

UPOV

TG/ANGLN(proj.2)

ORIGINAL: English

DATE: 2006-07-31

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

Angelonia angustifolia Benth.
and its hybrids

UPOV Code: ANGLN_ANG
and linked hybrid codes

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Australia

*to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees at its
thirty-ninth session, to be held in Fortaleza, Ceará State, Brazil, from
August 28 to September 1, 2006*

Alternative Names: *

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Angelonia angustifolia</i> Benth.				

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with 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 Test Guidelines

These Test Guidelines apply to all varieties of *Angelonia angustifolia* Benth. and their hybrids of the family *Scrophulariaceae*.

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 rooted cuttings or seed.

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

seed-propagated varieties: sufficient seed to produce 30 plants
vegetatively propagated varieties: 20 rooted cuttings

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

2.5 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 *Number of Growing Cycles*

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".

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.

3.3.2 Observation of color by eye

Because daylight varies, color determinations made against a color 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.

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 16 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 *Number of Plants / Parts of Plants to be Examined*

Unless otherwise indicated, 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.

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 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 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 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 16 plants, 1 off-type is allowed.

4.2.3 The assessment of uniformity for seed-propagated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

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 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 are aided by the use of grouping characteristics.

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

5.3 The following have been agreed as useful grouping characteristics:

- (a) Corolla lobes: presence of stripes (characteristic 11)
- (b) Only varieties with stripes absent: Upper lip: main color on corolla lobes (characteristic 12) with the following groups:
 - Gr. 1: white
 - Gr. 2: pink
 - Gr. 3: purple
- (c) Only varieties with stripes absent: Lower lip: main color on corolla lobes (characteristic 13) with the following groups:
 - Gr. 1: white
 - Gr. 2: pink
 - Gr. 3: purple

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 Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3

QN: Quantitative characteristic – see Chapter 6.3

PQ: Pseudo-qualitative characteristic – see Chapter 6.3

(a)-(d) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8.2

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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	Plant: growth habit					
(*)						
QN	(a)	upright			Balangdepi, Balangimla	1
		semi-upright			Balangloud, Balangimpu	2
		spreading			Balangbeke, Balangbawi	3
2.	Shoot: length					
QN	(a)	short				3
		medium			Balangpili	5
		long				7
3.	Shoot: anthocyanin coloration below the inflorescence					
QN	(a)	absent or very weak			Balangloud, Balangbeke	1
		weak			Balangimpu, Balangimla	3
		medium			Balangdepi	5
		strong				7
4.	Leaf: length					
(*)						
QN	(b)	short			Balanglapi	3
		medium			Balangimla	5
		long			Balangimpu	7
5.	Leaf: width					
QN	(b)	narrow			Balangbeke	3
		medium			Balangdepi, Balangimla	5
		broad			Balangimpu	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	Leaf: intensity of green color on upper side					
QN (b)	light					3
	medium					5
	dark				Balangbeke	7
7.	Leaf: glossiness on upper side					
QN (b)	absent or very weak				Balangloud	1
	weak				Balangpili	3
	medium				Balanglapi	5
	strong				Balangbeke	7
8. (* (+)	Flower: length					
QN (c)	short					3
	medium				Balangimla	5
	long					7
9. (* (+)	Flower: width					
QN (c)	narrow					3
	medium				Balangimla	5
	broad					7
10. (+)	Flower: ratio length/width					
QN (c)	small					3
	medium				Balangbeke	5
	large				Balangimla	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. (*)	Corolla lobes: presence of stripes					
QL	(c) absent					1
	(d) present				Angelmist PurpleStripe	9
12. (*)	<u>Only varieties with stripes absent:</u> <u>Upper lip: main color on corolla lobes</u>					
PQ	(c) RHS Colour Chart					
	(d) (indicate reference number)					
13. (*)	<u>Only varieties with stripes absent:</u> <u>Lower lip: main color on corolla lobes</u>					
PQ	(c) RHS Colour Chart					
	(d) (indicate reference number)					
14. (*)	<u>Only varieties with stripes present:</u> <u>Corolla lobes: ground color</u>					
PQ	(c) RHS Colour Chart					
	(d) (indicate reference number)					
15. (*)	<u>Only varieties with stripes present:</u> <u>Corolla lobes: color of stripes</u>					
PQ	(c) RHS Colour Chart					
	(d) (indicate reference number)					

16.	<u>Only varieties with stripes present:</u>		
(*)	Lower lip: width of stripes		
QN	(c)	narrow	3
	(d)		
		medium	Anstern 5
		broad	Angelmist 7 PurpleStripe
17.	Upper lip: arrangement of lobes		
QN	(c)	free	Balanglast 1
	(d)		
		intermediate	2
		overlapping	Angelmist 3 PurpleStripe
18.	Lower lip: undulation of margin		
(*)			
QN	(c)	absent or very weak	1
	(d)		
		weak	Balangimpu 3
		medium	Balangimla 5
		strong	Balangbeke 7
19.	Chamber: length		
(+)			
(*)			
QN	(c)	short	3
	(d)		
		medium	Balangimla 5
		long	7

