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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 WAXFLOWER

(*Chamelaucium* Desf.)

Document prepared by experts from Australia

The attached document TG/WAXFL(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/WAXFL(proj.1) follows]

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

WAXFLOWER*

(*Chamelaucium* Desf.)*

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Latin	English	French	German	Spanish
Chamelaucium Desf.	Waxflower	Chamelaucium	Chamelaucium	Chamelaucium

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 *Chamelaucium* Desf. of the family Myrtaceae and their hybrids.

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:

Vegetatively propagated varieties: 10 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. It should preferably not be obtained from *in vitro* propagation. If it has been produced by *in vitro* propagation this must be declared.

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, the observations should be made on 18 to 24 month-old plants.

3.3.2 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 fully developed leaf should be made on mature, non-axillary leaves. The color should be observed on the upper side.

[b] Unless otherwise indicated, all observations on the flower and parts of the flower should be made 10 to 14 days after the flower first opens.

[c] The petal color should be recorded after removing petals from the flower.

3.3.3 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 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 For vegetatively propagated varieties each test should be designed to result in a total of, at least 10 plants.

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 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 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 10 plants 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.

4.3.3 The stability of a hybrid variety may, in addition to an examination of the hybrid variety itself, also be assessed by examination of the uniformity and stability of its parent lines.

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: diameter (characteristic 16)

(b) Flower (10-14 days after opening): main color of petal (characteristic 18) with the following groups:

Gr. 1: white

Gr. 2: yellow

Gr. 3: pink

Gr. 4: red

Gr. 5: purple

(c) Time of beginning of flowering (characteristic 30)

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-c Method of Examination - see section 3.3.2

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.		**Leaf: attitude**		
	a	erect		1
[4.]		semi-erect		2
		horizontal		3
2.		**Leaf: length**		
[1.]	**a**	short		3
		medium		5
		long		7
3.		**Leaf: thickness**		
[2.]	**a**	thin		3
		medium	Lady Stephanie	5
		thick	Pristine, Tickled Pink	7
4.		**Leaf: hook at apex**		
[3.]	**a**	absent		1
		present	Niribi	9
5.		**Pot varieties excluded: Flowering branch: thickness (60 cm from apex)**		
	b	thin		3
		medium	Purple Pride	5
		thick	Niribi	7
6.		**Flowering branch: angle of lateral**		
	b	small	Jasper	3
		medium	Eric John	5
		large		7

° MoE = Method of Examination

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7.		**Flowering branch: predominant location of flowers**					
	b	distal					1
		along flowering branch					2
8. **(*)**		**Inflorescence: number of flowers**					
	b	few					3
		medium				Mullering Brook	5
		many				Pearl Buttons, Purple Pride	7
9.		**Flower bud: shape (before cap dehiscence)**					
[11.]	**b**	spheroid					1
		ovoid					2
		pyriform					3
10.		**Flower bud: horns**					
[12.]	**b**	none				Blondie	1
		one				Madonna	2
		two				Albany Pearl	3
11.		**Flower bud cap: texture**					
[13.]	**b**	shiny					1
		papery					2

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.		**<u>Varieties with shiny flower bud cap only</u>: Flower bud cap: main color (before cap dehiscence)**					
[14.]		green					1
		pink					2
		orange					3
		brown					4
		red					5
		purple					6
13.		**<u>Varieties with papery flower bud cap only</u>: Flower bud cap: main color (before cap dehiscence)**					
[15.]		light brown					1
		red					2
14.		**Flower bud: apical color (after cap dehiscence)**					
[16.]		white					1
		cream					2
		yellow					3
		pink					4
		red					5
		purple					6
15. (*)		**Flower: type**					
[9.]	**b**	single					1
		double				Double Devil	2

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. **(*)**		**Flower: diameter**					
[10.]	**b**	small				Lady Jennifer	3
		medium				Mullering Brook, White Spring	5
		large				Niribi, Purple Pride	7
17. **(*)**		**Flower (on first day of opening): main color of petal**					
[24.]	**c**	RHS Colour Chart (indicate reference number)					
18. **(*)**		**Flower (10-14 days after opening): main color of petal**					
[25.]	**c**	RHS Colour Chart (indicate reference number)					
19. **(*)**		**Flower (4 weeks after opening): main color of petal**					
[26.]	**c**	RHS Colour Chart (indicate reference number)					
20.		**Flower (on first day of opening): color of waxy center**					
[17.]		yellow green					1
		light green					2
		medium green					3
		dark green					4
		red brown					5

