

TG/176/4(proj.1) ORIGINAL: English DATE: 2006-07-20

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

OSTEOSPERMUM

UPOV Code: OSTEO

Osteospermum L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Canada

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:*

Botanical name	English	French	German	Spanish
Osteospermum L.	Osteospermum	Ostéospermum	Osteospermum	Osteospermum

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. <u>Subject of these Test Guidelines</u>

These Test Guidelines apply to all varieties of *Osteospermum* L. of the family *Compositae*.

2. <u>Material Required</u>

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.

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

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. <u>Method of Examination</u>

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. Except where otherwise indicated, the optimum stage of development for the assessment of the characteristics is at the time of full flowering.

3.3.2 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 15 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. <u>Assessment of Distinctness, Uniformity and Stability</u>

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 15 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. <u>Grouping of Varieties and Organization of the Growing Trial</u>

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) Plant: attitude of shoots (characteristic 1)
- (b) Leaf: variegation (characteristic 6)
- (c) Ray floret: inward rolling of longitudinal margins (characteristic 16)
- (d) Ray florets: number of colors on upper side (violet base excluded) (characteristic 22)
- (e) Ray floret: main color of upper side (characteristic 23) with the following groups:
 - Gr. 1: white Gr. 2: yellow Gr. 3: orange Gr. 4: pink Gr. 5: red Gr. 6: purple Gr. 7: violet

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

6. <u>Introduction to the Table of Characteristics</u>

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 Chapter 6.3
- (a) See Explanations on the Table of Characteristics in Chapter 8.1.
- (+) See Explanations on the Table of Characteristics in Chapter 8.2

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7. <u>Table of Characteristics</u>

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*)		Plant: attitude of shoots					
QN		erect				Nairobi	1
		semi-erect				Sunny Boy	3
		horizontal				Sirius	5
		semi-drooping				Tanga	7
		drooping				White Flash	9
2. (*)		Shoot: length					
QN		short				Prince	3
		medium				Polarstern	5
		long				Tanga	7
3.	(a)	Leaf: length (including petiole)					
QN		short				Prince	3
		medium				Nairobi	5
		long				Pink Clio	7
4.	(a)	Leaf: width					
QN		narrow					3
		medium				Sunny Lady	5
		broad				Arctur	7
5. (+)	(a)	Leaf: depth of incisions of margin	1				
QN		absent or very shallow					1
		shallow					3
		medium					5
		deep					7

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		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6. (*)	(a)	Leaf: variegation					
QL		absent				Sparkler	1
		present				Silver Sparkler	9
7.	(a)	<u>Only varieties with- out variegation:</u> Leaf: green color of upper side					
QN		light					1
		medium				Sunny Lady	2
		dark				Dakar	3
8.		Peduncle: length (<i>is this necessary??</i>)					
QN		short					
		medium					
		long					
9. (*)	(b)	Inflorescence: number of ray florets					
QN		few					1
		medium					2
		many					3
10. (*)	(b)	Inflorescence: diameter					
QN		small				Prince	1
		medium				Sunny Lady	2
		large				Tanga	3

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		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. (*)	(b)	Ray floret: length					
QN		short				Pink Clio	3
		medium				Sunny Lady	5
		long				Lusaka	7
12. (*)	(b)	Ray floret: width					
QN		narrow				Prince	3
		medium				Sunny Lady	5
		broad				Sirius	7
13.	(b)	Ray floret: length/width ratio					
PQ		small					3
		medium					5
		large					7
14.	(b)	Ray floret: position of broadest part					
PQ		towards base					1
		at middle					2
		towards apex					3
15. (*) (+)	(b)	Ray floret: shape of apex					
PQ		acute				Akream	1
		obtuse				Wildside	2
		rounded					3
		cleft (forked?)					4

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		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. (*) (+)	(b)	Ray floret: inward rolling of longitudinal margins	ì				
PQ		absent on all flowers				Brightside	1
		present on some flowers				Osjaseclipur (??)	2
		present on all flowers				Balserlabli	3
17.	(b)	Only varieties with rolled ray floret margins: Ray floret: approximate portion of margin that is rolled (perhaps this is not necessary?? Or perhaps to determine size of "spoon"?	5 5				
QN		one-third				Balserlabli	1
		one-half				Balserwibli (?)	2
		two-thirds					3
18. (+)	(b)	Ray florets: attitude (this may be environmental response and therefore not a good characteristic?)					
QN		upwards					3
		horizontal				Brightside	5
		downwards					7
19.		Young flower: main color of upper side (if clearly different from fully developed flower)					
PQ		RHS color chart (indicate reference number)					

