



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

***Ribes uva-crispa* L.**

**GOOSEBERRY**

UPOV Code: RIBES\_UVA

**Adopted on 21/04/2020**

**Entry into force on 01/04/2020**

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

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

This Technical Protocol applies to all varieties of *Ribes uva-crispa* 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/export/sites/upov/resource/en/tg\\_1\\_3.pdf](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/51/7 dated 20/10/2011 (<https://www.upov.int/edocs/tgdocs/en/tg051.pdf>) for the conduct of tests for Distinctness, Uniformity and Stability.

### **1.2 Entry into Force**

The present protocol enters into force on **01.04.2020**. 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.

#### **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 vigor, 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.

In particular, it is essential that the plant] produce a satisfactory crop of fruit in each of the two 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/edocs/tgpdocs/en/tgp\\_9.pdf](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.

### **3.6 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 characters listed in the protocol.

### **3.7 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.

#### **3.7.1 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.

In addition, the variety collection shall comprise images (e.g. photographs, illustrations or digitalized images) of representative parts of the plants of each variety, produced by the respective EO.

#### 3.7.2 Living Plant Material

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

#### 3.7.3 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.

#### 3.7.4 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.

#### 3.7.5 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](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.

#### 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](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 [type or types of propagation] 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.pdf](http://www.upov.int/edocs/tgpdocs/en/tgp_11.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.

## 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) Fruit: size (characteristic 24)
- b) Fruit: shape (characteristic 26)
- c) Fruit: colour (characteristic 27)
- d) Time of beginning of fruit ripening (characteristic 36)

**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.
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### For column 'Stage, method':

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



## 7. TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note		
<b>1.</b> <b>(+)</b>	<b>1.</b> <b>(*)</b>	<b>VG</b>	<b>Plant: vigour</b>				
			<b>QN</b>	<b>(a)</b>	very weak		1
					weak	Catherina	3
					medium	Hönings Früheste, Korsun	5
					strong	Mucurines, Whinham's Industry	7
very strong	Invicta, Rochusbeere	9					
<b>2.</b>	<b>2.</b> <b>(*)</b>	<b>VG</b>	<b>Plant: height</b>				
			<b>QN</b>	<b>(a)</b>	very short		1
					short	Catherina	3
					medium		5
					tall	Roshusbeere, Rokula	7
very tall	Reflamba	9					
<b>3.</b> <b>(+)</b>	<b>3.</b> <b>(*)</b>	<b>VG</b>	<b>One-year-old shoot: attitude</b>				
			<b>QN</b>	<b>(a)</b>	erect	Gelbe Triumph, Relina, Resistentta	1
					semi-erect	Invicta	3
horizontal	Korsun, Rolonda	5					
<b>4.</b>	<b>4.</b> <b>(*)</b>	<b>VG</b>	<b>Shoot: thorns</b>				
			<b>QL</b>	<b>(b)</b>	absent	Captivator, Spinefree	1
present	Reflamba	9					
<b>5.</b> <b>(+)</b>	<b>5.</b> <b>(*)</b>	<b>VG</b>	<b>Shoot: number of single thorns</b>				
			<b>QN</b>	<b>(b)</b>	none or very few	Captivator, Redeva, Whitesmith	1
					few	Rokula, Whinham's Industry	3
					medium	Invicta, Rolonda	5
					many	Hinnonmäen Keltainen, Remarka	7
very many	Rzeszowski	9					

