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TWO/35/15
ORIGINAL: English
DATE: November 5, 2002

UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY FOR ORNAMENTAL PLANTS AND FOREST TREES

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WORKING PAPER ON DRAFT TEST GUIDELINES FOR CATHARANTHUS
(*Catharanthus roseus* (L.) G. Don)

Document prepared by experts from Japan

The attached document TG/CATHAR(proj.1) already incorporates the standard wording of document TGP/7.2, which was adopted by the Technical Committee at its thirty-eighth session in April 2002, and includes some additional standard wording from document TGP/7.1 Draft 1, also agreed at that session.

[Document TG/CATHAR(proj.1) follows]

E

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GENEVA

CATHARANTHUS*

(*Catharanthus roseus* (L.) G. Don)*

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Latin	English	French	German	Spanish
Catharanthus roseus (L.) G. Don	Catharanthus	-	-	-

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated "TGP" documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Catharanthus roseus* (L.) G. Don of the family Apocyraceae.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of seeds or rooted cuttings.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

- seed propagated varieties: *xx* grams of seed (or *xx* seeds);
- vegetatively propagated varieties: 30 rooted cuttings

2.4 In the case of seed, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should be stated by the applicant.

2.5 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.6 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.

3. Method of Examination

3.1 Duration of Tests

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

3.2 Testing Place

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be seen at that place, the variety may be tested at an additional place.

3.3 Conditions for Conducting the Examination

3.3.1 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. In particular, all observations should be made on flowering plants.

3.3.2 The test should be conducted under the following conditions:

Seed sowing

Time:	April/May (in Northern Hemisphere).
Temperature:	Germinating period: 25 °C Seedling period: 12 °C minimum.
Need soil covering.	

Planting of seedling

Time:	May/June: 50-60 days after seed sowing
Soil:	well-drained, fertile, rich in organic material.

3.3.3 Characteristics containing the following notes in the second column of the Table of Characteristics should be examined as indicated below:

[a] All observations on the leaf should be made on the middle part of main stem.

[b] All observations on the flower should be made on the second flower to open.

3.4 Test Design

3.4.1 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.

3.4.2 Each test should be designed to result in a total of, at least 60 plants for seed propagated varieties and 20 plants for vegetatively propagated varieties, which should be divided between 2 replicates.

3.5 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, all observations determined by measuring or counting should be made on 20 plants or parts of plants taken from each of 20 plants for seed propagated varieties and 10 plants or parts taken from each of 10 plants for vegetatively propagated varieties.

3.6 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.

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 Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.2 Uniformity

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 The acceptable number of off-types tolerated in a sample size of 60 plants for seed propagated varieties is 2 and 20 plants for vegetatively propagated varieties is 1 on the basis of a population standard of 1% and an acceptance probability of 95%.

4.3 Stability

4.3.1 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 tested, either by growing a further generation, or by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness is aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

(a) Flower: space between the petals (characteristic 14)

(b) Flower: main color of upper side (characteristic 16) with the following groups:

Gr.1 white

Gr.2 pink

Gr.3 purple

Gr.4 red

Gr.5 other color

(c) Flower: eye zone (characteristic 18).

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

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.

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

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

6.5 Legend

(*) Asterisked characteristic – see Section 6.1.2
(+) See Explanations on the Table of Characteristics in Chapter 8.

(QL) Qualitative characteristic – see Section 6.3
(QN) Quantitative characteristic – see Section 6.3
(PQ) Pseudo-Qualitative characteristic – see Section 6.3

[a] and [b] – see Section 3.3.3

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

	MoE°	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. **(*)** **(+)**		**Plant: shape**					
	(PQ)	oblong				Kermesiana	1
		rhombic				Parasol	2
		obtriangular					3
		flattened				Dawn Carpet	4
2. **(*)**		**Plant: height**					
	(QN)	short				Dawn Carpet	3
		medium				Little Bright Eye	5
		tall				Kermesiana	7
3.		**Stem: anthocianin coloration (on the middle part of stem)**					
	(QN)	absent or very weak					1
		weak					3
		medium				Little Bright Eye	5
		strong				Pink Carpet	7
		very strong				Kermesiana	9
4. **(+)**		**Stem: branching**					
	(QL)	mainly upper half					1
		mainly lower half					2
		whole stem				Little Bright Eye	3