20. (+) (*)	Chamber: width		
QN	(c) (d)	narrow	3
		medium	Balangimla 5
		broad	7
21. (+)	Chamber: length in relation to width		
QN	(c) (d)	longer than broad	1
		as long as broad	2
		broader than long	3
22. (*)	Chamber: intensity of markings		
QN	(c) (d)	absent or very weak	Balangbawi 1
		weak	3
		medium	5
		strong	Balangimpu 7
23. (*)	Chamber: density of markings		
QN	(c) (d)	sparse	Balangimla 1
		medium	2
		dense	Balangimpu 3
24. (*)	Chamber: color of markings		
PQ	(c) (d)	green	1
		pink	2
		purple	3

25.	Pouch: main color		
(*)			
PQ	(c) white		1
	(d)		
	yellow green		2
	pink		3
	purple		4

26.	Pouch: number of spots		
QN	(c) absent or very few	Balangbeke	1
	(d)		
	few		3
	medium		5
	many	Balangdepi	7

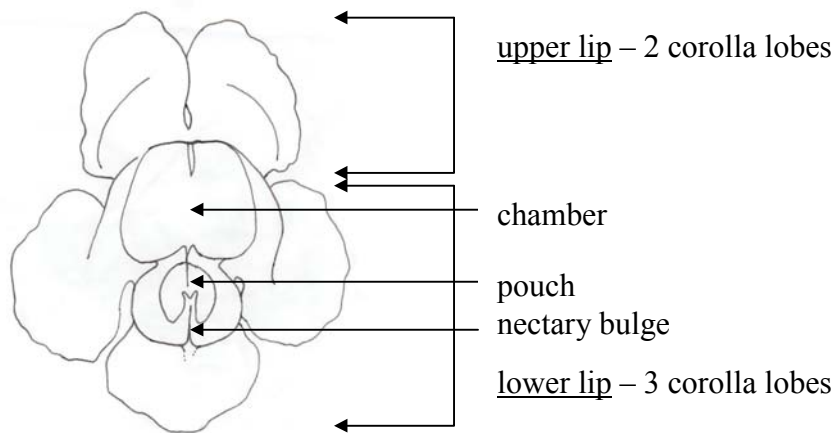
27.	Nectary bulge: main color		
(*)			
PQ	(c) white	Balangloud, Balangimpu	1
	(d)		
	green white		2
	yellow		3
	pink	Balanglapi	4
	purple	Balangdepi	5

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

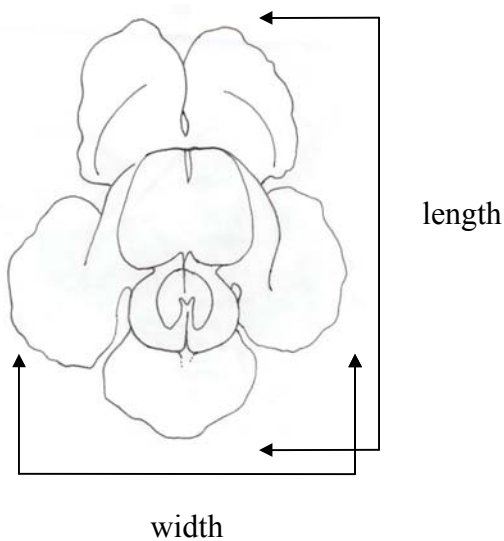
Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

- (a) Observations on the plant and shoot should be made on fully flowering plants.
- (b) Observations on the leaf should be made on leaves taken from the middle part of the shoot.
- (c) Observations on the flower and flower parts should be made just prior to anthesis.
- (d) Flower parts:

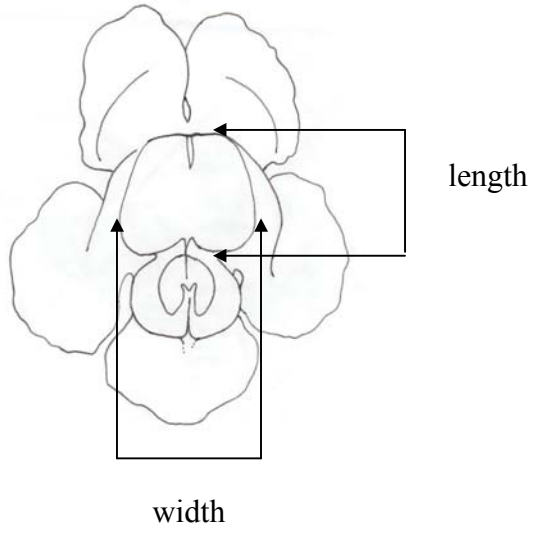


8.2 Explanations for individual characteristics

- Ad. 8 Flower: length
- Ad. 9 Flower: width
- Ad. 10 Flower: ratio length/width



- Ad. 19 Chamber: length
- Ad. 20 Chamber: width
- Ad. 21 Chamber: length in relation to width



