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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

WAXFLOWER

UPOV Code: CHMLC_

(*Chamelaucium* Desf.)

[*]

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-seventh session,
to be held in Hanover, Germany, from July 12 to 16, 2004

Alternative Names:[*]

Latin	*English*	*French*	*German*	*Spanish*
Chamelaucium	Waxflower	Chamelaucium	Chamelaucium	Chamelaucium

ASSOCIATED DOCUMENTS

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 guidelines ("Test 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 Test Guidelines

These Test Guidelines apply to all varieties of *Chamelaucium* Desf. and its hybrids with *Verticordia plumosa* Desf. (Druce).

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 young plants.

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

15 young plants

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

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.

3.3.1 Type of observation – visual or measurement

The recommended method of observing the characteristic is indicated by the following key in the second column of the Table 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

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 10 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 should be made on 10 plants or parts taken from each of 10 plants.

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, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 10 plants, 1 off-type is allowed.

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 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: type (characteristic 7)
(b) Flower: diameter (characteristic 8)

(c) Flower: main colour of petals on first day of opening (characteristic 14)

Gr. 1: white
Gr. 2: pink
Gr. 3: purple

(d) Flower: main colour of petals 10-14 days after opening (characteristic 15)

Gr. 1: white
Gr. 2: pink
Gr. 3: purple

(e) Flower: main colour of petals 4 weeks after opening (characteristic 16)

Gr. 1: white
Gr. 2: pink
Gr. 3: purple

(f) Sepal: incision of margin (characteristic 25)

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

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

(a) – (c) See Explanations on the Table of Characteristics in Chapter 8, Section 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8, Section 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.	**[VS] (a)**	**Leaf: attitude in relation to stem**					
QN		erect					1
		semi erect					3
		horizontal					5
2.	**[VS, MS]**	**Leaf: length**					
QN	**(a)**	short				Pastel Gem	3
		medium				Pristine	5
		long				Alba, Purple Pride	7
3.	**[VS] (a)**	**Leaf: shape in cross section**					
PQ		flattened					1
		triangular					2
		rounded					3
4.	**[VS, MS]**	**Flowering branch: angle of axillary shoot (5th node from distal end)**					
QN		small				Jasper	3
		medium				Eric John	5
		large				Painted Lady	7
5.	**[VS]**	**Flowering branch: predominant location of flowers**					
QL		axillary only					1
		both axillary and terminal					2
		terminal only					3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6.	**[VS] (b)**	**Flower bud: colour of apex**					
PQ		white					1
		pink					2
		purple					3
7. (*)	**[VS] (c)**	**Flower: type**					
QL		single					1
		double				Champagne Pink, Dancing Queen	2
8. (*)	**[VS, MS] (c)**	**Flower: diameter**					
QN		small				Lady Jennifer	3
		medium				Mullering Brook, White Spring	5
		large				Niribi, Purple Pride	7
9.	**[VS] (c)**	**Flower: arrangement of petals**					
PQ		free					1
		touching					2
		overlapping					3
10.	**[VS]**	**Flower: attitude of petals on first day of opening**					
QN		erect					1
		semi erect					3
		horizontal					5

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
11.	**[VS]**	**Flower: attitude of petals 4 weeks after opening**					
QN		erect					1
		semi erect					3
		horizontal					5
13.	**[VS, MS] (c)**	**Flower: length of sepal in relation to length of petal**					
QN		less than one third					1
		one third to two thirds					3
		greater than two thirds					5
14. (*)	**[MS]**	**Flower: main color of petals on first day of opening**					
PQ		RHS Colour Chart (indicate reference number)					
15. (*)	**[MS]**	**Flower: main color of petals 10-14 days after opening**					
PQ		RHS Colour Chart (indicate reference number)					
16. (*)	**[MS]**	**Flower: main color of petals 4 weeks after opening**					
PQ		RHS Colour Chart (indicate reference number)					

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
17.	**[VS] (d)**	**Flower: color of hypanthium on first day of opening**					
PQ		yellow green					1
		light green					2
		medium green					3
		dark green					4
		red brown					5
		pink red					6
18.	**[VS] (d)**	**Flower: color of hypanthium 4 weeks after opening**					
PQ		yellow green					1
		light green					2
		medium green					3
		dark green					4
		red brown					5
19.	**[VS, MS]**	**Pedicel: length**					
QN	**(c)**	short					3
		medium					5
		long					7
20.	**[VS] (c) (d)**	**Calyx tube: conspicuousness of longitudinal furrowing**					
QN		absent to very weak					1
		weak					3
		medium				Dancing Queen, Jurien Brook	5
		strong				Champagne Pink, Mullering Brook	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
21.	**[VS] (c) (d)**	**Calyx tube: shape**					
PQ		cylindrical					1
		obconical					2
22.	**[VS, MS] (c) (d)**	**Calyx tube: diameter at widest part**					
QN		small					3
		medium				Purple Pride	5
		large				Niribi	7
23.	**[VS] (c) (d)**	**Calyx tube: predominant color at middle part**					
PQ		yellow					1
		green					2
		brown					3
24.	**[VS] (c)**	**Calyx lobe: main color**					
PQ		green					1
		red					2
		brown					3
25. (*)	**[VS] (c)**	**Sepal: incision of margin**					
QL		absent				Denmark Pearl	1
		present				Eric John, Jasper	9
26.	**[VS, MS] (c)**	**Petal : ratio length/width**					
QN		broader than long					1
		as long as broad					2
		longer than broad					3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
27.	**[VS] (c)**	**Petal : undulation of margin**					
QN		absent or very weak				Elegance	1
		weak					3
		medium				Mullering Brook	5
		strong					7
28.	**[VS] (d)**	**Stamen collar: color at first opening of flower**					
PQ		white					1
		pink					2
		red					3
		purple					4
29.	**[VS] (d)**	**Stamen collar: color 10-14 days after opening of flower**					
PQ		white					1
		pink					2
		red					3
		purple					4
30.	**[VS] (c)**	**Style: color**					
PQ		white					1
		pink					2
		red					3
		purple					4