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note	
<b>6.</b> <b>(+)</b>	<b>6.</b> <b>(*)</b>	<b>VG</b>	<b>Shoot: number of double thorns</b>			
		<b>QN</b>	<b>(b)</b>	none or very few	Remarka, Rokula	1
				few	Invicta	3
				medium	Whinham's Industry	5
				many	Reverta, Riversa	7
<b>7.</b> <b>(+)</b>	<b>7.</b> <b>(*)</b>	<b>VG</b>	<b>Shoot: number of triple thorns</b>			
		<b>QN</b>	<b>(b)</b>	none or very few		1
				few	Hinnonmäen Keltainen, Invicta, Korsun, Rokula	3
				medium	Riversa, Whinham's Industry	5
				many	Reverta, Whitesmith	7
				very many	Starkls Mehлтаufreie	9
<b>8.</b> <b>(+)</b>	<b>8.</b> <b>(*)</b>	<b>VG</b>	<b>Shoot: number of prickles on upper third</b>			
		<b>QN</b>	<b>(b)</b>	none or very few	May Duke	1
				few	Rote Orléans	3
				medium	Werdersche Frühe Mark	5
				many	Hönings Früheste	7
<b>9.</b> <b>(+)</b>	<b>9.</b> <b>(*)</b>	<b>VG</b>	<b>Bud: position in relation to shoot</b>			
		<b>QN</b>	<b>(b)</b>	adpressed or slightly held out	Whinham's Industry	1
				moderately held out	Whitesmith	2
				strongly held out	Weiße Volltragende	3
<b>10.</b>	<b>10.</b>	<b>VG</b>	<b>Bud: size</b>			
		<b>QN</b>	<b>(b)</b>	small		1
				medium		2
		large		3		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note		
<b>11.</b> <b>(+)</b>	<b>11.</b> <b>(*)</b>	<b>VG</b>	<b>Bud: shape of apex</b>				
			<b>PQ</b>	<b>(b)</b>	narrow acute	Rolanda	1
					broad acute	Szentendrei feher	2
					rounded		3
<b>12.</b> <b>(+)</b>	<b>12.</b> <b>(*)</b>	<b>VG</b>	<b>Young shoot: anthocyanin coloration</b>				
			<b>QN</b>	<b>(c)</b>	absent or very weak	Goliath, Hinnonmäen Keltainen, Rolonda	1
					weak	Invicta, Whinham's Industry	2
					medium	Risulfa, Riversa, Rokula	3
					strong	Siloba	4
					very strong		5
<b>13.</b>	<b>13.</b> <b>(*)</b>	<b>VG</b>	<b>Young leaf: intensity of green colour</b>				
			<b>QN</b>	<b>(d)</b>	very light	Hinnonmäen Keltainen, Summersgold	1
					light	May Duke, Whitesmith	2
					medium	Rote Frankfurter, Whinham's Industry	3
					dark	Mucurines, Resistenta	4
					very dark	Reverta, Riversa	5
<b>14.</b>	<b>14.</b> <b>(*)</b>	<b>VG</b>	<b>Young leaf: anthocyanin coloration</b>				
			<b>QN</b>	<b>(d)</b>	absent or very weak	Goliath, Nielukovskij	1
					weak	Gelbe Triumph	2
					medium	Whitesmith	3
					strong	Mucurines, Risulfa	4
					very strong		5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
15.	15. (*  QN	VG/MG  (e)	<b>Leaf: length</b>		
			short	Korsun	3
			medium	Invicta	5
			long		7
16.	16. (*  QN	VG/MG  (e)	<b>Leaf: width</b>		
			narrow	Hinnonmäen Punainen, Remarka	3
			medium	Korsun	5
			broad	Whinham's Industry	7
17. (+)	17. (*  QN	VG/MG  (e)	<b>Leaf: ratio length/width</b>		
			moderately compressed		3
			medium		5
			moderately elongated		7
18. (+)	18. (*  QN	VG  (e)	<b>Leaf: angle of base of blade with petiole</b>		
			very acute	Risulfa, Riversa, Rokula	1
			moderately acute	Achilles, California, Hinnonmäen Keltainen	2
			right angle	Pax, Retina, Rote Orléans	3
			moderately obtuse	Korsun, Lauffener Gelbe	4
			very obtuse		5
19.	19.  QN	VG  (e)	<b>Leaf: glossiness of upper side</b>		
			weak	Korsun, Maurers Sämling, Redeva, Rolonda	1
			medium	Hinnonmäen Punainen, Rote Orléans	3
			strong	Crown Bob, Whinham's Industry, Whitesmith	5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
20.	20. (*  QL	MG  (f)	<b>Inflorescence: number of flowers</b>		
			one	Hönings Früheste	1
			two	Hinnonmäen Keltainen, Rokula	2
			three		3
			more than three		4
21.	21.  QN	VG  (f)	<b>Flower: anthocyanin coloration of sepal</b>		
			absent or very weak	Reliza, Spinefree	1
			weak	Crown Bob, Hinnonmäen Keltainen, Redeava	2
			medium	Rokula, Whinham's Industry	3
			strong	Invicta, Reverta	4
	very strong		5		
22.	22.  QN	VG  (f)	<b>Flower: anthocyanin coloration of ovary</b>		
			absent or very weak	Reliza, Rote Frankfurter	1
			weak	Grüne Kugel, Rolonda, Whinham's Industry	2
			medium	Gelbe Triumph, Invicta	3
			strong	Reverta, Riversa	4
	very strong		5		
23.	23. (*  QN	VG  (f)	<b>Flower: pubescence of ovary</b>		
			absent or very weak	Remarka, Rochusbeere	1
			weak	Mukurines, Oakmere, Rexrot	2
			medium	Dams Mistake, Rafzuera	3
			strong	Invicta, Reflamba, Starkls Mehltaufreie	4
	very strong		5		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note			
<b>24.</b>	<b>24. (*)</b>	<b>VG</b>	<b>Fruit: size</b>					
				<b>QN</b>	<b>(g)</b>	very small	Amerikanische Gebirgstachelbeere	1
						small	Early Green Haire	3
						medium	Gelbe Triumph	5
						large	Grüne Kugel, Reflamba	7
<b>G</b>		very large	Catherina	9				
<b>25.</b>	<b>25. (*)</b>	<b>VG/MG</b>	<b>Fruit: ratio length/width</b>					
				<b>QN</b>	<b>(g)</b>	strongly compressed	Golda, May Duke	1
						moderately compressed	Early Green, Peggy, Rolonda	3
						medium	Rote Orléans	5
						moderately elongated	Grüne Flaschenbeere, Reflamba	7
<b>G</b>								
<b>26. (+)</b>	<b>26. (*)</b>	<b>VG</b>	<b>Fruit: shape</b>					
				<b>PQ</b>	<b>(g)</b>	circular	Bila, Rexrot	1
						elliptic	Achilles, Weiße Volltragende	2
						obovate	Grüne Flaschenbeere, Peggy, Piros izletes	3
<b>G</b>								
<b>27. (+)</b>	<b>27. (*)</b>	<b>VG</b>	<b>Fruit: colour</b>					
				<b>PQ</b>	<b>(g)</b>	whitish green	Weiße Kristall	1
						green	Grüne Kugel	2
						yellow green	Gelbe Triumph, Invicta	3
						yellow	Golda, Golden Lion, Rixanta	4
						medium red	Korsun, Rokula, Rolonda	5
						dark red	Achilles, Cernomore, May Duke, Remarka, Rubikon	6
<b>G</b>								