9. Literature

Liberty Hyde Bailey Hortorium, 1976: Hortus Third, Macmillan Publishing Company

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 Botanical name	<input type="text" value="Angelonia angustifolia Benth."/>	[]
Hybrid: please indicate the name(s) of species used in the crossing		
1.2.1 Botanical name(s)	<input type="text"/>	[]
1.2.2 Common name	<input type="text"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
Telephone No.	<input type="text"/>	
Fax No.	<input type="text"/>	
E-mail address	<input type="text"/>	
Breeder (if different from applicant)	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>3. Proposed denomination and breeder's reference</p> <p>Proposed denomination (if available) <input type="text"/></p> <p>Breeder's reference <input type="text"/></p>		
<p>#4. Information on the breeding scheme and propagation of the variety</p> <p>4.1 Breeding scheme</p> <p>Variety resulting from:</p> <p>4.1.1 Crossing</p> <p>(a) controlled cross <input type="checkbox"/> (please state parent varieties)</p> <p>(b) partially known cross <input type="checkbox"/> (please state known parent variety(ies))</p> <p>(c) unknown cross <input type="checkbox"/></p> <p>4.1.2 Mutation <input type="checkbox"/> (please state parent variety)</p> <p>4.1.3 Discovery and development <input type="checkbox"/> (please state where and when discovered and how developed)</p> <p>4.1.4 Other <input type="checkbox"/> (please provide details)</p> <div style="border: 1px solid black; height: 42px; width: 438px;"></div>		

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>4.2 Method of propagating the variety</p> <p style="margin-left: 40px;">4.2.1 Vegetative propagation</p> <p style="margin-left: 80px;">(a) cuttings []</p> <p style="margin-left: 80px;">(b) <i>in vitro</i> propagation []</p> <p style="margin-left: 80px;">(c) other (state method) []</p> <p style="margin-left: 40px;">4.2.2 Seed []</p> <p style="margin-left: 40px;">4.2.3 Other [] (please provide details)</p> <div style="border: 1px solid black; width: 400px; height: 40px; margin-left: 80px; margin-top: 10px;"></div>		
<p>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).</p>		
Characteristics	Example Varieties Note	
<p>5.5 Corolla lobes: presence of stripes (11)</p> <p style="margin-left: 20px;">absent 1 []</p> <p style="margin-left: 20px;">present 9 []</p>	<p style="margin-left: 40px;">Angelmist PurpleStripe</p>	
<p>5.6 <u>Only varieties with stripes absent:</u> Upper lip: main color on corolla lobes (12)</p> <p style="margin-left: 20px;">white 1 []</p> <p style="margin-left: 20px;">pink 2 []</p> <p style="margin-left: 20px;">purple 3 []</p>		
<p>5.7 <u>Only varieties with stripes absent:</u> Lower lip: main color on corolla lobes (13)</p> <p style="margin-left: 20px;">white 1 []</p> <p style="margin-left: 20px;">pink 2 []</p> <p style="margin-left: 20px;">purple 3 []</p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
<p>6. Similar varieties and differences from these varieties</p> <p><i>Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.</i></p>			
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
<i>Example</i>	<i>Plant: growth habit</i>	<i>upright</i>	<i>semi-upright</i>
<p>Comments:</p>			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>#7. Additional information which may help in the examination of the variety</p> <p>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?</p> <p>Yes [] No []</p> <p>(If yes, please provide details)</p> <p>7.2 Are there any special conditions for growing the variety or conducting the examination?</p> <p>Yes [] No []</p> <p>(If yes, please provide details)</p> <p>7.3 Other information</p> <p>A representative color photograph of the variety should accompany the Technical Questionnaire.</p>		
<p>8. Authorization for release</p> <p>(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?</p> <p>Yes [] No []</p> <p>(b) Has such authorization been obtained?</p> <p>Yes [] No []</p> <p>If the answer to (b) is yes, please attach a copy of the authorization.</p>		

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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9. Information on plant material to be examined or submitted for examination.

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 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 the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

- | | | |
|---|---------|--------|
| (a) Microorganisms (e.g. virus, bacteria, phytoplasma) | Yes [] | No [] |
| (b) Chemical treatment (e.g. growth retardant, pesticide) | Yes [] | No [] |
| (c) Tissue culture | Yes [] | No [] |
| (d) Other factors | Yes [] | No [] |

Please provide details for where you have indicated "yes".

.....

10. 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]