



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

***Eustoma exaltatum* (L.) Salisb. ex G. Don  
subsp. *russellianum* (Hook.) Kartesz**

### **EUSTOMA**

UPOV Code: EUSTO\_GRA

**Adopted on 30/12/2022**

**Entry into force on 30/12/2022**

## **TABLE OF CONTENTS**

### **CPVO-TP/197/2**

1.	SUBJECT OF THE PROTOCOL AND REPORTING.....	3
1.1	Scope of the technical protocol.....	3
1.2	Entry into Force .....	3
1.3	Reporting between Examination Office and CPVO and Liaison with Applicant .....	3
2.	MATERIAL REQUIRED .....	3
2.1	Plant material requirements .....	3
2.2	Informing the applicant of plant material requirements.....	4
2.3	Informing about problems on the submission of material .....	4
3.	METHOD OF EXAMINATION.....	4
3.1	Number of growing cycles.....	4
3.2	Testing Place .....	4
3.3	Conditions for Conducting the Examination.....	4
3.4	Test design.....	4
3.5	Special tests for additional characteristics.....	4
3.6	Constitution and maintenance of a variety collection .....	4
4.	ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY .....	5
4.1	Distinctness.....	5
4.2	Uniformity .....	6
4.3	Stability.....	6
5.	GROUPING OF VARIETIES AND ORGANISATION OF THE GROWING TRIAL.....	7
6.	INTRODUCTION TO THE TABLE OF CHARACTERISTICS .....	7
6.1	Characteristics to be used .....	7
6.2.	States of expression and corresponding notes.....	8
6.3	Example Varieties.....	8
6.4	Legend.....	8
7.	TABLE OF CHARACTERISTICS.....	9
8.	EXPLANATIONS ON THE TABLE OF CHARACTERISTICS.....	20
8.1	Explanations covering several characteristics .....	20
8.2	Explanations for individual characteristics .....	20
8.3	Explanations on growth stages .....	<b>Error! Bookmark not defined.</b>
9.	LITERATURE .....	27
10.	TECHNICAL QUESTIONNAIRE .....	28

## 1. SUBJECT OF THE PROTOCOL AND REPORTING

### 1.1 Scope of the technical protocol

This Technical Protocol applies to all varieties of *Eustoma exaltatum* (L.) Salisb. ex G. Don subsp. *russellianum* (Hook.) Kartesz, *Bilamista grandiflora* Raf., *Eustoma grandiflorum* (Raf.) Shinners, *Eustoma russellianum* (Hook.) G. Don, *Lisianthus russellianus* Hook.

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/197/2 dated 26/10/2021 (<https://www.upov.int/edocs/tgdocs/en/tg197.pdf>) for the conduct of tests for Distinctness, Uniformity and Stability.

### 1.2 Entry into Force

The present protocol enters into force on **30.12.2022**. 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 pertinent agreement, on matters of particular urgency, the applicant may be directly informed at the same time as the CPVO particularly if a visit to the trial is advisable.

#### 1.3.3 Sample keeping in case of problems

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

## 2. MATERIAL REQUIRED

### 2.1 Plant material requirements

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

## **2.2 Informing the applicant of plant material requirements**

The CPVO informs the applicant that

- he is responsible for ensuring compliance with any customs and plant health requirements.
- the plant material supplied should be visibly healthy, not lacking in vigour, nor affected by any important pest or disease.
- the plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

## **2.3 Informing about problems on the submission of material**

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

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

## **3. METHOD OF EXAMINATION**

### **3.1 Number of growing cycles**

3.1.1 The minimum duration of tests should normally be a single growing cycle.

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/tqpdocs/en/tqp\\_9.pdf](http://www.upov.int/edocs/tqpdocs/en/tqp_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.

Because daylight varies, colour determinations made against a colour chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background. The colour chart and version used should be specified in the variety description.

### **3.4 Test design**

3.4.1 In the case of vegetatively propagated varieties, each test should be designed to result in a total of at least 20 plants.

In the case of seed-propagated varieties, each test should be designed to result in a total of at least 40 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 may comprise living plant material. The variety description shall be produced by the EO unless special cooperation exists between EOs and the CPVO. 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. 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 obtain living plant material of reference varieties as and when those varieties need to be included in growing trials or other tests.

### 3.6.3 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 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

## **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.

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

#### 4.1.2 Consistent differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

#### 4.1.3 Clear differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative,

quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Technical Protocols are familiar with the recommendations contained in the UPOV-General Introduction to DUS prior to making decisions regarding distinctness.

