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

PROTOCOL FOR TESTS ON DISTINCTNESS, UNIFORMITY AND STABILITY

Alstroemeria L.

ALSTROEMERIA

UPOV Code: ALSTR

Adopted on 14/04/2021

Entry into force on 14/04/2021

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CPVO-TP/029/3

1. SUBJECT OF THE PROTOCOL AND REPORTING

1.1 Scope of the technical protocol

This Technical Protocol applies to all varieties of ***Alstroemeria*** **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), its associated TGP documents (http://www.upov.int/tgp/en/) and the relevant UPOV Test Guideline TG/29/8 dated 29/10/2019 (link) for the conduct of tests for Distinctness, Uniformity and Stability.

1.2 Entry into Force

The present protocol enters into force on **14.04.2021**. 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.

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1.3 Reporting between Examination Office and CPVO and Liaison with Applicant

1.3.1 Reporting between Examination Office and CPVO

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

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

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

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

1.3.2 Informing on problems in the DUS test

If problems arise during the course of the test the CPVO should be informed immediately so that the information can be passed on to the applicant. Subject to prior permanent agreement, the applicant may be directly informed at the same time as the CPVO particularly if a visit to the trial is advisable.

1.3.3 Sample keeping in case of problems

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

2. MATERIAL REQUIRED

2.1 Plant material requirements

Information with respect to the agreed closing dates and submission requirements of plant material for the technical examination of varieties can be found on http://cpvo.europa.eu/applications-and-examinations/technical-examinations/submission-of-plant-material-s2-publication in the special issue S2 of the Official Gazette of the Office. General requirements on submission of samples are also to be found following the same link.

2.2 Informing the applicant of plant material requirements

The CPVO informs the applicant that

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

2.3 Informing about problems on the submission of material

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

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

3. METHOD OF EXAMINATION

3.1 Number of growing cycles

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

3.2 Testing Place

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness" http://www.upov.int/edocs/tgpdocs/en/tgp_9.pdf.

3.3 Conditions for Conducting the Examination

The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

Observation of colour by eye
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

Single plots

3.4.1 Each test should be designed to result in a total of at least 8 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 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

Ornamental species

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

Ornamental species

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) 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

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 7 plants or parts taken from each of 7 plants and any other observations made on all plants in the test, disregarding any off-type plants.

Where appropriate, the following sentence may be added:
In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 1.

4.1.5 Method of observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the third column of the Table of Characteristics (see document TGP/9 "Examining Distinctness", Section 4 "Observation of characteristics"):

MG: single measurement of a group of plants or parts of plants
MS: measurement of a number of individual plants or parts of plants
VG: visual assessment by a single observation of a group of plants or parts of plants
VS: visual assessment by observation of individual plants or parts of plants

Type of observation: visual (V) or measurement (M)
"Visual" observation (V) is an observation made on the basis of the expert's judgment. For the purposes of this document, "visual" observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. colour charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)
For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 Uniformity

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

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

4.3 Stability

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

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

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) Leaf blade: variegation (characteristic 9)

c) Flower: main colour (characteristic 13)

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

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

6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS

6.1 Characteristics to be used

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in the table of characteristics. All the characteristics shall be used, providing that observation of a characteristic is not rendered impossible by the expression of any other characteristic, or the expression of a characteristic is prevented by the environmental conditions under which the test is conducted or by specific legislation on plant health. In the latter case, the CPVO should be informed.

