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WORKING PAPER ON TEST GUIDELINES FOR STRAWFLOWER, EVERLASTING DAISY (*Bracteantha* Anderb.)

Document prepared by experts from Australia

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I. Subject of these Guidelines

These Test Guidelines apply to all vegetatively propagated varieties of *Bracteantha* Anderb. of the family Asteraceae.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. As a minimum, the following quantity of plant material is recommended:

25 non-budded terminal growth soft tip cuttings less than 3 cm long.

2. The plant material supplied should be visibly healthy, not lacking in vigor or affected by any important pests or diseases. It should preferably not be obtained from *in vitro* propagation.

3. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

1. A test should normally be conducted for one growing period. If distinctness and/or uniformity cannot be sufficiently established in one growing period, the test should be extended for a second growing period.

2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The tests should be carried out under conditions ensuring normal. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations, which must be made up to the end of the growing period. Each test should include a total of 10 plants. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

IV. Methods and Observations

1. All observations determined by measurement, weighing or counting should be made on 10 plants or parts of plants taken from 10 plants 3 to 6 months old.

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, the maximum number of off-types allowed would be 1.

3. Observations on plant height should be made from soil level to the level of the highest terminal bud.

4. Observations on leaves should be made on leaves from the middle part of the shoots.

5. Observations on flower bud color should be made on the largest bud immediately prior to reflexing of the lower bracts. Remove a bract from the middle third of the bud and measure the color from the middle third of the outside of the bract.

6. Observations on flower diameter, side view of the flower, flower bud color, bract size, bract color and pappus color should be made when one third of the florets have opened.

7. Bract size, bract color and pappus color should be recorded after removing bracts from the capitulum. For observation on bract size, remove a bract from the middle row of the involucre. For observations on bract color of varieties with a one colored involucre, remove a bract from the middle row of the involucre. For observations on bract color of varaieties with a bi-colored involucre remove a bract from the middle row of each colored group of bracts in the involucre.

8. Observations on floret color should be made on the outer florets before the florets have opened.

9. 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 tolerance set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.

2. It is recommended that the competent authorities use the following characteristics for grouping varieties:

(a) Plant: growth habit (characteristic 1)
(b) Involucre: number of colors (characteristic 24)
(c) Bracts: predominant color (varieties with one colored involucre only)
(d) Bract: main color of middle third of upper bracts (varieties with bi-colored involucre only) (characteristic 31)
(e) Bract: main color of middle third of lower bracts (varieties with bi-colored involucre only) (characteristic 32)

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.

2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

3. Legend

(*) Characteristics that should be used on all varieties in every growing period over which examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

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

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

	English	français	español	deutsch	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	**Plant: habit**					
	erect				Colourburst Pink	3
	ascending				Gold 'n' Bronze	5
	procumbent					7
2.	**Plant: height**					
	short (<30 cm)					3
	medium (about 45 cm)				Sunraysia Splendour,	5
	tall (>60 cm)				Cockatoo	7
3.	**Plant: density**					
	sparse				Gold 'n' Bronze	3
	medium				Colourburst Gold, Colourburst Pink	5
	dense				Sunraysia Splendour, Menindee Magic	7
4.	**Stem: hairiness**					
	absent					3
	slightly hairy					5
	strongly hairy					7
5.	**Leaf: length**					
	very short (<5 cm)					1
	short (about 10 cm)				Broome Pearl, Argyle Star	3
	medium (about 15 cm)				Cockatoo, Spectrum	5
	long (about 20 cm)					7
	very long (>25 cm)					9

	English	français	español	deutsch	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	**Leaf: width**					
	narrow (<1.5 cm)				Gold ‘n’ Bronze	3
	medium (about 2 cm)				Coolgardie Gold, Spectrum	5
	broad (>3 cm)					7
7.	**Leaf: ratio length to width**					
	small				Gold ‘n’ Bronze	3
	medium					5
	large					7
8.	**Leaf: broadest part**					
	top third					1
	middle third					2
	bottom third					3
9.	**Leaf: shape of apex**					
	acuminate					1
	acute					2
	obtuse					3
	rounded					4
10.	**Leaf: variegation**					
	absent					1
	present					9
11.	**Leaf: main color of upper side**					
	yellow green				Colourburst Gold, Colourburst Pink	1
	light green				Menindee Magic	2
	medium green				Gold ‘n’ Bronze	3
	dark green				Coolgardie Gold	4
	grey green					5

