

**TWO/35/21****ORIGINAL:** English**DATE:** November 14, 2002

**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 TECHNICAL GUIDELINES FOR DAHLIA**

*Document prepared by experts from the United Kingdom*




 UPOV

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**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**  
GENEVA

Dahlia *
<i>Dahlia Cav.</i> *

**GUIDELINES****FOR THE CONDUCT OF TESTS****FOR DISTINCTNESS, UNIFORMITY AND STABILITY**

Alternative Names: \*

Latin	English	French	German	Spanish
<i>Dahlia Cav.</i>	Dahlia			

**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.

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\* 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](http://www.upov.int)), for the latest information.]

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1. Subject of these Guidelines

1.1 These Test Guidelines apply to all varieties of *Dahlia* Cav.

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.

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

18 well-rooted cuttings of commercial standard.

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 as 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, all characteristics should be observed at the time of full flowering.

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

- (a) Stem characteristics should be observed on the middle third of the stem (the stem excludes the peduncle).

- (b) Leaf characters are recorded on typical leaves taken from the middle third of the stem, and are recorded on the whole leaf regardless of number of leaflets.
- (c) Ray floret characters should be observed on the outer ray florets unless otherwise stated.
- (d) The principle colour of the ray floret is the one most visible in the flower head as a whole.

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 18 plants.

#### 3.5 *Number of Plants/Parts of Plant to be Examined*

Unless otherwise indicated, all observations for vegetatively propagated varieties 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 For the vegetatively propagated varieties the acceptable number of off-type tolerated in a sample size of 18 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.

### 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 others 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 trials so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

- (a) Flowerhead: classification group (characteristic 22)
- (b) Flowerhead: colour group (characteristic 24)

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-Quantitative characteristic –see Section 6.3

(+) See Explanations on the Table of Characteristics in Chapter 8.

(a)-(d) Method of observation –see Section 3.3.2



7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tablă de caractere

Char. No.	MoE*	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>1.</b>		<b><u>Pot varieties only:</u> Plant: growth habit</b>					
(+)		upright					1
		semi-upright					2
		rounded					3
		spreading					4
<b>2.</b>		<b>Plant: height</b>					
		short					3
		medium					5
		tall					7
<b>3.</b>	(a)	<b>Stem: anthocyanin</b>					
		absent					1
		present					9
<b>4.</b>	(a)	<b>Stem: intensity of anthocyanin</b>					
		weak					3
		medium					5
		strong					7
<b>5.</b>	(a)	<b>Stem: distribution of anthocyanin</b>					
		confined to the nodes					1
		spreading from the nodes					2
		uniform					3

\* MoE=Method of Observation.

Char. No.	MoE*	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>6.</b>	<b>(b)</b>	<b>Leaf: length (including petiole)</b>					
(+)		short					3
		medium					5
		long					7
<b>7.</b>	<b>(b)</b>	<b>Leaf: width</b>					
(+)		narrow					3
		medium					5
		broad					7
<b>8.</b>	<b>(b)</b>	<b>Leaf: length/width ratio</b>					
		low					3
		medium					5
		high					7
<b>9.</b>	<b>(b)</b>	<b>Leaf: number of leaflets</b>					
		low					3
		medium					5
		high					7
<b>10.</b>	<b>(b)</b>	<b>Leaf: dentation of margin – number of teeth</b>					
		few					3
		medium					5
		many					7

Char. No.	MoE*	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
11.	(b)	<b>Leaf: dentation of margin – depth of teeth</b>					
		shallow					3
		medium					5
		deep					7
12.	(b)	<b>Leaf: texture of upper surface</b>					
		smooth					1
		rugose					2
13.	(b)	<b>Leaf: upper surface – degree of rugosity</b>					
		weak					3
		medium					5
		strong					7
14.	(b)	<b>Leaf: vein on upper surface</b>					
		depressed					3
		flat					5
		raised					7
15.	(b)	<b>Leaf: color</b>					
		light green					1
		medium green					2
		dark green					3
		green tinged with purple					4
		green tinged with bronze					5
		bronze					6
purple					7		

Char. No.	MoE*	English	français	deutsch	español	ExampleVarieties Exemples Beispielsorten Variedadesejemplo	Note/ Nota
<b>16.</b>	<b>(b)</b>	<b>Leaf:glossiness</b>					
		weak					3
		medium					5
		strong					7
<b>17.</b>		<b>Peduncle:length</b>					
		short					3
		medium					5
		long					7
<b>18.</b>		<b>Peduncle: anthocyanin coloration</b>					
		absent					1
		present					9
<b>19.</b>		<b>Peduncle:intensity ofanthocyanin coloration</b>					
		weak					3
		medium					5
		strong					7
<b>20.</b>		<b>Flowerheads: positioninrelation tofoliage</b>					
		belowfoliage					3
		atsamelevel					5
		abovefoliage					7

