



## **PROTOCOL FOR TESTS ON DISTINCTNESS, UNIFORMITY AND STABILITY**

*Prunus* L.

### **PRUNUS ROOTSTOCKS**

UPOV Code: PRUNU

**Adopted on 11/03/2015**

**Entry into force on 01/01/2015**

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## **1. SUBJECT OF THE PROTOCOL AND REPORTING**

### **1.1 Scope of the technical protocol**

This Technical Protocol applies to varieties used as rootstocks of all species of *Prunus* L.

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/en/publications/intro\\_dus.htm](http://www.upov.int/en/publications/intro_dus.htm)), its associated TGP documents (<http://www.upov.int/en/publications/tgp/>) and the relevant UPOV Test Guideline TG/187/2 dated 09/04/2014 (<http://www.upov.int/edocs/tgdocs/en/tg187.pdf>) for the conduct of tests for Distinctness, Uniformity and Stability.

### **1.2 Entry into Force**

The present protocol enters into force on **01.01.2015**. Any ongoing DUS examination of candidate varieties started 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 DUS test starts. The starting date of a DUS examination is considered to be the due date for submitting of plant material for the first test period.

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 technical examination 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 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://www.cpvo.europa.eu/main/en/home/documents-and-publications/s2-gazette> 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**

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

### **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/export/sites/upov/en/publications/tgp/documents/tgp\\_9\\_1.pdf](http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp_9_1.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.

The optimum stage of development for the assessment of each characteristic is indicated by a number in the third column of the Table of Characteristics. The stages of development denoted by each number are described in Chapter 8.1.

### **3.4 Test design**

3.4.1 Each test should be designed to result in a total of at least:

- (a) 5 plants for vegetatively propagated varieties,
- (b) 10 plants for seed propagated varieties.

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 Additional tests**

In accordance with Article 83(3) of Council Regulation 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, an additional test may be undertaken providing that a technically acceptable test procedure can be devised.

Additional 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.

### **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 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 for the examination of distinctness.

#### 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/export/sites/upov/en/publications/tgp/documents/tgp\\_9\\_1.pdf](http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp_9_1.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 for vegetatively propagated varieties on 5 plants or parts taken from each of 5 plants, and for seed propagated varieties on 10 plants or parts taken from each of 10 plants, and any other observations made on all plants in the test, disregarding any off-type plants.

#### 4.1.5 Method of observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the 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**

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/export/sites/upov/en/publications/tgp/documents/tgp\\_10\\_1.pdf](http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp_10_1.pdf)) prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in this Technical Protocol:

### **Uniformity assessment by off-types**

In the case of vegetatively propagated varieties, for the assessment of uniformity, a population standard of 1% and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 5 plants, no off-types are allowed.

In the case of seed propagated varieties, for the assessment of uniformity, a population standard of 1% and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 10 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/export/sites/upov/en/publications/tgp/documents/tgp\\_11\\_1.pdf](http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp_11_1.pdf))

In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

### 4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

## 5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL

- 5.1** The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.
- 5.2** Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.
- 5.3** The following have been agreed as useful grouping characteristics:
- a) Plant: vigour (characteristic 1)
  - b) Leaf blade: length (characteristic 15)
  - c) Leaf blade: shape (characteristic 18)
  - d) Leaf blade: colour of upper side (characteristic 22)
  - e) Leaf blade: incisions of margin (characteristic 25)
- 5.4** If other characteristics than those from the TP 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.

## 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.

#### 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

## 6.2 Example Varieties

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

## 6.3 Legend

For the CPVO N° column:

G	Grouping characteristic	– see Chapter 5
MG, MS, VG, VS	– see Chapter 4.1.5	
QL	Qualitative characteristic	
QN	Quantitative characteristic	
PQ	Pseudo-qualitative characteristic	

For the UPOV N° column:

The numbering of the characteristics is provided as a reference to the ad hoc UPOV guideline.