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note	
<b>28.</b> <b>(+)</b>	<b>28.</b> <b>(*)</b>	<b>VG</b>	<b>Fruit: bloom</b>			
		<b>QN</b>	<b>(g)</b>	absent or very weak	Lady Delamere, May Duke	1
				weak	Pax, Rokula, Whitesmith	2
				medium	Whinham's Industry	3
				strong	Resistentia	4
very strong	Robustenta, Rochusbeere	5				
<b>29.</b> <b>(*)</b>	<b>29.</b> <b>(*)</b>	<b>VG</b>	<b>Fruit: hairiness</b>			
		<b>QN</b>	<b>(g)</b>	absent or very weak	Golda, May Duke, Mucurines, Reflamba, Remarka, Riversa	1
				weak	Achilles, Rolonda	2
				medium	Pax, Whinham's Industry	3
				strong	Hönings Früheste	4
very strong		5				
<b>30.</b> <b>(+)</b>	<b>30.</b> <b>(+)</b>	<b>VG</b>	<b>Fruit: veining</b>			
		<b>QN</b>	<b>(g)</b>	weak	Korsun, Mauks Frühe Rote	1
				medium	Gelbe Triumph, Mucurines	3
strong	Rote Preis	5				
<b>31.</b> <b>(+)</b>	<b>31.</b> <b>(+)</b>	<b>VG</b>	<b>Fruit: strength of skin</b>			
		<b>QN</b>	<b>(g)</b>	weak	Mauks Frühe Rote, Whinham's Industry	1
				medium	Achilles, Gelbe Triumph, Rokula	3
strong	Mucurines, Rote Orléans	5				
<b>32.</b> <b>(+)</b>	<b>32.</b> <b>(*)</b>	<b>VG</b>	<b>Fruit: elongation of base</b>			
		<b>QN</b>	<b>(g)</b>	short	Hinnonmäen Keltainen, May Duke	1
				medium	Pax	3
long	Weißer Kristall	5				