#### 4.1.4 Number of plants/parts of plants to be examined

In the case of vegetatively propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made 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.

In the case of seed-propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observation 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 vegetatively propagated and seed-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 and self-pollinated seed-propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied.

In the case of vegetatively propagated varieties of a sample size of 20 plants, 1 off-type is allowed.

In the case of self-pollinated seed propagated varieties of a sample size of 40 plants, 2 off-type are 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.

- 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 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) Plant: height (characteristic 1)
- b) Flower: type (characteristic 14)
- c) Flower: width (characteristic 18)
- d) Petal: main colour of inner side (characteristic 27) with the following groups:
  - Gr. 1: white
  - Gr. 2: light green
  - Gr. 3: yellow
  - Gr. 4: orange
  - Gr. 5: pink
  - Gr. 6: red
  - Gr. 7: purple
  - Gr. 8: blue purple
- e) Petal: secondary colour of inner side (characteristic 28) with the following groups:
  - Gr. 1: none
  - Gr. 2: white
  - Gr. 3: light green
  - Gr. 4: yellow
  - Gr. 5: orange
  - Gr. 6: pink
  - Gr. 7: red
  - Gr. 8: purple
  - Gr. 9: blue purple
- f) Petal: distribution of secondary colour of inner side (characteristic 29)
- g) Petal: colour of base of inner side (characteristic 31)

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

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

## **6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS**

### **6.1 Characteristics to be used**

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in the table of characteristics. All the characteristics shall be used, providing that observation of a characteristic is not rendered impossible by the expression of any other characteristic, or the expression of a characteristic is prevented by the environmental

conditions under which the test is conducted or by specific legislation on plant health. In the latter case, the CPVO should be informed.

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

## 6.2. States of expression and corresponding notes

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

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

## 6.3 Example Varieties

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

## 6.4 Legend

For column 'CPVO N°':

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

For column 'UPOV N°':

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

(*)	UPOV Asterisked characteristic	- Characteristics that are important for the international harmonization of variety descriptions.
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For column 'Stage, method':

MG, MS, VG, VS		-see Chapter 4.1.5
(a)-(c)	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>QN</b>	<b>1.</b> <b>(*)</b>	<b>MS/VG</b>	<b>Plant: height</b>		
			very short		1
			very short to short		2
			short	Sase LIS02	3
			short to medium		4
			medium	Momo Sen	5
			medium to tall		6
			tall	Mio Peach Chuchu	7
			tall to very tall		8
<b>G</b>		very tall		9	
<b>2.</b> <b>(+)</b>  <b>QN</b>	<b>2.</b>	<b>MS/VG</b>	<b>Plant: number of primary branches</b>		
			very few		1
			very few to few		2
			few	Shonai Cross Pink	3
			few to medium		4
			medium	Exe Pink	5
			medium to many		6
			many	Illumypink	7
			many to very many		8
		very many		9	
<b>3.</b> <b>(+)</b>  <b>PQ</b>	<b>3.</b>	<b>VG</b>	<b>Plant: position of primary branches</b>		
			upper part only	Saga T2go	1
			upper and middle part	Lilac Pink Thumb	2
		throughout	Cherrybee	3	

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>4.</b>  <b>QN</b>	<b>4.</b>	<b>MS/VG</b>	<b>Stem: number of nodes</b>		
			very few		1
			very few to few		2
			few	Cherrybee 3go	3
			few to medium		4
			medium	Momo Sen	5
			medium to many		6
			many	Shonai Cross White	7
			many to very many		8
		very many		9	
<b>5.</b> <b>(+)</b>  <b>QN</b>	<b>5.</b> <b>(*)</b>	<b>MS/VG</b>  <b>(a)</b>	<b>Leaf: length</b>		
			very short		1
			very short to short		2
			short	Diamond	3
			short to medium		4
			medium	Momo Sen	5
			medium to long		6
			long	Sase LIS02	7
			long to very long		8
		very long		9	