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

(a)-(c)	See Explanations on the Table of Characteristics in Chapter 8.1
(+)	See Explanations on the Table of Characteristics in Chapter 8.2



## 7. TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>1.</b>	<b>1.</b> (* )	<b>VG</b>	<b>Plant: vigour</b>		
(+)		(a)	weak	Edabriz, Ferlenain, Pumiselekt	1
<b>QN</b>			medium	Brokforest, GF 305, GM 61/1, Rubira, Ute	3
<b>G</b>			strong	Alkavo, Hamyra, MF 12/1	5
<b>2.</b>	<b>2.</b> (* )	<b>VG</b>	<b>Plant: habit</b>		
(+)		(a)	upright	Colt, Prudom	1
<b>QN</b>			spreading	Gisela 5	3
			drooping	Prunus besseyi	5
<b>3.</b>	<b>3.</b>	<b>VG</b>	<b>Plant: branching</b>		
(+)		(a)	weak	Ferciana, MF 12/1	1
<b>QN</b>			medium	Pixy	3
			strong	Gisela 5, Myruni	5
<b>4.</b>	<b>4.</b>	<b>VG</b>	<b>One-year-old shoot: thickness</b>		
(+)		(a)	thin	Ebadriz, Gisela 5, Hamyra	1
<b>QN</b>			medium	Colt, GF 655-2, Pixy	3
			thick	Brooks-60, MF 12/1	5
<b>5.</b>	<b>5.</b>	<b>VG/MS</b>	<b>One-year-old shoot: length of internode</b>		
(+)		(a)	short	Prudom, Pumiselekt, SL 64	1
<b>QN</b>			medium	Colt, VVA 1	3
			long	MF 12/1	5
<b>6.</b>	<b>6.</b>	<b>VG</b>	<b>One-year-old shoot: pubescence</b>		
(+)		(a)	absent	Pixy, Pumiselekt	1
<b>QL</b>			present	SL 64, Ute, VVA 1	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note		
7.	7.	VG	<b>One-year-old shoot: number of lenticels</b>				
			(+)	(a)	few	Colt, Fereley	1
			QN		medium	Gisela 4, Pixy	2
			many	SL 64, Ute	3		
8.	8.	VG	<b>One-year-old shoot: anthocyanin coloration of apex</b>				
			(+)	(a)	absent or very weak	MF 12/1	1
			QN		weak	Fereley	2
					medium	Pixy	3
					strong	Hamyra	4
			very strong	Citation, Ferciana, Rubira	5		
9.	9.	VG	<b>One-year-old shoot: position of vegetative bud in relation to shoot</b>				
			(+)	(a)	adpressed	Hamyra	1
			QN		slightly held out	Gisela 5	2
			markedly held out	MF 12/1	3		
10.	10.	VG	<b>One-year-old shoot: size of vegetative bud</b>				
			QN	(a)	small	Hamyra, SL 64	1
					medium	MF 12/1	3
			large	Piku 1	5		
11.	11. (*)	VG	<b>One-year-old shoot: shape of apex of vegetative bud</b>				
			(+)	(a)	acute	Hamyra, Pixy	1
			PQ		obtuse	Gisela 5	2
			rounded	MF 12/1, Pumiselekt	3		
12.	12.	VG	<b>One-year-old shoot: size of vegetative bud support</b>				
			(+)	(a)	small	Hamyra	1
			QN		medium	MF 12/1	2
			large		3		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>13.</b>	<b>13.</b> (*)	<b>VG</b>	<b>One-year-old shoot: feathering</b>		
(+)			weak	Felinem, Hamyra, Mayor, Pumiselekt	1
<b>QN</b>			medium	Adafuel, Ute	3
			strong	GF 677	5
<b>14.</b>	<b>14.</b>	<b>VG</b>	<b>Young shoot: anthocyanin coloration of young leaf</b>		
(+)		<b>(c)</b>	absent or weak	Edabriz, Fereley	1
<b>QN</b>			medium	GF 655-2, Hamyra, MF 12/1	3
			strong	Colt, Ute	5
<b>15.</b>	<b>15.</b> (*)	<b>VG/MS</b>	<b>Leaf blade: length</b>		
<b>QN</b>		<b>(b)</b>	very short	Myrobalan B	1
			short	Edabriz, Weito T 6	3
			medium	Piku 1	5
			long	MF 12/1	7
<b>G</b>			very long	GF 677	9
<b>16.</b>	<b>16.</b>	<b>VG/MS</b>	<b>Leaf blade: width</b>		
<b>QN</b>		<b>(b)</b>	very narrow	GF 677	1
			narrow	Myrobalan B	3
			medium	Fereley, Weito T 6	5
			broad	Brooks-60, MF 12/1	7
			very broad	Colt	9