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
31. [VG]	**Time of beginning of flowering**					
QN	very early				Blondie	1
	early				Albany Pearl	3
	medium				Denmark Pearl, Madonna	5
	late					7

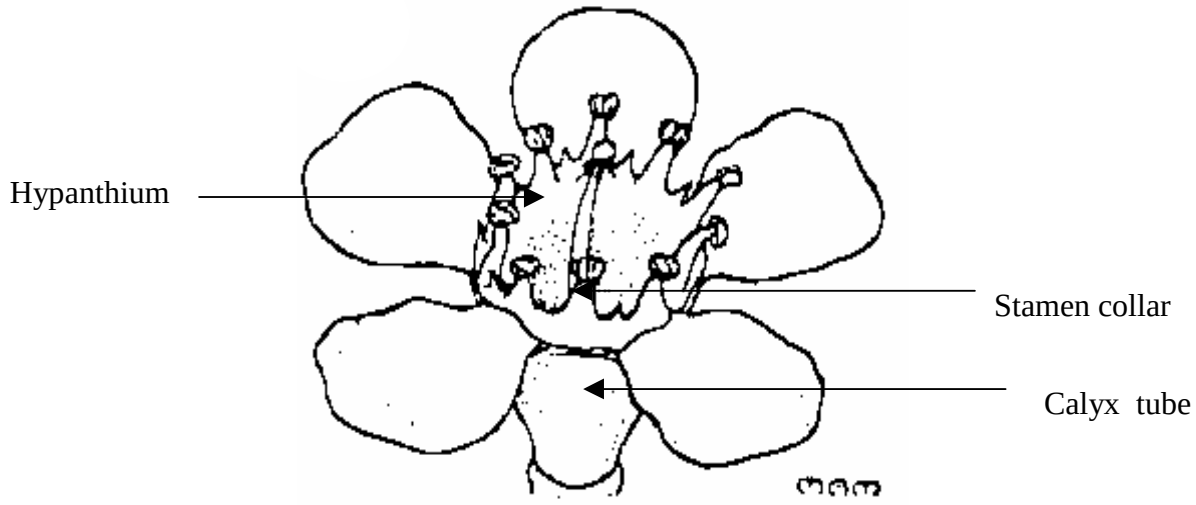
8. Explanations on the Table of Characteristics

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) All observations on leaves should be made on fully developed, non-axillary leaves
(b) Observations on the flower bud should be made when it is fully expanded, just prior to reflexing of petals
(c) Observations on the flower and flower parts should be made 10-14 days after the flower has first opened.
(d) Illustration of relevant parts of the flower

Diagram modified from illustration by Margaret Menadue (Marchant *et al*, 1987)



9. Literature

Blackall, W.E. and Grieve, G.J. How to Know Western Australian Wildflowers Part IIIA.

Elliot, W.R. and Jones, D.L. (1989) Encyclopedia of Australian Plants Suitable for Cultivation Volume 3, Lothian Books.

Marchant, N.G., Wheeler, J.R., Rye, B.L., Bennett, E.M., Lander, N.S. and Macfarlane, T.D. (1987) Flora of the Perth Region Part One, Western Australian Herbarium, Department of Agriculture Western Australia.

Wrigley, J.W. and Fagg, M. (1988) Australian Native Plants Third Edition, Collins Publishers.

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 Latin Name	*Chamelaucium* Desf
1.2 Common Name	Waxflower

2. Applicant

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

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

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

[#]4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

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

4.1.2 Mutation [ ]
(please state parent variety)

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

4.1.4 Other [ ]
(please provide details)]

4.2 Method of propagating the variety

(a) cuttings [ ]
(b) divisions [ ]
(c) in vitro propagation [ ]
(d) other [ ]
(please provide details)

…….

[#] 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:

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(7)	**Flower: type**		
	single		1[ ]
	double	Champagne Pink, Dancing Queen	2[ ]
5.2(8)	**Flower: diameter**		
	small	Lady Jennifer	3[ ]
	medium	Mullering Brook, White Spring	5[ ]
	large	Niribi, Purple Pride	7[ ]
5.3(14)	**Flower: main color of petals on first day of opening**		
	white		1[ ]
	pink		2[ ]
	purple		3[ ]
5.4(15)	**Flower: main color of petals 10-14 days after opening**		
	white		1[ ]
	pink		2[ ]
	purple		3[ ]
5.5(16)	**Flower: main color of petals 4 weeks after opening**		
	white		1[ ]
	pink		2[ ]
	purple		3[ ]
5.6(25)	**Sepal: incision of margin**		
	absent	Denmark Pearl	1[ ]
	present	Eric John, Jasper	9[ ]

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

6. Similar varieties and differences from these varieties

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..

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	*Flower type*	*single*	*double*

Comments:

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

A representative color photograph of the variety should accompany the Technical Questionnaire.

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.

[#] 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:

9. Information on plant material to be examined.

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 or pesticide) Yes [ ] No [ ]

(c) Tissue culture Yes [ ] No [ ]

(d) Other factors Yes [ ] No [ ]

Please provide details of 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]