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

6.2. States of expression and corresponding notes

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

State	Note
small	3
medium	5
large	7

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

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

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

6.3 Example Varieties

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

6.4 Legend

For column 'CPVO N°':

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

For column 'UPOV N°':

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

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

For column 'Stage, method':

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

7. TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
1. (+)	**1. (*)**	**MG/MS /VG**	**Plant: height**		
	QN	**(a)**	short	Alsdun01, Tesnoram	3
			medium	Konaribean, Tesrome	5
G			tall	Konplatina, Zalsabri	7
2. (+)	**2. (*)**	**MG/MS /VG**	**Stem: thickness**		
	QN	**(a)**	thin	Alsdun01, Tesmoonli	3
			medium	Kongrenday, Zalsabri	5
			thick	Konplatina, Zalsatista	7
3.	**3.**	**VG**	**Stem: anthocyanin coloration**		
	QN	**(a)**	absent or very weak		1
			weak		3
			medium		5
			strong		7
4.	**4.**	**VG**	**Stem: distribution of anthocyanin coloration**		
	PQ	**(a)**	at base only	Konantarct	1
			basal half only	Konalegria	2
			basal and apical part	Zanalsron	3
			throughout	Staqueen	4
5. (+)	**5. (*)**	**MG/MS /VG**	**Leaf: length**		
	QN	**(a), (b)**	short	Konaribean, Zalsabri	3
			medium	Alsdun01, Tesmars	5
			long	Konplatina, Zanalsron	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
6. (+)	**6. (*)**	**MG/MS /VG**	**Leaf: width**		
	QN	**(a), (b)**	narrow	Konplatina, Zanalsron	3
			medium	Konaribean, Zalsabri	5
			broad	Alsdun01, Tesnoram	7
7. (+)	**7.**	**VG**	**Leaf blade: attitude**		
	QN	**(a), (b)**	semi-erect		3
			horizontal		5
			semi-drooping		7
8. (+)	**8. (*)**	**VG**	**Leaf blade: greyish coloured longitudinal stripes**		
	QL	**(a), (b)**	absent		1
			present		9
9. (+)	**9. (*)**	**VG**	**Leaf blade: variegation**		
	QL	**(a), (b)**	absent		1
G			present	Alsdun01	9
10. (+)	**10. (*)**	**MG/MS /VG**	**Umbel: length of rays**		
	QN	**(a)**	short	Alsdun01, Konaribean	3
			medium	Konplatina, Tesmars	5
			long	Konswitch	7
11.	**11. (*)**	**MG/MS /VG**	**Umbel: number of rays**		
	QN	**(a)**	few	Tesmoonli, Zapriliarange	3
			medium	Konplatina, Zalsabri	5
			many	Alsdun01, Konaribean	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
12. (+)	**12. (*)**	**MG/MS /VG**	**Flower: length of pedicel**		
	QN	**(a), (c)**	short	Alsdun01, Zalsabri	3
			medium	ESM T122, Konplatina	5
			long	Tesmars, Tesnoram	7
13.	**13. (*)**	**VG**	**Flower: main colour**		
	PQ	**(a), (c), (d)**	white	Konantarct, Tesmoonli	1
			yellow green	Kongrenday	2
			light yellow	Gataran, Konwpearls	3
			medium yellow	Konaribean	4
			orange	ESM T122, Staqueen	5
			light pink	Tesnoram	6
			medium pink	Zalsabri	7