<b>17.</b>	<b>17.</b>	<b>VG/MS</b>	<b>Leaf blade: ratio length/width</b>		
(+)		<b>(b)</b>	very small	GF 8-1, GM 61/1, Prudom	1
<b>QN</b>			small	Gisela 5	3
			medium	MF 12/1, Pixy	5
			large	Piku 3, Pumiselekt	7
			very large	GF 677	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>18.</b>	<b>18.</b> (* )	<b>VG</b>	<b>Leaf blade: shape</b>		
(+)		(b)	broad ovate	Edabriz, Gisela 5	1
<b>PQ</b>			medium ovate	Greenpac	2
			circular	Adara, Hamyra, Prudom, SL 64	3
			medium elliptic	Colt, Fereley, Pixy	4
			narrow elliptic	GF 677, Pumiselekt	5
<b>G</b>			obovate	Weiroot 158	6
<b>19.</b>	<b>19.</b>	<b>VG</b>	<b>Leaf blade: angle at apex</b>		
(+)		(b)	acute	GF 677, Pixy, Pumiselekt	1
<b>QN</b>			right-angled	Edabriz	2
			obtuse	Colt, Fereley	3
<b>20.</b>	<b>20.</b> (* )	<b>VG</b>	<b>Leaf blade: length of tip</b>		
(+)		(b)	short	Fereley	1
<b>QN</b>			medium	GM 61/1	3
			long	Colt, Ferlenain	5
<b>21.</b>	<b>21.</b> (* )	<b>VG</b>	<b>Leaf blade: shape of base</b>		
(+)		(b)	acute	Colt, Hamyra, Pumiselekt	1
<b>PQ</b>			obtuse	MF 12/1, Ferlenain	2
			truncate	GF 655-2, SL 64	3
<b>22.</b>	<b>22.</b> (* )	<b>VG</b>	<b>Leaf blade: colour of upper side</b>		
<b>PQ</b>		(b)	medium green	Gisela 5, Hamyra, Pixy, Pumiselekt	1
			dark green	Colt	2
			red	Citation	3
<b>G</b>			reddish brown	Rubira	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
23. QN	23.	VG (b)	<b>Leaf blade: glossiness of upper side</b>		
			absent or weak	Hamyra, Weito T 6	1
			medium	Fereley, Gisela 5	2
			strong	Colt, Ute	3
24. QN	24.	VG (b)	<b>Leaf blade: pubescence of lower side at distal part</b>		
			absent or weak	Hamyra	1
			medium	Pixy	2
			strong	Weito T 6	3
25. (+) QL G	25. (*)	VG (b)	<b>Leaf blade: incisions of margin</b>		
			crenate	Pixy	1
			crenate and serrate	Adesoto, GF 1869	2
			serrate	Gisela 5, Hamyra, VVA 1, Wangenheim	3
26. QN	26.	VG (b)	<b>Leaf blade: depth of incisions of margin</b>		
			very shallow		1
			shallow	Edabriz, Pumiselekt	2
			medium	Piku 3	3
			deep	Colt	4
27. QN	27. (*)	VG/MS (b)	<b>Petiole: length</b>		
			short	Piku 3	3
			medium	Pixy	5
			long		7
28. QN	28.	VG (b)	<b>Petiole: pubescence on upper side</b>		
			absent or very sparse	Colt, Pumiselekt	1
			sparse	Hamyra	2
			dense	Ute, Weito T 6	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
29. (+) QN	29.	VG (b)	<b>Petiole: depth of groove</b>		
			shallow	GF 8-1, MF 12/1	1
			medium	Gisela 5, Prudom	2
			deep	Myrobalan B	3
30. QN	30.	VG/MS (b)	<b>Leaf blade: length relative to petiole length</b>		
			short	Hamyra, Piku 1, Pumiselekt	1
			medium	Colt	3
			long	Fereley, GF 677, Weito T 6	5
31. QN	31.	VG/MS (b)	<b>Leaf: length of stipule</b>		
			very short	Weito T 6	1
			medium	Gisela 5, Pixy	3
			very long	MF 12/1	5
32. QL	32. (*)	VG (b)	<b>Leaf: presence of nectaries</b>		
			absent	Ferlenain	1
			present	GF 677, Pixy, St. Julien A, Weito T 6	9
33. QN	33.	VG (b)	<b>Leaf: predominant number of nectaries</b>		
			one	Hamyra, Weiroot 158	1
			two	Gisela 5, Pixy	2
			more than two	Weito T 6	3
34. QN	34.	VG (b)	<b>Leaf: position of nectaries</b>		
			predominantly on base of blade	Gisela 5	1
			equally distributed on base of blade and petiole	Colt, GF 655-2, Prudom	2
			predominantly on petiole	MF 12/1	3