Char. No.	MoE*	English	français	deutsch	español	ExampleVarieties Exemples Beispielsorten Variedadesejemplo	Note/ Nota
<b>21.</b>		<b>Flowerhead:angle relativetopeduncle</b>					
(+)							
		90°					1
		<90 °but>45 °					2
		45°					3
		<45 °					4
<b>22.</b>		<b>Flowerhead: classificationgroup</b>					
(+)							
		single					1
		anemone					2
		collerette					3
		waterlily					4
		decorative					5
		ball					6
		pompon					7
		cactus					8
		semi-cactus					9
		Dahlietta					10
		other(indicate)					11
<b>23.</b>		<b>Flowerhead:type</b>					
		single					1
		semi-double					2
		daisy-eyeddouble					3
		double					4

Char. No.	MoE*	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>24.</b>		<b>Flowerhead:color group</b>					
(+)		white					1
		yellow					2
		orange					3
		bronze					4
		orange-red					5
		mediumred					6
		darkred					7
		lightpink					8
		darkpink					9
		lilac,lavender, mauve					10
		purple,wineviolet					11
		blends					12
		bicolored					13
		variegated					14
<b>25</b>		<b>Flowerhead: diameter</b>					
		small					3
		medium					5
		large					7
<b>26.</b>		<b><u>Doubleanddaisy</u> <u>eyeddouble</u> <u>varietiesonly:</u> Flowerhead:height</b>					
		low					3
		medium					5
		high					7

Char. No.	MoE*	English	français	deutsch	español	ExampleVarieties Exemples Beispielsorten Variedadesejemplo	Note/ Nota
27.	(c)	<b><u>Excludingdouble varieties:Flower head:numberof rayflorets</u></b>					
		low					3
		medium					5
		high					7
28	(c)	<b><u>Doubleflowers only:Flowerhead: densityofray florets</u></b>					
		sparse					3
		medium					5
		dense					7
29	(c)	<b><u>Collerettevarieties only:Collar segments:length relativetoray florets</u></b>					
		muchshorter					1
		shorter					2
		samelength					3
30.	(c)	<b><u>Rayfloret:length</u></b>					
		short					3
		medium					5
		long					7
31.	(c)	<b><u>Rayfloret:width</u></b>					
		narrow					3
		medium					5
		broad					7

Char. No.	MoE*	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
32.	(c)	<b>Rayflore: length/ width ratio</b>					
		low					3
		medium					5
		high					7
33.	(c)	<b>Rayflore: longitudinal axis</b>					
		incurved					1
		straight					2
		reflexed					3
		twisted					4
		sinusoidal					5
34.	(c)	<b><u>Non-straight ray flore only</u> : proportion of axis not straight</b>					
		¼					3
		½					5
		¾					7
35.	(c)	<b><u>Non-straight ray flore only</u> : Ray flore: strength of curvature</b>					
		weak					3
		medium					5
		strong					7



Char. No.	MoE*	English	français	deutsch	español	ExampleVarieties Exemples Beispielsorten Variedadesejemplo	Note/ Nota
36.	(c)	<b>Rayf loret:cross sectionatmid -point</b>					
		sharplyfolded					1
		stronglyconcave					2
		moderatelyconcave					3
		weaklyconcave					4
		flat					5
		weaklyconvex					6
		moderatelyconvex					7
		stronglyconvex					8
37.	(c)	<b>Rayfloretilate ral marginatmiddleof floretil</b>					
		revolute					1
		flat					2
		involute					3
38.	(c)	<b>Rayfloretilshapeof tip</b>					
		rounded					1
		pointed					2
		dentate					3
		fringed					4
		horned					5
		retuse					6
		lacinate					7
39.	(c)	<b>Rayfloretil distributionofcolor</b>					
		non-uniform					1
		uniform					2

Char. No.	MoE*	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
40.	(c)	<b>Rayfloretnon - uniformcolor: type of variation</b>					
(+)		change in intensity					1
		blend					2
		bicolor					3
		variegation					4
41.	(c)	<b><u>Bicolored and variegated varieties only</u>: Rayfloretnon: distribution of color</b>					
(+)		striped					1
		zoned					2
		random					3
42.	(d)	<b>Rayfloretnon: principle color of upperside</b>					
(+)		RHS Colour Chart (indicate reference number)					
43.	(c)	<b>Rayfloretnon: secondary color of upperside</b>					
		RHS Colour Chart (indicate reference number)					
44.	(c)	<b>Rayfloretnon: tertiary color of upperside</b>					
		RHS Colour Chart (indicate reference number)					
45.	(d)	<b>Rayfloretnon: principle color of flowerside</b>					
(+)		RHS Colour Chart (indicate reference number)					