	English	français	español	deutsch	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.	**Leaf: hairiness of <u>upper</u> side**					
	absent					3
	slightly hairy					5
	strongly hairy					7
13.	**Leaf: hairiness of <u>lower</u> side**					
	absent					3
	slightly hairy					5
	strongly hairy					7
14.	**Leaf: undulation of margin**					
	absent or very weak					1
	weak					3
	medium				Spectrum	5
	strong					7
15.	**Peduncle: length**					
	short				Coolgardie Gold	3
	medium				Broome Pearl	5
	long				Gold ‘n’ Bronze	7
16.	**Peduncle: branching**					
	absent					1
	present					9
17.	**Bud: shape of apex**					
	pointed				Dargan Hill Monarch White	1
	rounded				Gold ‘n’ Bronze	2
18.	**Bud: color**					
	RHS colour chart (indicate reference number)					

	English	français	español	deutsch	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	**Inflorescences: predominant position**					
	below foliage level				Coolgardie Gold	1
	level with to just above foliage				Argyle Star, Menindee Magic	2
	high above foliage				Gold ‘n’ Bronze	3
20.	**Inflorescence: diameter**					
	very small (<25 mm)					1
	small (about 40 mm)				Nullabor Flame, Gold ‘n’ Bronze	3
	medium (about 60 mm)				Broome Pearl, Golden Bowerbird	5
	large (about 80 mm)				Nielsen’s Gold	7
	very large (>100 mm)					9
21.	**Inflorescence: lateral view of <u>lower</u> part**					
	concave					3
	flat				Dargan Hill Monarch White	5
	convex				Argyle Star, Colourburst Gold	7
22.	**Inflorescence: lateral view of <u>upper</u> part**					
	concave				Colourburst Gold	3
	flat				Dargan Hill Monarch White	5
	convex				Argyle Star	7
23.	**Inflorescence: number of bracts**					
	few				Citron Spice	3
	medium				Argyle Star	5
	many				Coolgardie Gold	7

	English	français	español	deutsch	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
24.	**Involucre: number of colors**					
	one colored				Lemon Colourburst	1
	bi-colored					2
25.	**Bract: length**					
	short (about 1 cm)					3
	medium (about 1.5 cm)				Menindee Magic	5
	long (about 2 cm)				Lemon Colourburst	7
26.	**Bract: width**					
	narrow					3
	medium				Menindee Magic	5
	broad				Sunraysia Splendour	7
27.	**Varieties with one colored involucre only: Bract: number of colors visible**					
	one					1
	more than one					2
28.	**Varieties with one colored involucre only: Varieties with multicolored bract only: Bract: main color of lower third of bract**					
	RHS colour chart (indicate reference number)					
29.	**Varieties with one colored involucre only: Bract: main color of middle third of bract**					
	RHS colour chart (indicate reference number)					

	English	français	español	deutsch	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30.	**<u>Varieties with one colored involucre only:</u> <u>Varieties with multicolored bract only</u>: Bract: main color of <u>upper third</u> of bract** RHS colour chart (indicate reference number)					
31.	**<u>Varieties with bi-colored involucre only:</u> Bract: main color of middle third of <u>upper</u> bracts** RHS colour chart (indicate reference number)					
32.	**<u>Varieties with bi-colored involucre only:</u> Bract: main color of middle third of <u>lower</u> bracts** RHS colour chart (indicate reference number)					
33.	**Bract: striations**					
	absent					1
	present					9
34.	**Disc: color of outer florets** RHS colour chart (indicate reference number)					
35.	**Pappus: color**					
	white				Colourburst Pink	1
	yellow				Colourburst Gold	2

	English	français	español	deutsch	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
36.	**Time of beginning of flowering**					
	early					3
	medium					5
	late					7