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		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20.	(b)	Ray floret: presence of violet zone at base					
QL		absent					
		present					
21.	(b)	<u>Only varieties with</u> <u>violet zone at base:</u> Ray floret: width of violet zone					
QN		narrow					
		medium					
		broad					
22. (*) (+)	(b)	Ray florets: number of colors on upper side (violet base excluded)					
QL		one				Aksinto	1
		two				Balserlabli	2
		more than two					
23. (*) (+)	(b)	Ray floret: main color of upper side					
PQ		RHS Colour Chart (indicate reference number)					
24.	(b)	Only varieties with one color on upper side: Ray floret: color distribution on upper side (is this necessary?)					
PQ		lighter towards base					1
		even					2
		lighter towards apex					3

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		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25. (*)	(b)	<u>Only varieties with</u> <u>two or more colors</u> <u>on upper side:</u> Ray floret: secondary color on upper side					
PQ		RHS Colour Chart (indicate reference number)					
26. (+)	(b)	<u>Only varieties with</u> <u>two or more colors</u> <u>on upper side:</u> Ray floret: distribution of secondary color on upper side					
PQ		basal zone					1
		middle zone				Balserlabli	2
		distal zone					3
27. (*)	(b)	<u>Only varieties with</u> <u>more than two</u> <u>colors on upper side</u> Ray floret: tertiary color on upper side	1				
PQ		RHS Colour Chart (indicate reference number)					
28. (*)	(b)	<u>Only varieties with</u> <u>more than two</u> <u>colors on upper side</u> Ray floret: distribution of tertiary color on upper side	2				
PQ		basal zone					
		middle zone					
		distal zone					

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		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note Nota
29. (*)	(b)	Ray floret: main color on lower side <i>(can these be</i> <i>simplified?)</i>					
PQ		yellowish white				Zimba	1
		yellow					2
		light blue				Polarstern	3
		violet blue				Castor	4
		blue violet				Sunny Girl	5
		brown violet				Lila Polarstern	6
		yellow brown				Lemon Symphony	7
		red brown				Saturn	8
		brown				Beira	9
		brown purple				Sunny Pavlos	10
		purple				Sunny Lady	11
30.	(b)	Disc: diameter					
QL		small					
		medium					
		large					

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	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31. (*)	Disc: color before dehiscence					
PQ	white				Swazi	1
	yellow				Zulu	2
	orange					
	red					
	purple				Sunny Silvia	3
	violet				Gustaf	4
	light blue				Mira	5
	dark blue				Pluto	6
	dark grey green				Lemon Symphony	7
	black					8

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8. <u>Explanations on the Table of Characteristics</u>

8.1 Explanations covering several characteristics

Unless otherwise indicated, all observations should be made at the time of full flowering.

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

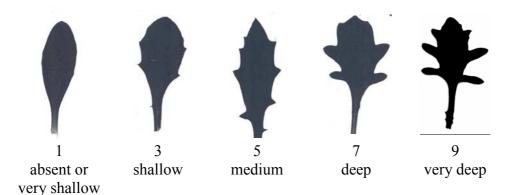
- (a) All observations on the leaf should be made on full developed leaves from the middle part of the plant
- (b) All observations on the flower should be made when the outer row of disc florets has opened

8.2 Explanations for individual characteristics

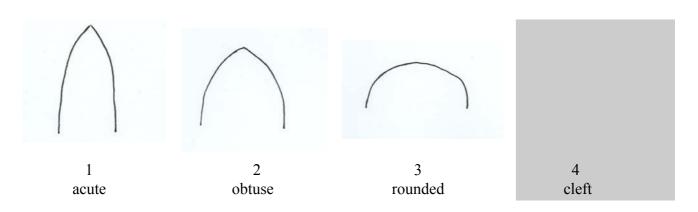
Ad. 2: Shoot: length

The shoot length should be observed towards the end of full flowering.