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
21.		**Flower (4 weeks after opening): color of waxy center**					
[18.]		yellow green					1
		light green					2
		medium green					3
		dark green					4
		red brown					5
22.		**Calyx tube: longitudinal furrowing**					
[19.]	**b**	absent				Niribi, Purple Pride	1
		present				Mullering Brook	9
23.		**Calyx tube: shape**					
[20.]	**b**	obconical				Purple Pride	1
		flared				Niribi	2
24.		**Calyx tube: diameter at widest part**					
[21.]	**b**	small					3
		medium				Purple Pride	5
		large				Niribi	7
25.		**Calyx tube: color at middle part**					
[22.]	**b**	yellow					1
		green					2
		brown					3
26.		**Calyx lobe: color**					
[23.]	**b**	green					1
		red					2
		brown					3

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27.		**Stamen collar: color**					
[28.]	**b**	white					1
		pink					2
		red					3
		purple					4
28. **(+)**		**Staminode: width at base**					
[27.]	**b**	narrow				Purple Pride	3
		medium				Niribi	5
		broad					7
29.		**Style: color**					
	b	white					1
		pink					2
		red					3
		purple					4
30.		**Time of beginning of flowering**					
		very early					1
		early				Mullering Brook	3
		medium				Purple Pride	5
		late				Pearl Buttons	7
		very late				Oneg	9

8. Explanations on the Table of Characteristics

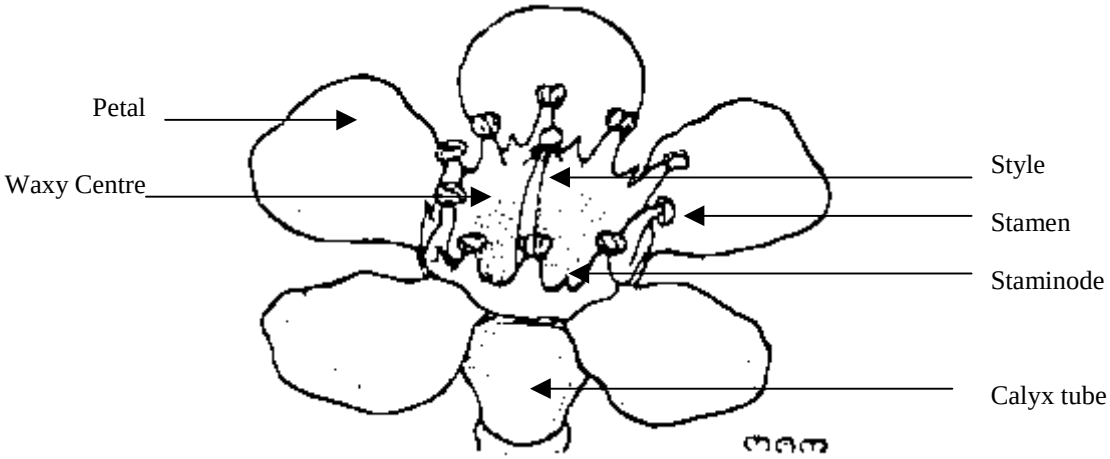

Diagram modified from illustration by Margaret Menadue (Marchant *et al*, 1987)

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 Genus

1.1.1 *Latin Name*	*Chamelaucium* Desf.
1.1.2 Common Name	Waxflower, Geraldton Wax

1.2 Species (please complete)

1.2.1 *Latin Name*	
1.2.2 Common Name	

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 (16)	**Flower: diameter**		
	small	Lady Jennifer	3[ ]
	medium	Mullering Brook, White Spring	5[ ]
	large	Niribi, Purple Pride	7[ ]
5.2i (18)	**Flower (10-14 days after opening): main color of petal**		
	white		1[ ]
	yellow		2[ ]
	pink		3[ ]
	red		4[ ]
	purple		5[ ]
5.3 (30)	**Time of beginning of flowering**		
	very early		1[ ]
	early	Mullering Brook	3[ ]
	medium	Purple Pride	5[ ]
	late	Pearl Buttons	7[ ]
	very late	Oneg	9[ ]

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

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]