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note		
<b>6.</b> <b>(+)</b>	<b>6.</b> <b>(*)</b>	<b>MS/VG</b>	<b>Leaf: width</b>				
			<b>QN</b>	<b>(a)</b>	very narrow	1	
					very narrow to narrow	2	
					narrow	Cherrybee 3go	3
					narrow to medium		4
					medium	Momo Sen	5
					medium to broad		6
					broad	Komachi White Dress	7
					broad to very broad		8
			very broad	9			
<b>7.</b> <b>(+)</b>	<b>7.</b> <b>(*)</b>	<b>MS/VG</b>	<b>Leaf: ratio length/width</b>				
			<b>QN</b>	<b>(a)</b>	very low	1	
					very low to low	2	
					low	Komachi White Dress	3
					low to medium		4
					medium	Momo Sen	5
					medium to high		6
					high	Shonai Cross White	7
					high to very high		8
			very high	9			
<b>8.</b> <b>(+)</b>	<b>8.</b> <b>(*)</b>	<b>VG</b>	<b>Leaf: glaucosity</b>				
			<b>QN</b>	<b>(a)</b>	absent or weak	Cherrybee	1
					medium	Komachi Green Dress	2
			strong	Momo Sen	3		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>9. (+)</b>  <b>QN</b>	<b>9. (* )</b>	<b>VG</b>	<b>Leaf: intensity of green colour</b>		
		<b>(a)</b>	light	Saga T2go	1
			medium	Momo Sen	2
			dark	Lilac Pink Thumb	3
<b>10. (+)</b>  <b>QN</b>	<b>10.</b>	<b>MS/VG</b>	<b>Pedicel: length</b>		
			very short		1
			very short to short		2
			short	Lilac Pink Thumb	3
			short to medium		4
			medium	Momo Sen	5
			medium to long		6
			long	Diamond	7
			long to very long		8
	very long		9		
<b>11. (+)</b>  <b>QN</b>	<b>11.</b>	<b>MS/VG</b>	<b>Calyx: length</b>		
			very short		1
			very short to short		2
			short	Cherrybee	3
			short to medium		4
			medium	Momo Sen	5
			medium to long		6
			long	Asamiyae	7
			long to very long		8
	very long		9		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>12.</b>	<b>12.</b>	<b>VG</b>	<b>Calyx: anthocyanin coloration</b>		
<b>QN</b>			absent or weak	Light Blue Thumb	1
			medium		2
			strong	Cherrybee	3
<b>13.</b>	<b>13.</b>	<b>MS/VG</b>	<b>Flower: number</b>		
<b>QN</b>			very few		1
			very few to few		2
			few	Kirara Apricot 2	3
			few to medium		4
			medium	Momo Sen	5
			medium to many		6
			many	Mahoroba Peach	7
			many to very many		8
			very many		9
<b>14. (+)</b>	<b>14. (*)</b>	<b>VG</b>	<b>Flower: type</b>		
<b>QL</b>			single	Momo Sen	1
<b>G</b>			double	Piccorosa Pink Picotee	2
<b>15.</b>	<b>15. (*)</b>	<b>MS/VG</b>	<b><u>Only varieties with Flower: type: double: Flower: number of petals</u></b>		
<b>QN</b>			very few		1
			very few to few		2
			few	Komachi Green Dress	3
			few to medium		4
			medium	Diamond	5
			medium to many		6
			many	Lination Pink Picotee	7
			many to very many		8
			very many		9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>16.</b> <b>(+)</b>  <b>PQ</b>	<b>16.</b>	<b>VG</b>	<b>Flower: shape</b>		
			circular	Chigusa	1
			pentagon	Azumanoshirabe	2
			star-shaped	Shonai Cross White	3
<b>17.</b> <b>(+)</b>  <b>QN</b>	<b>17.</b>	<b>MS/VG</b>	<b>Flower: height</b>		
			very short		1
			very short to short		2
			short	Chigusa	3
			short to medium		4
			medium	Momo Sen	5
			medium to tall		6
			tall		7
			tall to very tall		8
very tall		9			
<b>18.</b> <b>(+)</b>  <b>QN</b>	<b>18.</b> <b>(*)</b>	<b>MS/VG</b>	<b>Flower: width</b>		
			very narrow		1
			very narrow to narrow		2
			narrow	Chigusa	3
			narrow to medium		4
			medium	Momo Sen	5
			medium to broad		6
			broad	Rainbow White	7
			broad to very broad		8
<b>G</b>		very broad		9	

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>19. (+)</b>  <b>QN</b>	<b>19.</b>	<b>MS/VG</b>	<b>Flower: ratio height/width</b>		
			very low		1
			very low to low		2
			low	Mahoroba Peach	3
			low to medium		4
			medium	Momo Sen	5
			medium to high		6
			high	Shonai Cross White	7
			high to very high		8
		very high		9	
<b>20. (+)</b>  <b>QN</b>	<b>20. (* )</b>	<b>MS/VG  (b)</b>	<b>Petal: length</b>		
			very short		1
			very short to short		2
			short	Komachi White Dress	3
			short to medium		4
			medium	Momo Sen	5
			medium to long		6
			long	Suibijin	7
			long to very long		8
		very long		9	