Ad. 5: Leaf: depth of incisions of margins



Ad. 15: Ray floret: shape of apex



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Ad. 16: Ray floret: inward rolling of longitudinal margins

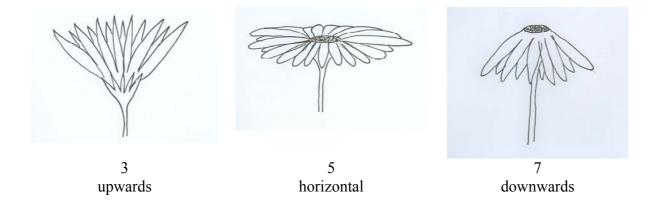


absent



present

Ad. 18 Ray florets: attitude



Ad. 22 Ray florets: number of colors on upper side (violet base excluded)

In varieties with "spoon type" flowers (longitudinal margins of ray florets rolled inward forming a tube for part of the length), the lower side of the ray floret is visible when viewing the upper side of the flower. However, in these cases the color of the lower side is not considered to be a color of the upper side.

Ad. 23 Ray floret: main color of upper side

The main color is the color of the largest surface area. In cases where it is difficult to determine the largest surface area, the darkest color is considered to be the main color.

9. <u>Literature</u>

Heywood, V.H. (ed.), 1993: Flowering Plants of the World, B.T. Batsford., London, U.K.

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10. <u>Technical Questionnaire</u>

TEC	CHNICAL QUESTIONNAIRE	Page $\{x\}$ of $\{y\}$	Reference Number:	
			Application date: (not to be filled in by the appli	icant)
		CHNICAL QUESTION ection with an application	NAIRE on for plant breeders' rights	
1.	Subject of the Technical Que	estionnaire		
	1.1Genus1.2SpeciesBotanical name(please complete)Common name	Dsteospermum L.]
2.	Applicant			
	Name			
	Address			
	Telephone No.			
	Fax No.			
	E-mail address			
	Breeder (if different from ap	plicant)		
3.	Proposed denomination and	preeder's reference		
	Proposed denomination (if available)			
	Breeder's reference			

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TECHN	ICAL Q	UESTIONNAIRE Page {x} of {y} Reference	ce Number:				
[#] 4. Info	ormation	n on the breeding scheme and propagation of the vari	ety				
4.1	Breed	ng scheme					
	Varie	ty 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	Metho	od of propagating the variety					
	4.2.1	Vegetative propagation					
		 (a) cuttings (b) <i>in vitro</i> propagation (c) other (state method) 	[] [] []				
	4.2.2	Seed	[]				
	4.2.3	Other (please provide details)	[]				

 $^{^{\#}}$ Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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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: attitude of shoots		
	erect	Nairobi	1[]
	semi-erect	Sunny Boy	3[]
	horizontal	Sirius	5[]
	semi-drooping	Tanga	7[]
	drooping	White Flash	9[]
5.2 (6)	Leaf: variegation		
	absent	Sparkler	1[]
	present	Silver Sparkler	9[]
5.4 (16)	Ray floret: inward rolling of longitudinal margins		
	absent on all flowers	Brightside	1[]
	present on some flowers	Osjaseclipur (??)	2[]
	present on all flowers	Balserlabli	3[]
5.5 (22)	Ray florets: number of colors on upper side (violet base excluded)		
	one	Aksinto	1[]
	two	Balserlabli	2[]
	more than two		3[]
5.6i (23)	Ray floret: main color of upper side		
	RHS Colour Chart (indicate reference number)		

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TECH	HNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
	Characteristics		Example Varieties	Note
5.6ii (23)	Ray floret: main color of upper side	de		
	white			1[]
	yellow			2[]
	orange			3[]
	pink			4[]
	red			5[]
	purple			6[]
	violet			7[]
	other color (indicate which)			8[]

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TECHNICAL QUESTIONIVAIRE Tage (x, 01 (y) Reference Number.	TECHNICAL QUESTIONNAIRE	Page $\{x\}$ of $\{y\}$	Reference Number:
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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	Characteristic(s) in	Describe the expression	Describe the expression
variety(ies) similar to	which your candidate	of the characteristic(s)	of the characteristic(s)
your candidate variety	variety differs from	for the similar	for your candidate
	the similar variety(ies)	variety(ies)	variety
(Example)	Ray floret: width	broad	narrow

Comments:

[#]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 Are there any special conditions for growing the variety or conducting the examination?

Yes [] No []

(If yes, please provide details)

7.3 Other information

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

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

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TECHNICAL QUESTIONNAIREPage {x} of {y}Reference Number:					
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. Information on plant material t	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. vir	rus, bacteria, phytoplas	ma) Yes [] No []			
(b) Chemical treatment (e.g.	growth retardant, pest	icide) 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	Signature Date				