Char. No.	MoE*	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
46.	(c)	<b>Rayflore: secondary color of lowerside</b>					
		RHS Colour Chart (indicate reference number)					
47.		<b>Disc: diameter</b>					
		small					3
		medium					5
		large					7
48.		<b><u>Single, semi -double and collerette varieties only</u> : Disc: color before anther dehiscence</b>					
		whitish					1
		green					2
		yellow-green					3
		yellow					4
		orange					5
		brown					6
		brown-black					7

Char. No.	MoE*	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
49.		<b><u>Single, semi -double and collerette varieties only</u> :Disc: color at anther dehiscence</b>					
		whitish					1
		green					2
		yellow-green					3
		yellow					4
		orange					5
		brown					6
		brown-black					7
50.		<b><u>Anemone flowered varieties only</u> :Disc florets:color</b>					
		RHS Colour Chart (indicate reference number)					
51.		<b><u>Collerette varieties only</u>: Collar segments:color</b>					
		RHS Colour Chart (indicate reference number)					

8. ExplanationsontheTableofCharacteristics

Ad.1: Diagram

Ad.6and7: Diagram

Ad.21: Diagram

Ad.22: Diagram

Ad.24: Explanation

Ad.40: Explanation

Ad.41: Diagram

9. Literature

10. TechnicalQuestionnaire

TECHNICALQUESTIONNAIRE	Page { x } of { y }	ReferenceNumber:
		Applicationdate: (nottobefilledinbytheapplicant)
TECHNICALQUESTIONNAIR E tobecompletedinconnectionwithanapplicationforplantbreeders' rights		
1. SubjectoftheTechnicalQuestionnaire		
1.1 Genus	Dahlia	
1.1.1 <i>LatinName</i>	<input type="text" value="Dahlia Cav."/>	
1.1.2 CommonName	<input type="text" value="DAHLIA"/>	
1.2 Species(pleasecomplete)		
1.2.1 <i>LatinName</i>	<input type="text"/>	
1.2.2 CommonName	<input type="text"/>	
2.Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
TelephoneNo.	<input type="text"/>	
FaxNo.	<input type="text"/>	
E-mailaddress	<input type="text"/>	
Breeder(ifdifferentfromapplicant)	<input type="text"/>	

TECHNICALQUESTIONNAIRE	Page { x } of { y }	ReferenceNumber:
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3. Proposeddenominationandbreeder'sreference

Proposeddenomination  
(ifavailable)

Breeder'sreference

4. Informationonthebreedingschemeandpropagationofthevariety

4.1 BreedingScheme

4.1.1 Varietyresultingfrom:

- (a) controlledcross   
(pleasestateparentvarieties)
- (b) partiallyunknowncross   
(pleasestateknownparentvariety(ies))
- (c) totallyunknowncross

4.1.2 Mutation   
(pleasestateparentvariety)

4.1.3 Discovery   
(pleasestatewhere,whenandhowdeveloped)

4.1.4 Other   
(pleaseprovidedetails)

4.2 MethodofPropagatingtheVariety

(a)cuttings

(b) *invitro* propagation

(c)other(statemethod)



TECHNICALQUESTION NAIRE	Page{ x }of{ y }	ReferenceNumber:
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5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the one which best corresponds).

	Characteristics	Example Varieties	Note
<b>5.1</b>	<b>Plant:height</b>		
(2)			
	short		3
	medium		5
	tall		7
<b>5.2</b>	<b>Leaf:color</b>		
(15)			
	lightgreen		1
	mediumgreen		2
	darkgreen		3
	greentingedwithpurple		4
	greentingedwithbronze		5
	bronze		6
	purple		7
<b>5.3</b>	<b>Flowerhead: classificationgroup</b>		
(22)			
	single		1
	anemone		2
	collerette		3
	waterlilly		4
	decorative		5
	ball		6
	pompon		7
	cactus		8
	semi-cactus		9
	Dahlietta		10
	other(indicate)		11

TECHNICALQUESTIONNAIRE	Page { x } of { y }	ReferenceNumber:
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	Characteristics	ExampleVarieties	Note
<b>5.4</b>	<b>Flowerhead:type</b>		
<b>(23)</b>			
<b>(+)</b>			
	single		1
	semi-double		2
	daisy-eyeddouble		3
	double		4
<b>5.5</b>	<b>Flowerhead:colourgroup</b>		
<b>(24)</b>			
<b>(+)</b>			
	white		1
	yellow		2
	orange		3
	bronze		4
	orange-red		5
	mediumred		6
	darkred		7
	lightpink		8
	darkpink		9
	lilac,lavender,mauve		10
	purple,wineviolet		11
	blends		12
	bicoloured		13
	variegated		14
<b>5.6</b>	<b>Flowerhead:diameter</b>		
<b>(25)</b>			
	small		3
	medium		5
	large		7



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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