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>33.</b> <b>(+)</b>	<b>33.</b> <b>(*)</b>	<b>VG/MG</b>  <b>(g)</b>	<b>Fruit: length of peduncle</b>		
			short	May Duke	1
			medium	Hinnonmäen Punainen, Rexrot, Rote Orléans	3
			long	Hinnonmäen Keltainen, Maurers Sämling, Redeva	5
<b>34.</b> <b>(+)</b>	<b>34.</b> <b>(*)</b>	<b>MG</b>	<b>Time of bud burst</b>		
			very early	Bila, Rokula	1
			early	Invicta, Rote Frankfurter	3
			medium	Früheste von Neuwied, Mucurines	5
			late	Grüner Edelstein, Korsun	7
			very late	Green Gem, Hinnonmäen Keltainen, Relina	9
<b>35.</b> <b>(+)</b>	<b>35.</b> <b>(*)</b>	<b>MG</b>	<b>Time of beginning of flowering</b>		
			early	May Duke, Whitesmith	3
			medium	Invicta, Whinham's Industry	5
			late	Hinnonmäen Keltainen, Rote Orléans	7
<b>36.</b> <b>(+)</b>	<b>36.</b> <b>(*)</b>	<b>MG</b>	<b>Time of fruit ripening</b>		
			very early	Remarka, Risulfa	1
			early	Hinnonmäen Punainen, May Duke, Reverta	3
			medium	Whinham's Industry	5
			late	Achilles, Hinnonmäen Keltainen	7
<b>G</b>			very late	Green Gem, Relina	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:

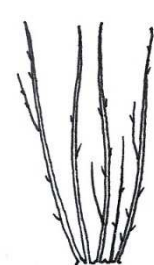
- a) Observations should be made during the dormant season before pruning.
- b) Observations should be made on one-year-old shoots during the dormant season before pruning.
- c) Observations should be made after the beginning of growth on shoots of approximately 10 cm in length.
- d) Observations should be made after the beginning of growth when the leaflets are about 2 cm wide and the shoots 3 to 5 cm long.
- e) Observations should be made at the stage of fruit maturity, when the fruits have achieved full colour, on the upper third of typical shoots.
- f) Observations should be made at the time of full flowering.
- g) Observations should be made at the time when the fruit is physiologically ripe.