			blue pink	Konswitch	8
			orange red	Zalsance, Zapriliarange	9
			red	Alsdun01	10
			purple red	Konalegria, Tesrome	11
			light purple	Tesmars	12
			medium purple	Konplatina	13
G			dark purple	Zalsatista	14
14. (+)	**14.**	**MG/MS /VG**	**Flower: length in frontal view**		
	QN	**(a), (c)**	short	Konwpearls	3
			medium	Alsdun01, Kongrenday	5
			long	Gataran, Zalsatista	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
15. (+)	**15.**	**MG/MS /VG**	**Flower: width in frontal view**		
	QN	**(a), (c)**	narrow	Konwpearls	3
			medium	Tesmoonli, Zalsabri	5
			broad	Gataran, Zalsatista	7
16. (+)	**16.**	**MG/MS /VG**	**Flower: ratio length/width in frontal view**		
	QN	**(a), (c)**	low	Tespale	3
			medium	Gataran, Tesrome	5
			high	Konswitch	7
17. (+)	**17.**	**MG/MS /VG**	**Flower: length in side view**		
	QN	**(a), (c)**	short		3
			medium		5
			long		7
18. (+)	**18. (*)**	**VG**	**Outer tepal: shape of blade**		
	PQ	**(a), (c)**	circular		1
			broad elliptic	Konwpearls	2
			medium elliptic	Zalsance	3
			broad obovate	Alsdun01, Zalsatista	4
			medium obovate	Kongrenday	5
19. (+)	**19.**	**VG**	**Outer tepal: emargination**		
	QN	**(a), (c)**	shallow	Alsdun01, Konplatina	3
			medium	Konswitch, Tesmoonli	5
			deep	Tesrome, Zalsabri	7
20.	**20. (*)**	**VG**	**Outer tepal: main colour of outer side**		
	PQ	**(a), (c), (d)**	RHS Colour Chart (indicate reference number)		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
21. (+)	**21. (*)**	**VG**	**Outer tepal: green area of outer side**		
	QN	**(a), (c)**	absent or very small		1
			small		2
			medium		3
			large		4
			very large		5
22.	**22. (*)**	**VG**	**Outer tepal: main colour of central zone of inner side**		
	PQ	**(a), (c), (d)**	RHS Colour Chart (indicate reference number)		
23.	**23. (*)**	**VG**	**Outer tepal: main colour of top zone of inner side (green area excluded)**		
	PQ	**(a), (c), (d)**	RHS Colour Chart (indicate reference number)		
24.	**24. (*)**	**VG**	**Outer tepal: main colour of lateral zone of inner side**		
	PQ	**(a), (c), (d)**	RHS Colour Chart (indicate reference number)		
25.	**25. (*)**	**VG**	**Outer tepal: main colour of basal zone of inner side**		
	PQ	**(a), (c), (d)**	RHS Colour Chart (indicate reference number)		
26. (+)	**26. (*)**	**VG**	**Outer tepal: small stripes on marginal part of lateral zone of inner side**		
	QN	**(a), (c)**	absent or very few	Alsdun01, Konplatina	1
			few	Kongrenday	3
			medium	Zalsatista	5
			many		7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
27. (+)	**27. (*)**	**VG**	**Outer tepal: large stripes on inner side (marginal zone excluded)**		
	QN	**(a), (c)**	absent or very few	Alsdun01, Konplatina	1
			few	ESM T122	2
			medium		3
			many		4
			very many		5
28. (+)	**28. (*)**	**VG**	**Inner lateral tepal: shape**		
	PQ	**(a), (c)**	medium elliptic	Tespolar, Zalsabri	1
			narrow elliptic	Kongrenday	2
			medium obovate	Zapriliarange	3
			narrow obovate	Konwpearls	4
29.	**29. (*)**	**VG**	**Inner lateral tepal: main colour of central zone**		
