration

The anthocyanin coloration should be observed on the sunny side of the one-year-old shoot.

Ad. 6: Shoot: feathering

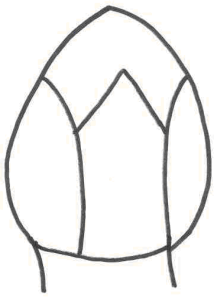
"Feathering" is the presence of secondary shoots on current year's shoot.

Ad. 13: Leaf blade: incisions of margin

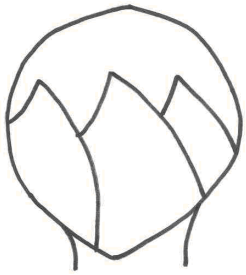
1 serrate | 2 crenate

Ad. 15: Flower bud: shape

1
triangular



2
ovate



3
circular

Ad. 16: Flower bud: colour of tip of petals

The colour of the tip of the petals should be observed just before opening.

Ad. 20: Petal: shape

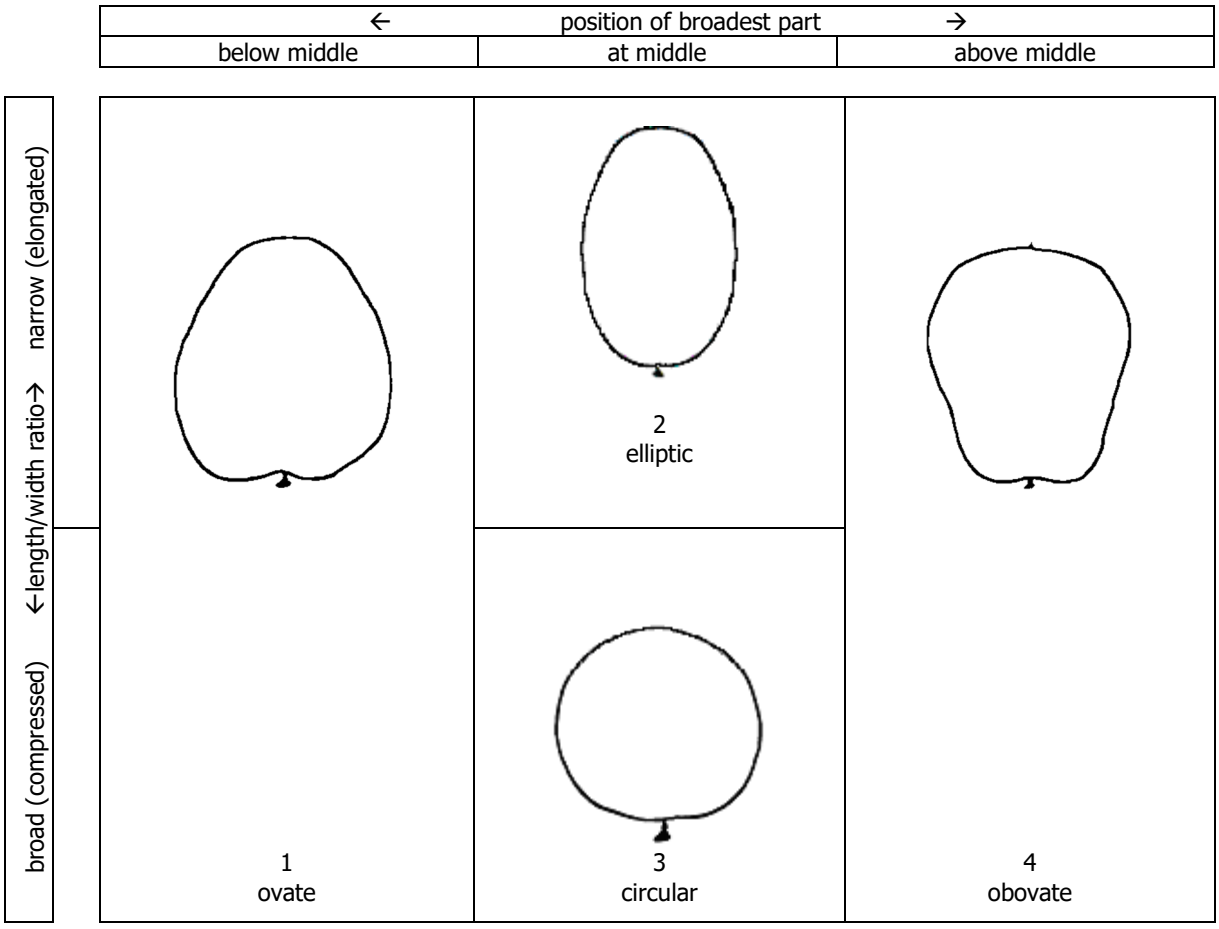
1
narrow elliptic

2
medium elliptic

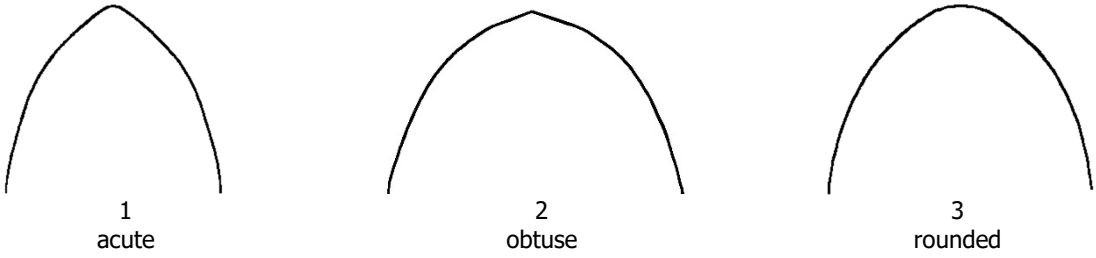
3
circular

4
rhombic

Ad. 28: Fruit: shape (in lateral view)
Ad. 34: Stone: shape (in lateral view)



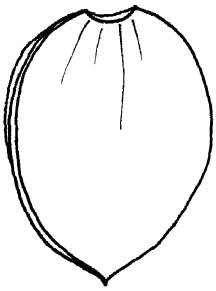
Ad. 29: Fruit: shape of apex
Ad. 35: Stone: shape of apex



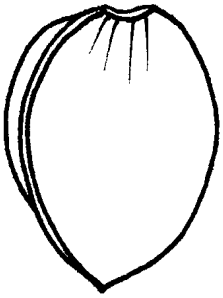
Ad. 37: Stone: resistance to cracking

The characteristic is observed as the ease with which the stone can be broken by hand.

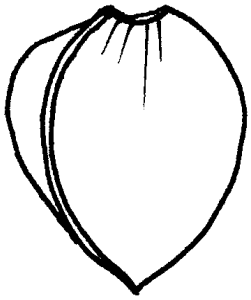
Ad. 38: Stone: keel development



3
weak



5
medium



7
strong

Ad. 40: Kernel: intensity of brown colour

The colour of the kernel should be observed on freshly opened stones.

Ad. 43: Time of beginning of flowering

The beginning of flowering is when 10% of flowers have fully opened.

Ad. 44: Time of harvest

The time of harvest is when 50% of fruits on the tree split.

9. LITERATURE

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10. TECHNICAL QUESTIONNAIRE

The Technical Questionnaire is available on the CPVO website under the following reference:
CPVO-TQ/056/2 – *Prunus dulcis* (Mill.) D.A. Webb - almond