<b>CPVO N°</b>	<b>UPOV N°</b>	<b>Stage, Method</b>	<b>Characteristics</b>	<b>Examples</b>	<b>Note</b>
<b>35.</b>	<b>35. (* )</b>	<b>VG</b>	<b>Nectary: colour</b>		
<b>PQ</b>		<b>(b)</b>	green	Pixy	1
			yellow	Weito T 6	2
			red	GF 8-1, Weiroot 158	3
			violet	Colt	4
<b>36.</b>	<b>36. (* )</b>	<b>VG</b>	<b>Nectary: shape</b>		
<b>QL</b>		<b>(b)</b>	circular	GF 655-2, Gisela 5, Prudom	1
			reniform	Colt, Pumiselekt	2

## 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 on the plant should be made in the dormant season.
- (b) Observations on the leaf should be made at the stage of fully developed leaves on the upper third of typical one-year-old shoots.
- (c) Observations on the young shoot should be made on the upper third of the one-year-old shoot during rapid growth.

### 8.2 Explanations for individual characteristics

#### Ad. 1: Plant: vigour

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

#### Ad. 2: Plant: habit



1  
upright



3  
spreading



5  
drooping

#### Ad. 3: Plant: branching

Modern Prunus Rootstock varieties are mostly propagated by in-vitro propagation. This type of propagation may affect, in particular, the expression of the respective variety in this characteristic. Special attention should be given to this aspect when establishing distinctness.

#### Ad. 4: One-year-old shoot: thickness

#### Ad. 5: One-year-old shoot: length of internode

#### Ad. 7: One-year-old shoot: number of lenticels

To be observed at the middle third of the shoot.

#### Ad. 6: One-year-old shoot: pubescence

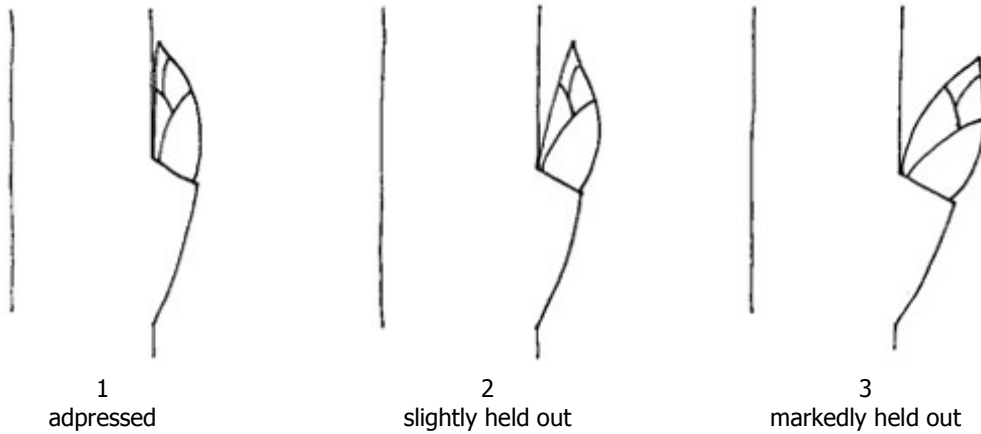
Should be assessed at the upper third of the shoot.