	PQ	**(a),(c), (d), (e)**	RHS Colour Chart (indicate reference number)		
30.	**30. (*)**	**VG**	**Inner lateral tepal: main colour of apical zone**		
	PQ	**(a),(c), (d), (e)**	RHS Colour Chart (indicate reference number)		
31.	**31. (*)**	**VG**	**Inner lateral tepal: main colour of basal zone**		
	PQ	**(a),(c), (d), (e)**	RHS Colour Chart (indicate reference number)		
32. (+)	**32. (*)**	**MG/VG**	**Inner lateral tepal: number of stripes**		
	QN	**(a), (c), (e)**	absent or very few	Tesmars	1
			few	Alsdun01	3
			medium	Konplatina, Zalsabri	5
			many	ESM T122, Gataran	7
			very many	Zalsatista	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
33. (+)	**33. (*)**	**VG**	**Inner lateral tepal: area of striped zone**		
	QN	**(a), (c), (e)**	small	Tesmars	3
			medium	Alsdun01, Zalsabri	5
			large	Konplatina	7
34. (+)	**34. (*)**	**MG/MS /VG**	**Inner lateral tepal: length of stripes**		
	QN	**(a), (c), (e)**	very short		1
			short	Alsdun01, Tesmars	3
			medium	Konaribean, Konplatina	5
			long	Tesnoram, Zapriliarange	7
			very long		9
35. (+)	**35. (*)**	**MG/VG**	**Inner lateral tepal: width of stripes**		
	QN	**(a), (c), (e)**	very narrow		1
			narrow	Alsdun01, Konaribean	3
			medium	Konplatina, Tesmoonli	5
			broad	Konantarct, Zalsatista	7
			very broad		9
36.	**36. (*)**	**VG**	**Inner median tepal: main colour**		
	PQ	**(a),(c), (d), (e)**	RHS Colour Chart (indicate reference number)		
37.	**37. (*)**	**VG**	**Inner median tepal: secondary colour**		
	PQ	**(a),(c), (d), (e)**	RHS Colour Chart (indicate reference number)		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
38.	**38. (*)**	**MG/VG**	**Inner median tepal: number of stripes**		
	QN	**(a), (c), (e)**	absent or very few	Alsdun01, Tesmars	1
			few	Tesrome, Zalsabri	3
			medium	ESM T122, Zanalsron	5
			many	Zalsatista	7
39. (+)	**39. (*)**	**VG**	**Anthers: colour**		
	PQ	**(a), (c)**	greenish	Konplatina, Tesmoonli	1
			yellowish	Zalsabri	2
			orange	Alsdun01, Konaribean	3
			purplish	Tespolar, Zalsanebli	4
			blue	Gataran, Konswitch	5
			brownish		6
			medium grey		7
			dark grey		8
40.	**40. (*)**	**VG**	**Filament: main colour**		
	PQ	**(a), (c), (d)**	white	Konantarct, Zalsabri	1
			yellow	ESM T122, Gataran	2
			orange	Konaribean	3
			orange red	Alsdun01, Zalsance	4
			red	Tesronto, Zaprikate	5
			pink	Kongrenday, Tesnoram	6
			red purple	Konalegria, Tesrome	7
			light purple	Konplatina, Tesmoonli	8
			medium purple	Tesmars, Zalsatista	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
41. (+)	**41.**	**VG**	**Filament: number of spots**		
	QN	**(a), (c)**	absent or very few		1
			few		2
			medium		3
			many		4
			very many		5
42. (+)	**42. (*)**	**VG**	**Stigma: spots**		
	QL	**(a), (c)**	absent		1
			present		9
43. (+)	**43. (*)**	**VG**	**Ovary: extent of anthocyanin coloration**		
	QN	**(a), (c)**	absent or very small	Konswitch, Tesmoonli	1
			small	Konplatina, Zalsabri	3
			medium	Alsdun01, Zalsatista	5
			large	Konaribean, Tesmars	7
			very large	Tespale	9