### 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. 3: One-year-old shoot: attitude



1  
erect



3  
semi-erect



5  
horizontal

Ad. 5: Shoot: number of single thorns

Ad. 6: Shoot: number of double thorns

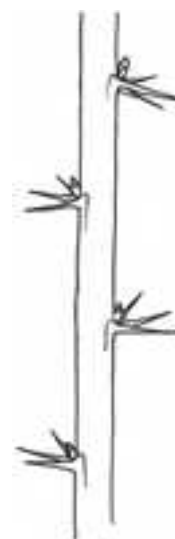
Ad. 7: Shoot: number of triple thorns



single thorns

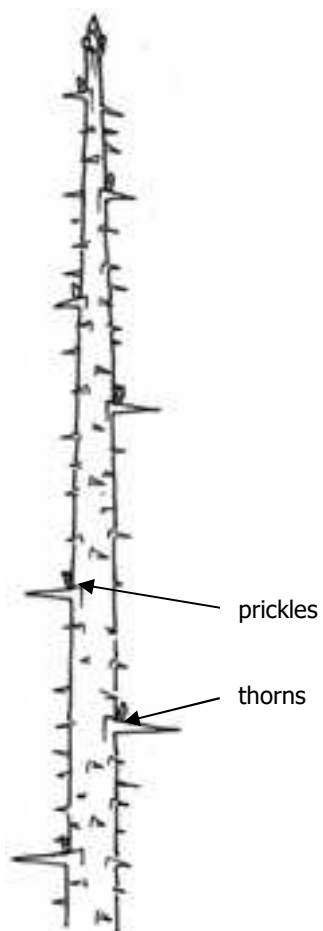


double thorns

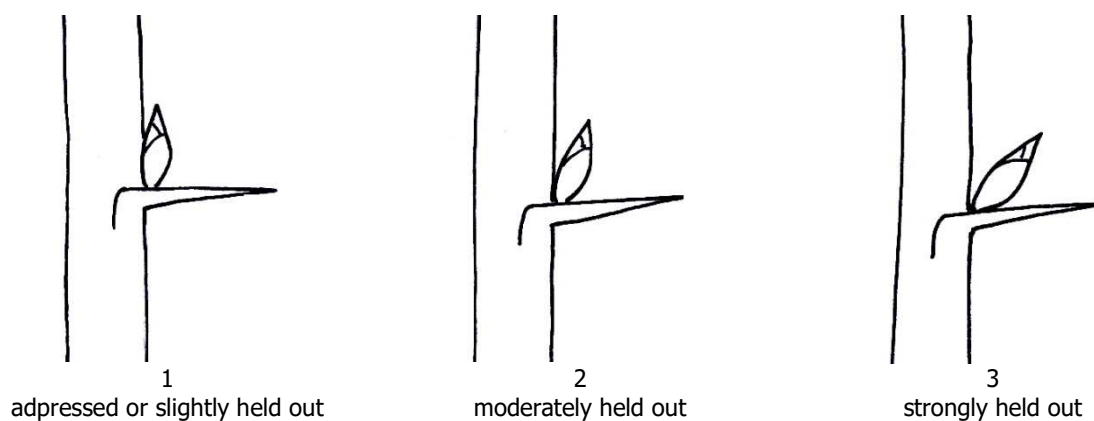


triple thorns

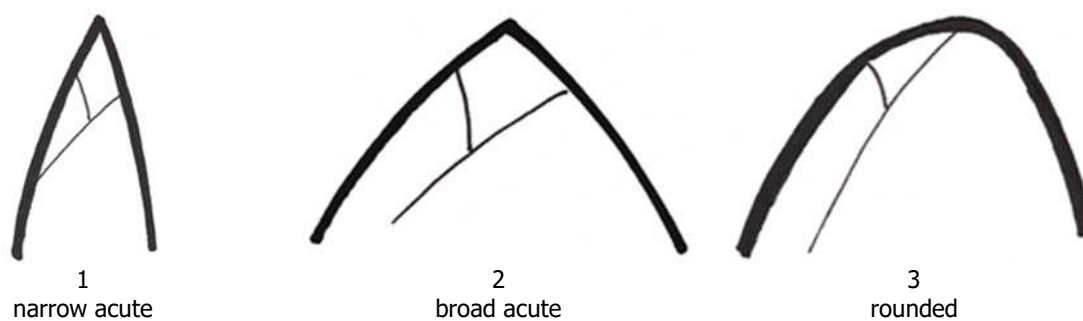
Ad. 8: Shoot: number of prickles on upper third