° MoE = Method of Examination

	MoE°	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. **(*)**		**Stem: number of the first branches with flower bud**					
	(QN)	few				Pretty in Pink	3
		medium				Little Bright Eye	5
		many					7
6.		**Stem: number of the secondary branches with flower bud**					
	(QN)	few				Kermesiana	3
		medium				Little Bright Eye	5
		many				Pretty in Pink	7
7.		**Stem: number of nodes in 10cm below first flower**					
	(QN)	Few				Kermesiana	3
		medium				Little Bright Eye	5
		many				Dawn Carpet	7
8. **(*)**		**Leaf: length**					
	a	short					3
	(QN)	medium				Little Bright Eye	5
		long				Kermesiana	7
9. **(*)**		**Leaf: width**					
	a	narrow					3
	(QN)	medium				Little Bright Eye	5
		broad				Parasol	7

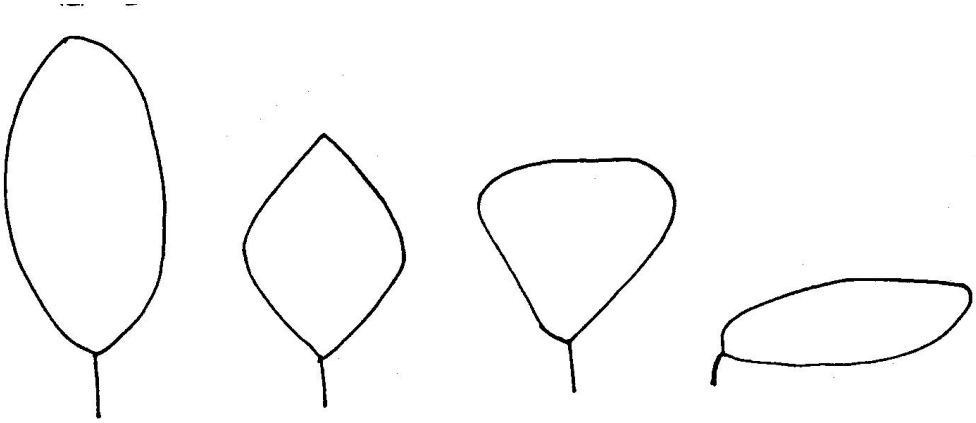
	MoE°	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10. **(*)**		**Leaf: shape**					
	a	linear					1
	(PQ)	oblong				Little Bright Eye	2
		elliptic				Peppermint Cooler	3
		ovate					4
11. **(*)**		**Leaf: green color of upper side**					
	a	light					3
	(QN)	medium				Little Bright Eye	5
		dark					7
12.		**Petiole: length**					
	(QN)	short				Pretty in Pink	3
		medium				Little Bright Eye	5
		long					7
13. **(*)** **(+)**		**Flower: diameter**					
	b	small					3
	(QN)	medium				Little Bright Eye	5
		large				Parasol	7
14. **(*)** **(+)**		**Flower: space between the petals**					
	b	absent				Peppermint Cooler	1
	(QL)	presence				Kermesiana	9

	MoE°	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15. **(*)**		**Flower: number of colors (eye zone excluded)**					
	b	one					1
	(QL)	two					2
		more than two					3
16. **(*)**		**Flower: main color of upper side**					
	b	RHS Colour Chart					
	(QL)	(indicate reference number)					
17. **(*)**		**<u>Varieties with more than one color only</u>: Flower: secondary color of upper side**					
	b	RHS Colour Chart					
	(QL)	(indicate reference number)					
18. **(*)** **(+)**		**Flower: eye zone**					
	b	absent				Papion Silver Blue	1
	(QL)	present				Peppermint Cooler	9
19. **(*)** **(+)**		**<u>Varieties with eye zone present only</u>: Flower: type of eye zone**					
	b	type I					1
	(QL)	type II					2
		type III					3