8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

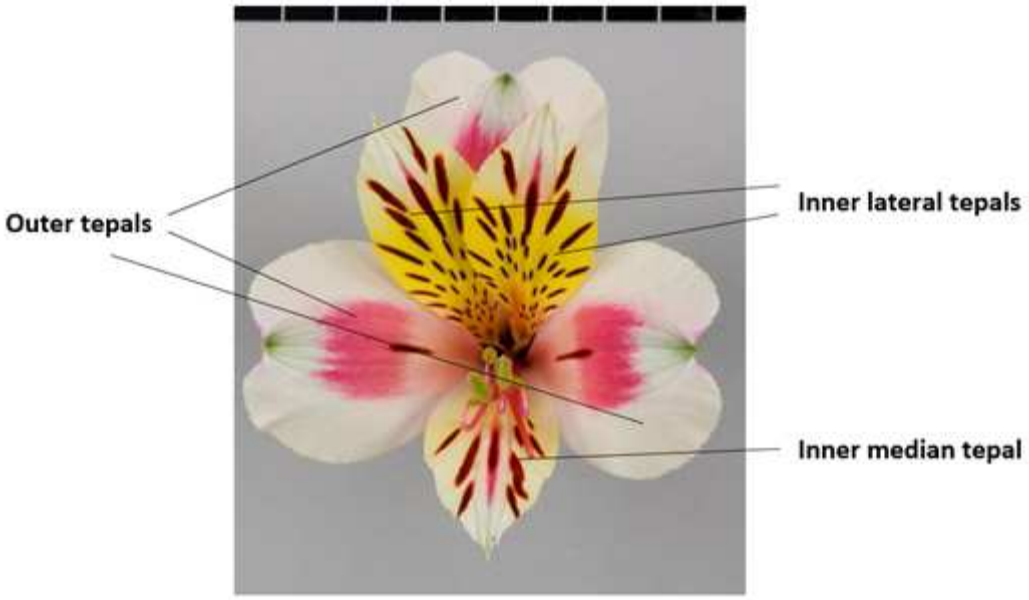
8.1 Explanations covering several characteristics

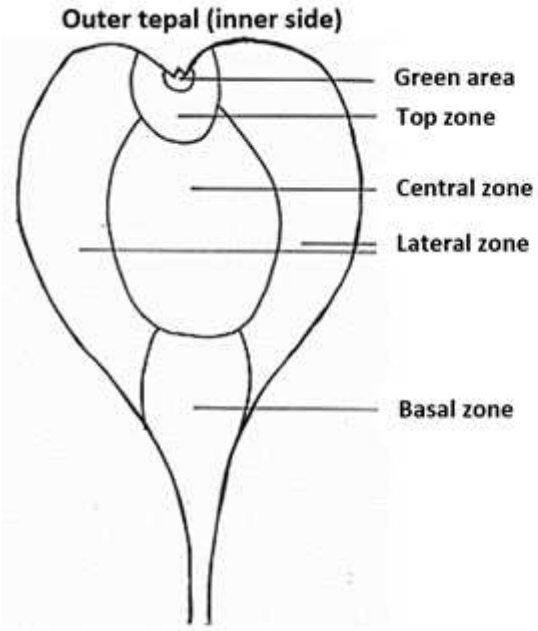
Characteristics containing the following key in the third column of the Table of Characteristics should be examined as indicated below:

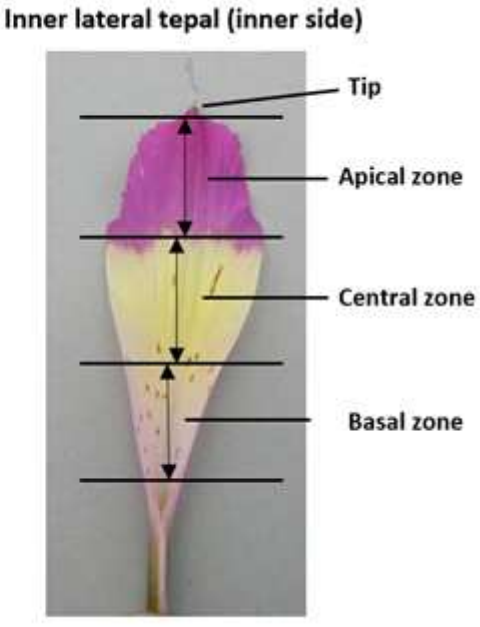
a) Observations should be made on the first fully developed stem when 50% of the flowers are open.

b) Observations should be made on leaves taken from the middle third of the stem.

c) Observations should be made when the first anther of the individual flower is open.







d) The main colour is the colour with the largest surface area. In cases where the areas of the main and secondary colour are too similar to reliably decide which colour has the largest surface area, the darker colour is considered to be the main colour.

e) Observations should be made on the inner side.