#### Ad. 8: One-year-old shoot: anthocyanin coloration of apex

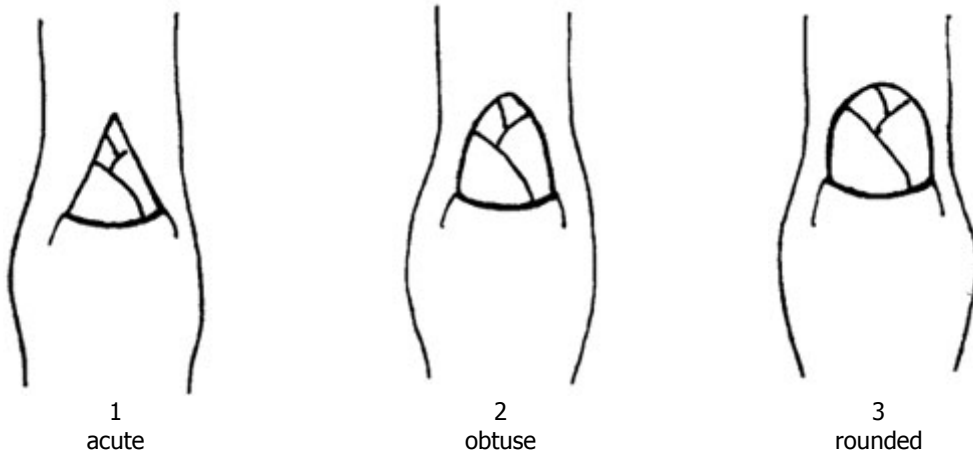
Should be assessed on the sunny side of the shoot.



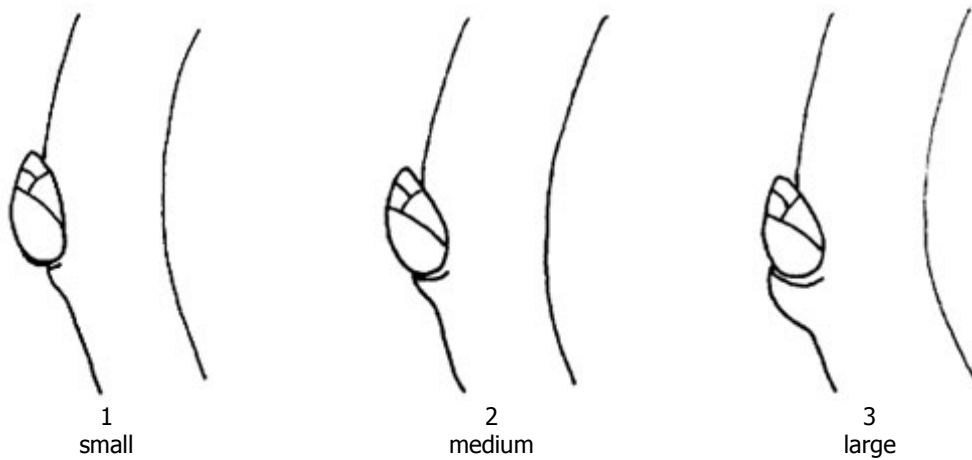
Ad. 9: One-year-old shoot: position of vegetative bud in relation to shoot



Ad. 11: One-year-old shoot: shape of apex of vegetative bud



Ad. 12: One-year-old shoot: size of vegetative bud support



Ad. 13: One-year-old shoot: feathering

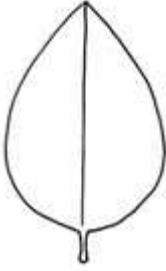

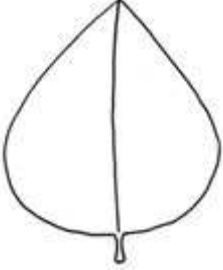
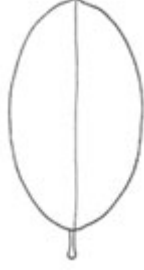


Feathering is the presence of secondary shoots on current year shoots. Should be assessed at the end of summer.

Ad. 14: Young shoot: anthocyanin coloration of young leaf

Should be assessed during rapid growth.