Ad. 9: Bud: position in relation to shoot



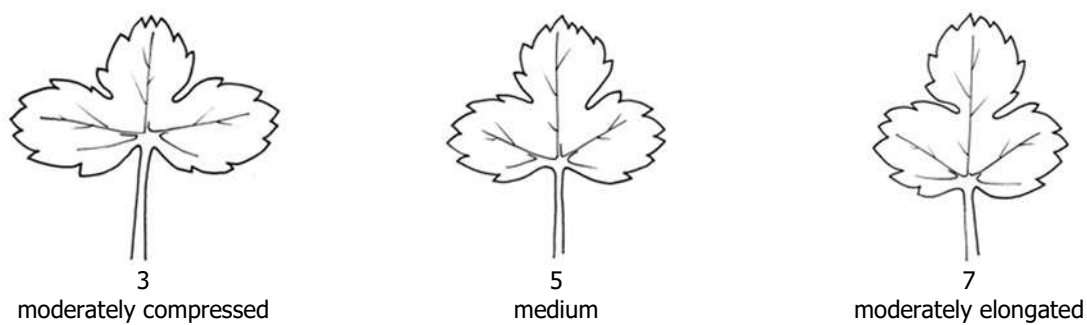
Ad. 11: Bud: shape of apex



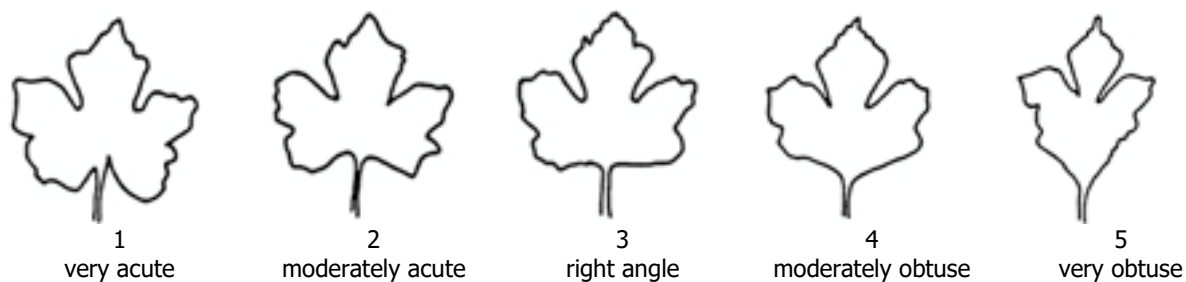
Ad. 12: Young shoot: anthocyanin coloration

The anthocyanin coloration should be observed on the leaf and the shoot at the stage of rapid growth.

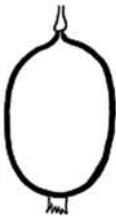


Ad. 17: Leaf: ratio length/width



Ad. 18: Leaf: angle of base of blade with petiole



Ad. 26: Fruit: shape

		← · broadest part · →	
		at middle	above middle
← ratio length/width →	narrow (elongated)	 <p>2 elliptic</p>	 <p>3 obovate</p>
		 <p>1 circular</p>	
	broad (compressed)		

Ad. 27: Fruit: colour

The fruit colour should be observed after the bloom has been removed.

Ad. 28: Fruit: bloom

The bloom of the fruit is considered as the waxy layer on the fruit skin, which forms part of the cuticle. It is also known as "glaucosity" and can be removed by rubbing.