8.2 Explanations for individual characteristics

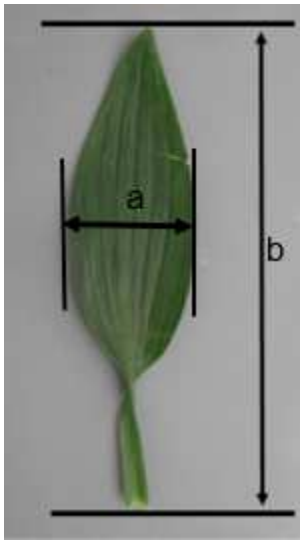
Ad. 1: Plant: height

Plant height should be observed from soil level to the top of the plant, including the flowers.

Ad. 2: Stem: thickness

Thickness should be assessed at the middle third of the stem

Ad. 5: Leaf: length
Ad. 6: Leaf: width



a = Leaf: width
b = Leaf: length

Ad. 7: Leaf blade: attitude

3
semi-erect

5
horizontal

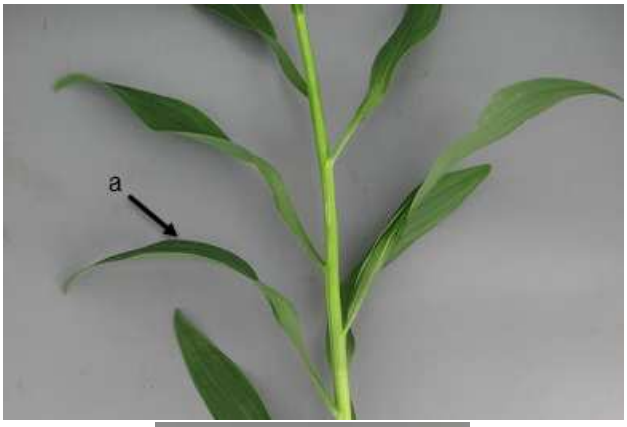
7
semi-drooping

Ad. 8: Leaf blade: greyish coloured longitudinal stripes

1
absent

a = greyish coloured stripe
9
present

Ad. 9: Leaf blade: greyish coloured longitudinal stripes



a = upper side

1
absent

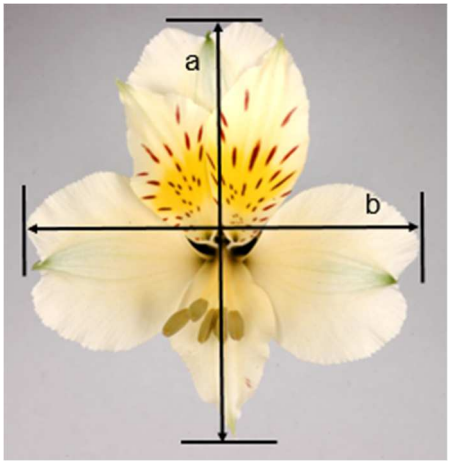
9
present

Ad. 10: Umbel: length of rays

Observations should be made from the point of insertion to the base of the top flower bud.

Ad. 12: Flower: length of pedicels

Ad. 14: Flower: length in frontal view
Ad. 15: Flower: width in frontal view



a = Flower: length in frontal view
b = Flower: width in frontal view

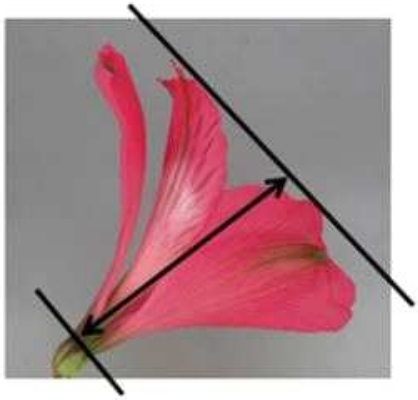
Ad. 16: Flower: ratio length/width in frontal view