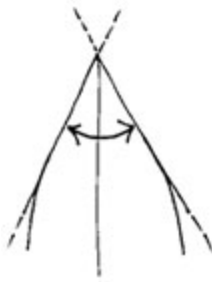
Ad. 17: Leaf blade: ratio length/width

Ad. 18: Leaf blade: shape

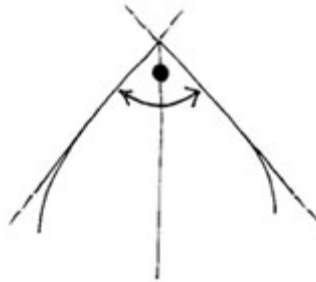
		← broadest part →		
		below middle	at middle	above middle
narrow (high) → width (ratio length/width) ← broad (low)	 2 medium ovate	 5 narrow elliptic		
	 1 broad ovate	 4 medium elliptic	 6 obovate	
		 3 circular		

Ad. 19: Leaf blade: angle at apex

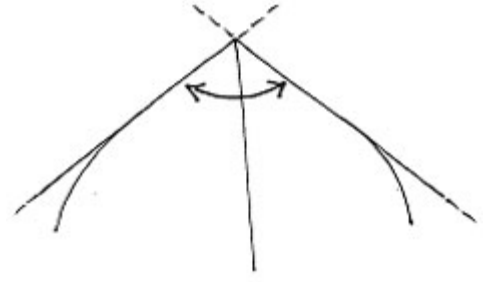
Should be assessed excluding the tip.