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>21.</b> <b>(+)</b>  <b>QN</b>       <b>G</b>	<b>21.</b> <b>(*)</b>	<b>MS/VG</b>  <b>(b)</b>	<b>Petal: width</b>		
			very narrow		1
			very narrow to narrow		2
			narrow	Shonai Cross White	3
			narrow to medium		4
			medium	Momo Sen	5
			medium to broad		6
			broad	Suibijin	7
			broad to very broad		8
very broad		9			
<b>22.</b> <b>(+)</b>  <b>PQ</b>	<b>22.</b>	<b>VG</b>  <b>(b)</b>	<b>Petal: shape</b>		
			elliptic	Shonai Cross Pink	1
			oblanceolate	Bouquet White	2
			obovate	Momo Sen	3
<b>23.</b> <b>(+)</b>  <b>PQ</b>	<b>23.</b> <b>(*)</b>	<b>VG</b>  <b>(b)</b>	<b>Petal: shape of apex</b>		
			acuminate	Lination Pink Picotee	1
			obtuse		2
			rounded	Momo Sen	3
			flat	Komachi Green Dress	4
			retuse	Piccorosa Pink Picotee	5
<b>24.</b> <b>(+)</b>  <b>QN</b>	<b>24.</b>	<b>VG</b>  <b>(b)</b>	<b>Petal: recurving of margin</b>		
			absent or very weak	Tokyo E1go	1
			weak	Cute Green	2
			medium	Light Blue Thumb	3
			strong	Momo Sen	4
			very strong	Petit Snow	5



CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note		
<b>25.</b> <b>(+)</b>	<b>25.</b> <b>(*)</b>	<b>VG</b>	<b>Petal: undulation of margin</b>				
			<b>QN</b>	<b>(b)</b>	very weak		1
					very weak to weak		2
					weak	Momo Sen	3
					weak to medium		4
					medium	Mio Peach Chuchu	5
					medium to strong		6
					strong	Mahoroba Peach	7
					strong to very strong		8
very strong		9					
<b>26.</b> <b>(+)</b>	<b>26.</b> <b>(*)</b>	<b>VG</b>	<b>Petal: depth of incisions of margin</b>				
			<b>QN</b>	<b>(b)</b>	absent or very shallow	Momo Sen	1
					shallow		2
					medium	Mio Peach Chuchu	3
					deep		4
very deep	Sase LIS02	5					
<b>27.</b> <b>(*)</b>	<b>27.</b> <b>(*)</b>	<b>VG</b>	<b>Petal: main colour of <u>inner</u> side</b>				
			<b>PQ G</b>	<b>(b), (c)</b>	RHS Colour Chart (indicate reference number)		
<b>28.</b> <b>(*)</b>	<b>28.</b> <b>(*)</b>	<b>VG</b>	<b>Petal: secondary colour of <u>inner</u> side</b>				
			<b>PQ G</b>	<b>(b), (c)</b>	RHS Colour Chart (indicate reference number)		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>29. (+)</b>	<b>29. (*)</b>	<b>VG</b>	<b>Petal: distribution of secondary colour of <u>inner</u> side</b>		
<b>PQ</b>		<b>(b), (c)</b>	none		1
			at tip	Komachi Kiss	2
			margin	Piccorosa Pink Picotee	3
			central bar		4
			distal half	Mahoroba Peach	5
			basal half	Cherrybee 2go	6
<b>G</b>			throughout		7
<b>30. (+)</b>	<b>30. (*)</b>	<b>VG</b>	<b>Petal: pattern of secondary colour of <u>inner</u> side</b>		
<b>PQ</b>		<b>(b), (c)</b>	solid	Piccorosa Pink Picotee	1
			flushed	Mahoroba Peach	2
			irregular		3
<b>31. (+)</b>	<b>31. (*)</b>	<b>VG</b>	<b>Petal: colour of base of <u>inner</u> side</b>		
<b>PQ</b>		<b>(b)</b>	green	Chigusa	1
			violet	Momo Sen	2
<b>G</b>			brown	Sase LIS02	3
<b>32.</b>	<b>32. (*)</b>	<b>VG</b>	<b>Petal: main colour of <u>outer</u> side</b>		
<b>PQ</b>		<b>(b), (c)</b>	RHS Colour Chart (indicate reference number)		
<b>33.</b>	<b>33.</b>	<b>VG</b>	<b>Style: anthocyanin coloration</b>		
<b>QN</b>			absent or weak	Momo Sen	1
			medium		2
			strong	Cherrybee 2go	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>34. (+)</b>	<b>34.</b>	<b>MG/VG</b>	<b>Only seed-propagated varieties: Time of beginning of flowering</b>		
<b>QN</b>			very early		1
			very early to early		2
			early	Cherrybee 3go	3
			early to medium		4
			medium	Mahoroba Yellow	5
			medium to late		6
			late	Saga T2go	7
			late to very late		8
			very late		9