3
low

5
medium

7
high

Ad. 17: Flower: length in side view



Ad. 18: Outer tepal: shape of blade

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

Ad. 19: Outer tepal: emargination

3
shallow

5
medium

7
deep

Ad. 21: Outer tepal: green area of outer side

1
absent or very small

2
small

3
medium

4
large

Ad. 26: Outer tepal: small stripes on marginal part of lateral zone of inner side

1
absent or very few

3
few

5
medium

7
many

Ad. 27: Outer tepal: large stripes on inner side (marginal zone excluded)

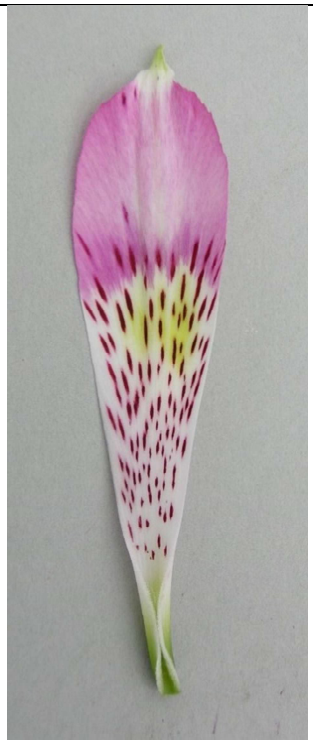
1
absent or very few

2
few

3
medium

4
many

Ad. 28: Inner lateral tepal: shape

Relative width	← broadest part →	
	at middle	above middle
narrow	 2 narrow elliptic	 4 narrow obovate
medium	 1 medium elliptic	 3 medium obovate

Ad. 32: Inner lateral tepal: number of stipes

1
absent of very few

3
few

5
medium

7
many

9
very many

Ad. 33: Inner lateral tepal: area of striped zone

3
small

5
medium

7
large

Ad. 34: Inner lateral tepal: length of stipes

The longest stripes should be observed, excluding the stripe on the central vein.

1 very short | 3 short | 5 medium | 7 long | 9 very long

Ad. 35: Inner lateral tepal: width of stipes

The widest stripes should be observed, excluding the stripe on the central vein.

1 very narrow | 3 narrow | 5 medium | 7 broad | 9 very broad

Ad. 39: Anther: colour

To be observed just before deshiscence.

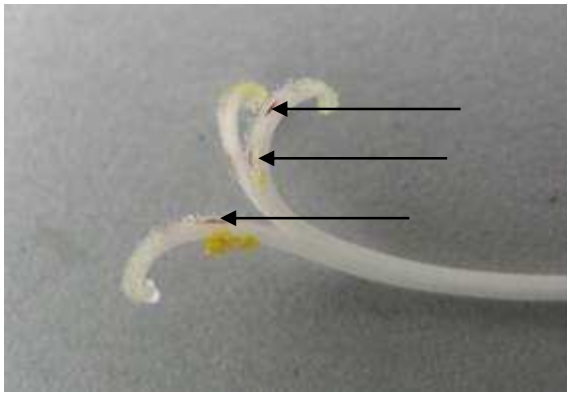
Ad. 41: Filament: number of spots

1
absent or very few

3
medium

5
very many

Ad. 42: Stigma: spots



Ad. 43: Ovary: extension of anthocyanin coloration

1
absent or very small

3
small

5
medium

7
large

9
very large

9. LITERATURE

Grunert, Ch., 1980: Das Blumenzwiebelbuch. Verlag Eugen Ulmer. Stuttgart, DE, x pp.

The Royal General Bulbgrowers' Association, 1991: International Checklist for Hyacinths and Miscellaneous Bulbs. Koninklijke Algemeene Vereeniging voor Bloembollencultuur. Hillegom, NL, pp. 15 to 47

10. TECHNICAL QUESTIONNAIRE

The Technical Questionnaire is available on the CPVO website under the following reference: CPVO-TQ/029/3 - *Alstroemeria* L. - alstroemeria