1  
acute



2  
right-angled



3  
obtuse

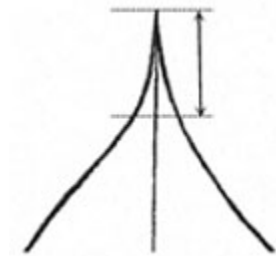
Ad. 20: Leaf blade: length of tip



1  
short



3  
medium



5  
long

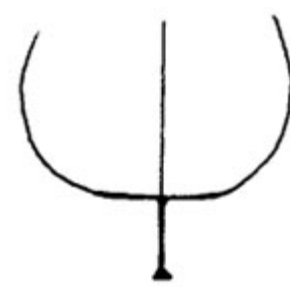
Ad. 21: Leaf blade: shape of base



1  
acute



2  
obtuse



3  
truncate

Ad. 25: Leaf blade: incisions of margin



1  
crenate

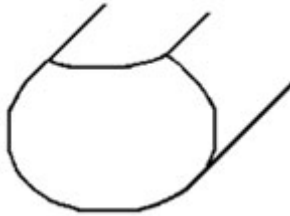


2  
crenate and serrate

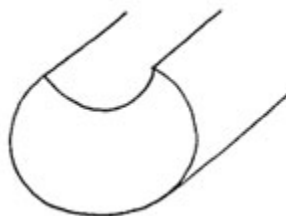


3  
serrate

Ad. 29: Petiole: depth of groove



1  
shallow



2  
medium



3  
deep

### 8.3 Explanations on the Example Varieties

Example var.	Use *	Species
Adafuel	PL	<i>Prunus dulcis</i> (Mill.) D.A. Webb x <i>P. persica</i> (L.) Batsch.
Adara	PL	<i>Prunus cerasifera</i> Ehrh., open pollinated
Adesoto	PL	<i>Prunus domestica</i> L. ssp. <i>insititia</i> (L.) Schneid
Alkavo	C	(syn. Altenweddingener Kaukasische Vogelkirsche) <i>Prunus avium</i> (L.) L.
Brokforest	C	(syn. M x M14) <i>Prunus mahaleb</i> L. x <i>P. avium</i> (L.) L.
Brooks-60	C	(syn. Broksec, M x M60) <i>Prunus mahaleb</i> L. x <i>P. avium</i> (L.) L.
Citation	AP, PE	<i>Prunus domestica</i> L. x <i>P. persica</i> (L.) Batsch.
Colt	C	<i>Prunus avium</i> (L.) L. x <i>P. pseudocerasus</i> Lindl.
Edabriz	C	<i>Prunus cerasus</i> L.
Felinem	PL	<i>Prunus persica</i> (L.) Batsch. x <i>P. dulcis</i> (Mill.) D.A. Webb
Ferciana	PL	( <i>Prunus cerasifera</i> Ehrh. x <i>P. salicina</i> Lindl.) x ( <i>P. domestica</i> L. x <i>P. persica</i> (L.) Batsch.)
Fereley	PL	( <i>Prunus salicina</i> Lindl. x <i>P. cerasifera</i> Ehrh.) x <i>P. spinosa</i> L.
Ferlenain	PL	<i>Prunus besseyi</i> L.H. Bailey x <i>P. cerasifera</i> Ehrh.
GF 8-1	PL	<i>Prunus marianna</i> ined.
GF 305	PE	<i>Prunus persica</i> (L.) Batsch.
GF 655-2	PL	<i>Prunus domestica</i> L. ssp. <i>insititia</i> (L.) Schneid.
GF 677	PL	<i>Prunus persica</i> (L.) Batsch. x <i>P. dulcis</i> (Mill.) D.A. Webb
GF 1869	PL	<i>Prunus domestica</i> (L.) x <i>P. persica</i> (L.) Batsch.
Gisela 4	C	(syn. 473/10) <i>Prunus avium</i> (L.) L. x <i>P. fruticosa</i> Pall.
Gisela 5	C	(syn. 148/2) <i>Prunus cerasus</i> L. x <i>P. canescens</i> Bois
GM 61/1	C	<i>Prunus dawyckensis</i> Sealy
Greenpac	AL, PE	[ <i>Prunus persica</i> (L.) Batsch x <i>P. davidiana</i> (L.) Batsch.] x [ <i>P. dulcis</i> (Mill.) D.A. Webb x <i>P. persica</i> ]
Hamyra	PL	<i>Prunus cerasifera</i> Ehrh.
Mayor	PE, PL	<i>Prunus persica</i> (L.) Batsch. x <i>P. dulcis</i> (Mill.) D.A. Webb
MF 12/1	C	<i>Prunus avium</i> (L.) L.
Myrobalan B	PL	<i>Prunus cerasifera</i> Ehrh.
Myruni	PL	<i>Prunus cerasifera</i> Ehrh.
Piku 1	C	(syn. Pi-Ku 4,20) <i>Prunus avium</i> (L.) L. x ( <i>P. canescens</i> Bois x <i>P. tomentosa</i> Thunb. ex Murr.)
Piku 3	C	(syn. Pi-Ku 4,83) <i>Prunus pseudocerasus</i> Lindl. x ( <i>P. canescens</i> Bois x <i>P. incisa</i> Thunb. ex Murr.)
Pixy	PL	<i>Prunus domestica</i> L. ssp. <i>insititia</i> (L.) Schneid.
Prudom	PL	<i>Prunus domestica</i> L. ssp. <i>domestica</i>
<i>Prunus besseyi</i>	PL	<i>Prunus besseyi</i> L.H. Bailey
Pumiselekt	AP, PE	<i>Prunus pumila</i> L.
Rubira	PE	<i>Prunus persica</i> (L.) Batsch.
SL 64	C	(syn. 'Saint Lucie 64') <i>Prunus mahaleb</i> L.
St. Julien A	PL	<i>Prunus domestica</i> L. ssp. <i>insititia</i> (L.) Schneid.
Ute	PL	<i>Prunus domestica</i> L. ssp. <i>domestica</i>
VVA 1	PL	<i>Prunus cerasifera</i> Ehrh. x <i>P. tomentosa</i> Thunb.
Wangenheim	PL	<i>Prunus domestica</i> L. ssp. <i>domestica</i>
Weiroot 158	C	<i>Prunus cerasus</i> L.
Weito T 6	C, PL	<i>Prunus tomentosa</i> Thunb. ex Murr.

\*

AL: for use as rootstock for almond varieties  
AP: for use as rootstock for apricot varieties  
C: for use as rootstock for cherry varieties  
PE: for use as rootstock for peach varieties  
PL: for use as rootstock for plum varieties

## 9. LITERATURE

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## **10. TECHNICAL QUESTIONNAIRE**

The Technical Questionnaire is available on the CPVO website under the following reference: CPVO-TQ/187/2