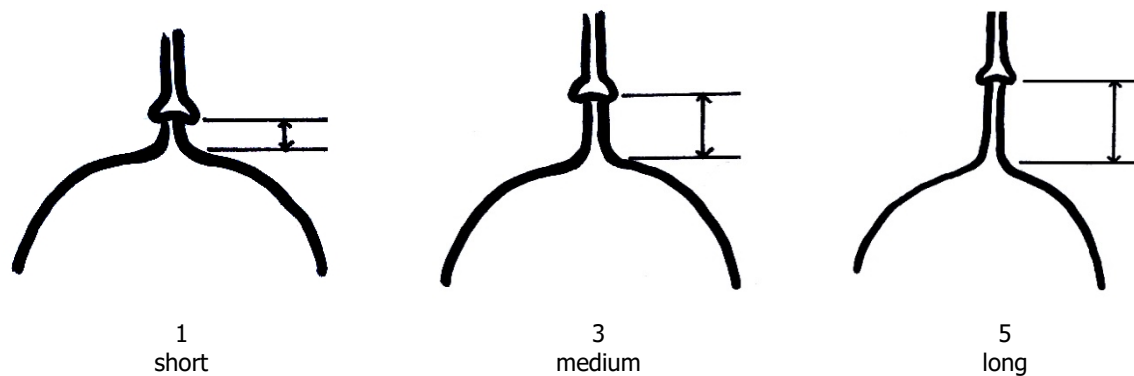
Ad. 30: Fruit: veining



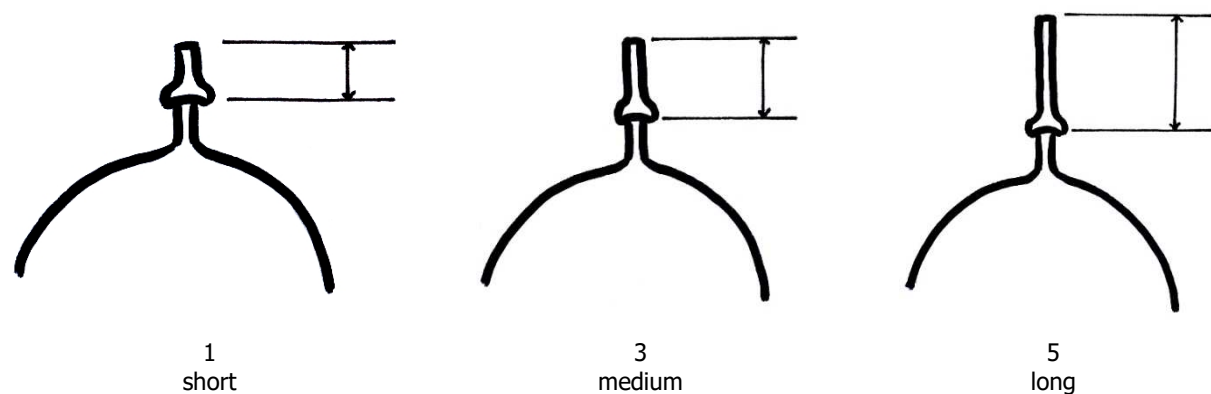
Ad. 31: Fruit: strength of skin

The strength of skin should preferably be observed by using a penetrometer.

Ad. 32: Fruit: elongation of base



Ad. 33: Fruit: length of peduncle



Ad. 34: Time of bud burst

The time of bud burst is when 10% of buds have first green leaves visible.

Ad. 35: Time of beginning of flowering

The time of beginning of flowering is when 10% of flowers are fully open.

Ad. 36: Time of beginning of fruit ripening

The time of fruit ripening is when 10% of fruits have achieved full colour.

**8.3 Explanations on growth stages**

{00-99} : explanation on the relevant growth stages scale

**Synonyms of the example varieties**

<b>Example varieties</b>	<b>Synonym(s)</b>
Early Green Haire	Early Green, Grüne Deutsche
Grüne Flaschenbeere	Green Willow
Hankkijas Delikatess	Hinnonmäki Grön, Hinnonmäki grün
Hinnonmäen Keltainen	Hinnonmäki gelb, Hinnonmäki Gul
Hinnonmäen Punainen	Hinnonmäki rot, Hinnonmäki Röd, Lepaan Punainen
Whitesmith	Weißer Triumph
Winham's Industry	Rote Triumph

## 9. LITERATURE

AVD för Fruktoch Bärödling: Internordic Index of Ribes and Rubus Cultivars. Alnarp, SE.

Hoffman, M.H.A., 2005: List of names of woody plants. Praktijkonderzoek Plant & Omgeving BV. Boskoop, NL, 871 pp.

Sorge, P., 1984: Beerenobstsorten. Verlag J. Neumann-Neudamm. Melsungen, DE, 259 pp.

## **10. TECHNICAL QUESTIONNAIRE**

The Technical Questionnaire is available on the CPVO website under the following reference:  
CPVO-TQ/051/2 Rev