VIII. Explanation on the Table of Characteristics

Half Flower Diagram

to be inserted

Explanations on the species to which this Technical Guideline applies

Current Botanical Name	Historical Botanic Name
Bracteantha acuminata (DC.) Anderb. & Haegi	*Gnaphalium acuminatum* Link *Helichrysum acuminatum* (Link) Sweet *Helichrysum acuminatum* (Link) Sweet var. *acuminatum* *Helichrysum acuminatum* A.Cunn. ex DC.
	Helichrysum acuminatum var. *angustifolium* A.Cunn. ex DC.
Bracteantha bicolor (Lindl.) Anderb. & Haegi	*Helichrysum bicolor* Lindl *Helichrysum bicolorum* A.Cunn. ex DC
Bracteantha bracteata (Vent.) Anderb. & Haegi	*Argyrocome bracteata* (Vent.) B.D.Jacks *Helichrysum bracteatum* (Vent.) Andrews *Helichrysum bracteatum* (Vent.) Andrews f. *bracteatum* *Helichrysum bracteatum* (Vent.) Andrews var. *bracteatum* *Helichrysum bracteatum* f. *albidum* Siebert & Voss *Helichrysum bracteatum* f. *album* Siebert & Voss *Helichrysum bracteatum* f. *aureum* Siebert & Voss *Helichrysum bracteatum* f. *nanum-album* Siebert & Voss *Helichrysum bracteatum* f. *nanum-atrococcineum* Siebert & Voss *Helichrysum bracteatum* f. *nanum-atrosanguineum* Siebert & Voss *Helichrysum bracteatum* f. *nanum-luteum* Siebert & Voss *Helichrysum bracteatum* f. *nanum-roseum* Siebert & Voss: *Helichrysum bracteatum* var. *albidum* A.Cunn. ex DC *Helichrysum bracteatum* var. *album* L.H.Bailey *Helichrysum bracteatum* var. *angustifolium* Guilf *Helichrysum bracteatum* var. *atrococcineum* L.H.Bailey *Helichrysum bracteatum* var. *atrosanguineum* L.H.Bailey *Helichrysum bracteatum* var. *bicolor* (Lindl.) L.H.Bailey *Helichrysum bracteatum* var. *chrysanthum* A.Cunn. ex DC *Helichrysum bracteatum* var. *eriopodum* A.Cunn. ex DC *Helichrysum bracteatum* var. *incurvum* T.Moore *Helichrysum bracteatum* var. *normale* Siebert & Voss *Helichrysum bracteatum* var. *normalis* (F.Muell.) Domin *Helichrysum bracteatum* var. *papillosum* (Labill.) Domin *Helichrysum bracteatum* var. *viscosum* A.Cunn. ex DC *Helichrysum bracteolatum* (Hook.f.) Benth *Helichrysum chrysanthum* Pers *Helichrysum lucidum* Henckel *Helichrysum lucidum* var. *normalis* F.Muell

Current Botanical Name	Historical Botanic Name
Bracteantha papillosa (Labill.) Anderb. & Haegi	*Gnaphalium papillosum* (Labill.) Poir *Helichrysum papillosum* Labill
Bracteantha subundulata (Sch.Bip.) Paul G.Wilson	*Gnaphalium subundulatum* Sch.Bip
Bracteantha viscosa (DC.) Anderb. & Haegi	*Helichrysum bracteatum* var. *viscosum* A.Cunn. ex DC *Helichrysum viscosum* Spreng

IX. Literature

Clarke, I. and Lee, H. (1989) Name that Flower. Melbourne University Press.

Harden, G.J. (1992) Flora of New South Wales, Volume 3. New South Wales University Press.

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)

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

1. Species	*Bracteantha* Anderb. STRAWFLOWER, EVERLASTING DAISY
2. Applicant (Name and address)	
3. Proposed denomination or breeder's reference	

4. Information on origin, maintenance and reproduction of the variety

4.1 Origin

(a) Seedling (indicate parent varieties)

..... [ ]

(b) Mutation (indicate parent variety)

..... [ ]

(c) Discovery (indicate where and when)

..... [ ]

(d) Other (specify)

..... [ ]

4.2 Method of reproduction

– cuttings [ ]

– *in vitro* propagation [ ]

4.3 Other information

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

	Characteristics	Example Varieties	Note
5.1 (1)	**Plant: growth habit**		
	erect	Colourburst Pink	3[ ]
	ascending	Gold 'n' Bronze	5[ ]
	procumbent		7[ ]
5.2 (24)	**Involucre: number of colors**		
	one colored	Lemon Colourburst	1[ ]
	bi-colored		2[ ]
5.3	**<u>Varieties with one colored involucre only:</u> Bracts: predominant color**		
	white	Dargan Hill Monarch White	1[ ]
	yellow	Lemon Colourburst	2[ ]
	orange		3[ ]
	pink		4[ ]
	red	Colourburst Pink	5[ ]
5.4 (31)	**<u>Varieties with bi-colored involucre only:</u> Bract: main color of middle third of <u>upper</u> bracts**		7[ ]
	white		1[ ]
	yellow		2[ ]
	orange		3[ ]
	pink		4[ ]
	red		5[ ]
5.5 (32)	**<u>Varieties with bi-colored involucre only:</u> Bract: main color of middle third of <u>lower</u> bracts**		7[ ]

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different [o)]	State of expression of similar variety	State of expression of candidate variety

[o)] In the case of identical states of expressions of both varieties, please indicate the size of the difference.

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

7.3 Other information

A representative color photo of the variety should be added to 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 that question is yes, please attach a copy of such an authorization.

[End of document]