## 8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

### 8.1 Explanations covering several characteristics

Unless otherwise indicated all characteristics should be observed at the time of full flowering.

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

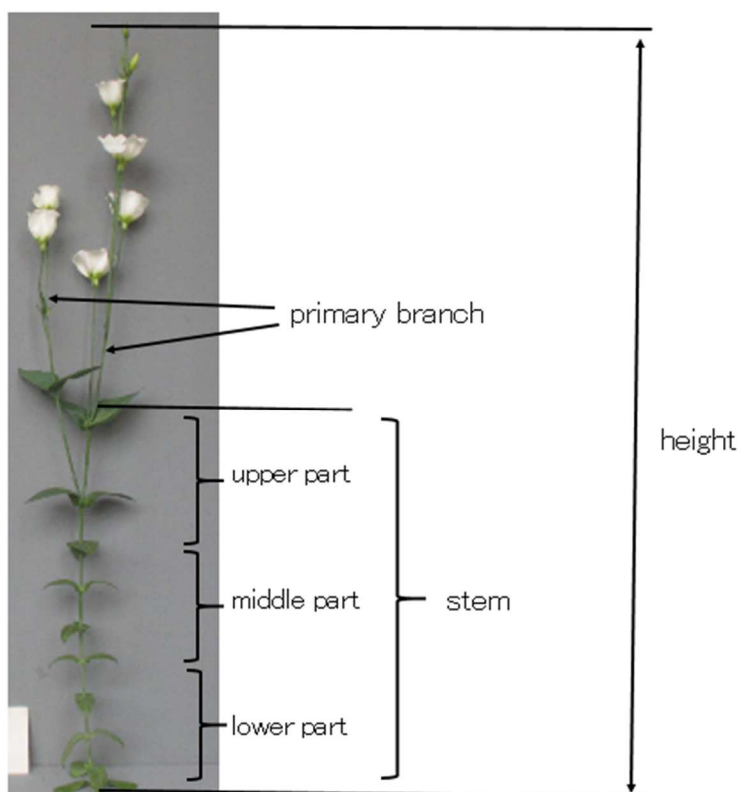
- a) Observations should be made on fully developed leaves from the middle third of a stem.
- b) Observations should be made on a petal from the outermost whorl.
- c) The main colour is the colour with the largest area excluding the colour at base. The secondary colour is the colour with the second largest area excluding the colour at base. In cases where the areas of the main and secondary colour are too similar to decide which colour has the largest area, the darker colour is considered to be the main colour.

### 8.2 Explanations for individual characteristics

Ad 1: Plant: height

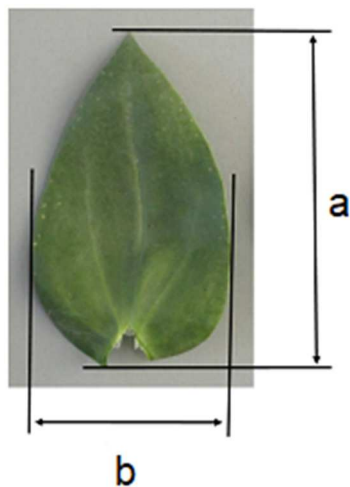
Ad 2: Plant: number of primary branches

Ad 3: Plant: position of primary branches



Ad 5: Leaf: length

Ad 6: Leaf: width



a = length  
b = width

Ad 7: Leaf: ratio length/width



3  
low



5  
medium



7  
high

Ad 8: Leaf: glaucosity

Observations should be made on the upper side of the leaves.

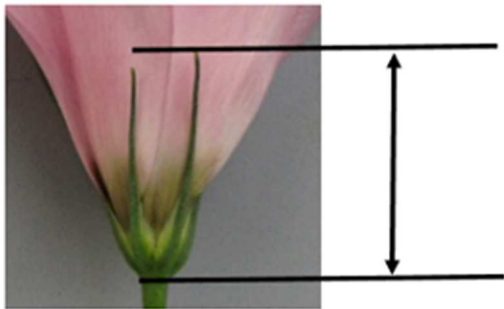
Ad 9: Leaf: intensity of green colour

Observations should be made on the upper side of the leaf after removing the glaucosity.