	MoE°	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20. **(*)**		**<u>Varieties with eye zone present only</u>: Flower: main color of eye zone**					
	b	RHS Colour Chart					
	(QL)	(indicate reference number)					
21. **(*)** **(+)**		**Petal: shape of tip**					
	b	acuminate					1
	(PQ)	acute					2
		mucronate				Little Bright Eye	3
		obtuse					4

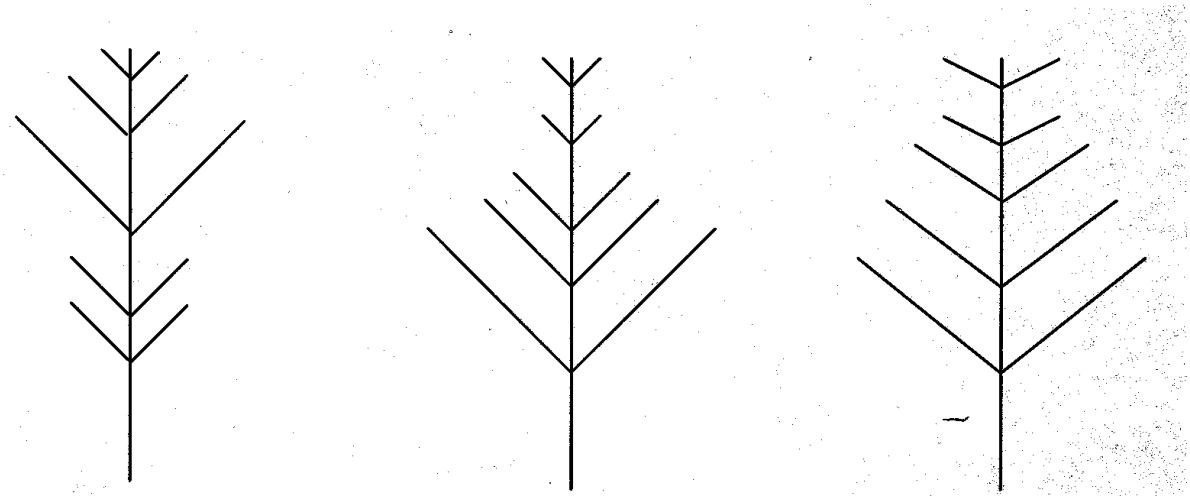
8. Explanations on the Table of Characteristics

Ad. 1: Plant: shape



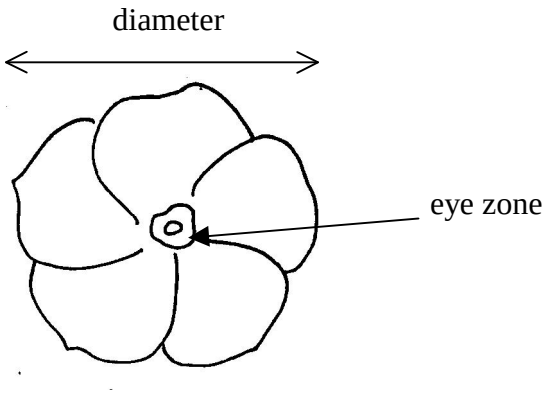
1	2	3	4
oblong	rhombic	obtriangular	flattened

Ad. 4: Stem: Branching

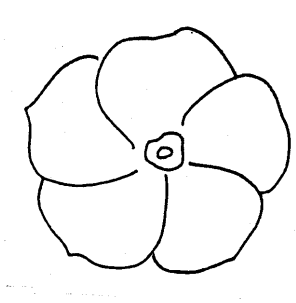


1	2	3
mainly upper half	mainly lower half	whole stem

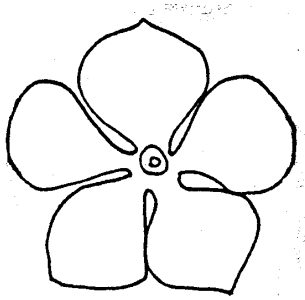
Ad. 13: Flower: diameter
Ad. 18: Flower: eye zone