Ad 10: Pedicel: length



Ad 11: Calyx: length



Ad 14: Flower: type

Single varieties have only five petals.



1  
single



2  
double

Ad 16: Flower: shape



1  
circular



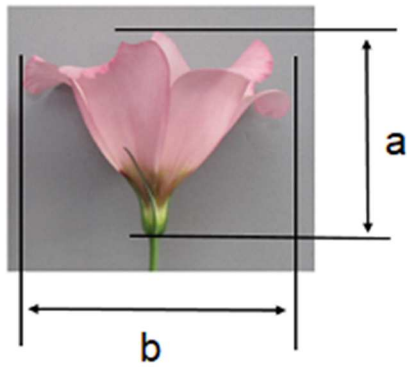
2  
pentagon



3  
star-shaped

Ad 17: Flower: height

Ad 18: Flower: width



a = height  
b = width

Ad 19: Flower: ration height/width



3  
low



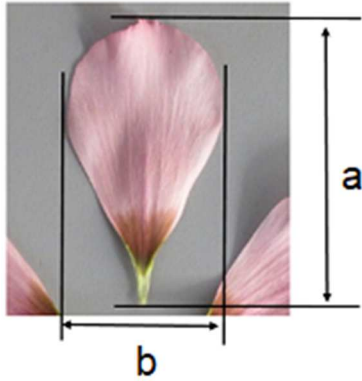
5  
medium



7  
high

Ad 20: Petal: length

Ad 21: Petal: width



a = length  
b = width

Ad 22: Petal: shape



1  
elliptic



2  
oblanceolate



3  
obovate

Ad 23: Petal: shape of apex



1  
acuminate



2  
obtuse



3  
rounded



4  
flat



5  
retuse

Ad 24: Petal: recurving of margin



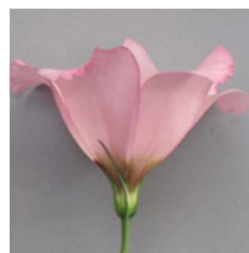
1  
absent or very weak



2  
weak



3  
medium



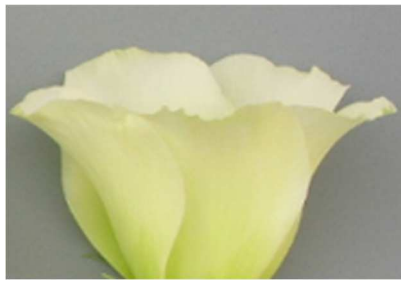
4  
strong



5  
very strong



Ad 25: Petal: undulation of margin



3  
weak



5  
medium



7  
strong

Ad 26: Petal: depth of incisions of margin



1  
absent or very shallow



2  
shallow



5  
very deep

Ad 29: Petal: distribution of secondary colour of inner side



1  
none



2  
at tip



3  
margin



4  
central bar



5  
distal half



6  
basal half

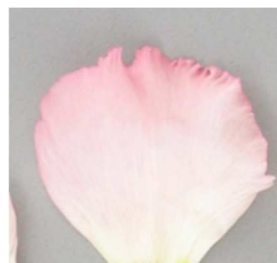


7  
throughout

Ad 30: Petal: pattern of secondary colour of inner side



1  
solid



2  
flushed



3  
irregular

Ad 31: Petal: colour of base of inner side



Ad 34: Only seed-propagated varieties: Time of beginning of flowering

The time of beginning of flowering is reached at when at least 50% of plants have at least one open flower.

## 9. LITERATURE

Kiyoshi Okawa, 1992: Eustoma (Torukogikyo) Seibundo-Shinkosha Co., Tokyo, JP.

## 10. TECHNICAL QUESTIONNAIRE

The Technical Questionnaire is available on the [CPVO website](#) under the following reference:  
CPVO-TQ/197/1 – *Eustoma exaltatum* (L.) Salisb. ex G. Don subsp. *russelianum* (Hook.) Kartesz – eustoma, lisianthus

Link to e-TQ:

<https://online.plantvarieties.eu/backOfficeFormQuestions?viewFormId=13273&viewFormType=TQ&viewFormLang=EN&speciesIds=EUS01&status=1,2&order=formName>