Ad. 14: Flower: space between the petals

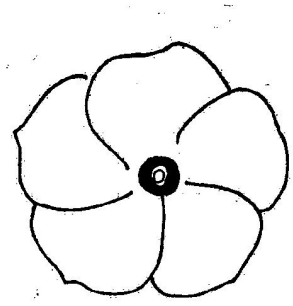


1
absent

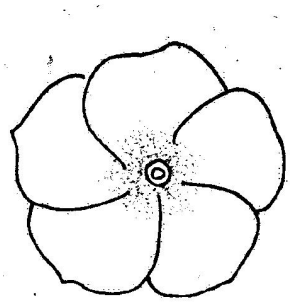


9
present

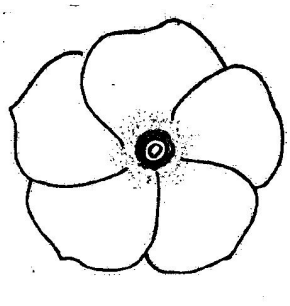
Ad. 19: Flower: type of eye zone



1
mainly upper half



2
mainly lower half



3
whole stem

Ad. 21: Petal: shape of tip

1	2	3	4
acuminate	acute	mucronate	obtuse

9. Literature

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

	Application date: (not to be filled in by the applicant)

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1 Genus

1.1.1 *Latin Name*	*Catharanthus roseus* (L.) G. Don
1.1.2 Common Name	Catharanthus

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

3. Proposed denomination and breeder's reference

Proposed denomination (if available) [ ]

Breeder's reference [ ]

4. Information on the breeding scheme and propagation of the variety

4.1 Breeding Scheme

4.1.1 Variety resulting from:

(a) controlled cross [ ]
(please state parent varieties)
(b) partially unknown cross [ ]
(please state known parent variety(ies))
(c) totally unknown cross [ ]

4.1.2 Mutation [ ]
(please state parent variety)

4.1.3 Discovery [ ]
(please state where, when and how developed)

4.1.4 Other [ ]
(please provide details)

4.2 Method of Propagating the Variety

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

	Characteristics	Example Varieties	Note
5.1 (1)	**Plant: shape**		
	oblong	Kermesiana	1[ ]
	rhombic	Parasol	2[ ]
	obtriangular		3[ ]
	flattened	Dawn Carpet	4[…]
5.2 (2)	**Plant: height**		
	short	Dawn Carpet	3[ ]
	medium	Little Bright Eye	5[ ]
	tall	Kermesiana	7[ ]
5.3 (13)	**Flower: diameter**		
	small		3[ ]
	medium	Little Bright Eye	5[ ]
	large	Parasol	7[ ]
5.4 (15)	**Flower: number of colors (eye zone excluded)**		
	one		1[ ]
	two		2[ ]
	more than two		3[ ]
5.5 (16)	**Flower: main color of upper side**		
	RHS Colour Chart (indicate reference number)	……	
5.6 (17)	**<u>Varieties with more than one color only</u>: Flower: secondary color of upper side**		
	RHS Colour Chart (indicate reference number)	……	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

5.7 (18) Flower: eye zone

absent	Papion Silver Blue	1[ ]
present	Peppermint Cooler	9[ ]

5.8 (19) <u>Varieties with eye zone present only</u>: Flower: type of eye zone

Type I

Type II

Type III

5.9 (20) <u>Varieties with eye zone present only</u>: Flower: main color of eye zone

RHS Colour Chart (indicate reference number)

5.10 (21) Petal: shape of tip

acuminate		1[ ]
acute		2[ ]
mucronate	Little Bright Eye	3[ ]
obtuse		4[ ]

6. Similar varieties and differences from these varieties

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
(Example)	*Plant: height*	*e.g. note 3*	*note 7*
		e.g. short	*tall*
		e.g. 90 cm	*130 cm*

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [ ] No [ ]

(If yes, please provide details)

7.2 Special conditions for the examination of the variety

7.2.1 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

7.2.2 If yes, please give details:

7.3 Other information

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

If the answer to (b) is yes, please attach a copy of the authorization.

9. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name

Signature Date

[End of document]