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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

DAHLIA

UPOV Code: DAHLI

Dahlia Cav.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from the United Kingdom

*to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees at its
thirty-eighth session,
to be held in Seoul, Korea, from September 12 to 16, 2005*

Alternative Names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Dahlia Cav.</i>	Dahlia	Dahlia	Dahlie	Dalia

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. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Dahlia* Cav. of the family *Asteraceae*.

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 or tubers.

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

18 rooted cuttings or tubers

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*

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 plants in the test should not be disbudded.

3.3.2 Stage of development for the assessment

The optimum stage of development for the assessment of the characteristics is the time of full flowering.

3.3.3 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 12 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. 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 of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 12 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 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) Leaf color (characteristic 9)
- (b) Flower head: type (characteristic 21)
- (c) Only flower head type: single and semi double: flower head: disc type (characteristic 22)
- (d) Flower head: diameter (characteristic 25)
- (e) Ray floret: number of colors of the inner side (characteristic 43)
- (f) Ray floret: first color of the inner side by group (characteristic 44)
- (g) Only ray florets with more than one color: second color of the inner side by group (characteristic 46)

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 Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3

QN: Quantitative characteristic – see Chapter 6.3

PQ: Pseudo-qualitative characteristic – see Chapter 6.3

(a)-(e) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 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. (+)	Plant: growth habit					
PQ	upright				Red Fox	1
	semi upright				Dark Desire	2
	rounded				Carolina Orange	3
	spreading				Papagaya	4
2. (*)	Plant: height					
QN	short				Gallery Rubens	3
	medium				Dark Desire	5
	tall				Hot Chocolate	7
3. (+)	Stem: color					
PQ	green				Jaimaica	1
	green tinged with brownish red or purple				Carolina Orange	2
	brownish red				Dark Desire	3
	purple				Hot Chocolate	4
4. (*) (+)	Leaf: type					
PQ	(a) simple				Bounty	1
	pinnate				Frivolous Glow	2
	bipinnate				The Bishop of Llandaff	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
5. (+)	Leaf: wing					
QN	(a)	absent or weak				1
		moderate				2
		strong				3
6. (* (+)	Leaf: length including petiole					
QN	(a)	short			Carolina Orange	3
		medium			Jaimaica	5
		long			Ragged Robin	7
7. (* (+)	Leaf: width					
QN	(a)	narrow			Carolina Orange	3
		medium			Gallery Rubens	5
		broad			Ragged Robin	7
8. (*	Leaf: length/ width ratio					
QN	(a)	low			Ragged Robin	3
		medium			Olinda	5
		high			Carolina Orange	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
9. (*)	Leaf: color					
PQ	(a)	light green			Rio	1
		medium green			Red Fox	2
		dark green			Frivolous Glow	3
		green tinged with brownish red			City of Rotterdam	4
		green tinged with purple			Passion	5
		brownish red			Nippon	6
		purple			Tresor	7
10.	Leaf: glossiness					
QN	(a)	weak			Red Fox	3
		medium			Papagaya	5
		strong				7
11.	Leaf : texture of surface					
QN	(a)	smooth or very weakly rugose			Hot Chocolate	1
		weakly rugose			Karma Ventura	2
		strongly rugose			Carolina Orange	3
12.	Leaf : veins					
QN	(a)	depressed				1
		flat				2
		raised			Carolina Orange	3
13.	Leaflet: shape					
PQ	(b)	elliptic			Olinda	1
		ovate			Carolina Orange	2
		oblanceolate			Frivolous Glow	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
14.	Leaflet: shape of base					
(+)						
PQ	(b)	acute			Frivolous Glow	1
		obtuse			Olinda	2
		rounded			Carolina Orange	3
		truncate				4
		cordate				5
		asymmetric				6
15.	Leaflet margin: number of incisions (excluding lobes)					
QN	(b)	few			Passion	3
		medium			Carolina Orange	5
		many			Frivolous Glow	7
16.	Leaflet margin: depth of incisions (excluding lobes)					
QN	(b)	shallow			Hot Chocolate	3
		medium			Frivolous Glow	5
		deep			Baronesse	7
17.	Peduncle: length					
QN		short			Bounty	3
		medium			Dark Desire	5
		long			Red Fox	7
18.	Peduncle: color					
PQ		green			Jaimaica	1
		green tinged with brownish red or purple			Carolina Orange	2
		brownish red			Dark Desire	3
		purple			Hot Chocolate	4

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
19. (*)	Flower heads: position in relation to foliage					
QN	below foliage					1
	at same level				Gallery Rubens	2
	moderately above foliage				Frivolous Glow	3
	high above foliage				Red Fox	4
20. (+)	Flower head: attitude					
QN	upright				Gallery Rubens	1
	semi upright				Passion	3
	horizontal				Carolina Orange	5
	nodding					7
21. (*) (+)	Flower head: type					
PQ	single				Dark Desire	1
	semi double				The Bishop of Llandaff	2
	daisy-eyed double				Carolina Orange	3
	double				Passion	4
22. (*) (+)	<u>Only flower head</u> <u>type: single and</u> <u>semi double: flower</u> <u>head: disc type</u>					
PQ	daisy				Dark Desire	1
	anemone				Scarlet Comet	2
23. (*) (+)	Flower head: collar segments					
QL	absent				Dark Desire	1
	present (collerette type)				Famoso	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
24.	Flower head: length of collar segments relative to ray florets						
QN	about quarter the length				Cher Ami	3	
	about half the length				Famoso	5	
	about three quarters the length				Bumble Rumble	7	
25. (*)	Flower head: diameter						
QN	small				Jaimaica	3	
	medium				Passion	5	
	large					7	
26.	<u>Only double and daisy eyed double varieties:</u> flower head: height						
QN	short				Frivolous Glow	3	
	medium				Hot Chocolate	5	
	tall				Karma Bon Bini	7	
27. (*)	<u>Only single, semi double and daisy- eyed double varieties:</u> flower head: number of ray florets						
QN	few				The Bishop of Llandaff	3	
	medium				Carolina Orange	5	
	many				Bahamas	7	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
28. (*)	<u>Double flowered</u> varieties only: flower head: density of ray florets					
QN	sparse				Karma Ventura	3
	medium				Karma Bob Bini	5
	dense				Red Fox	7
29. (*)	Ray floret: length					
QN	(c) short				Red Fox	3
	medium				Kiedahboa	5
	long				Gallery Bellini	7
30. (*)	Ray floret: width					
QN	(c) narrow				Frivolous Glow	3
	medium				Gallery Rubens	5
	broad				Passion	7
31. (*)	Ray floret: length/ width ratio					
QN	(c) low				Bounty	3
	medium				Dark Desire	5
	high				Gallery Bellini	7
32. (+)	Ray floret: upper surface					
PQ	(d) smooth					1
	ribbed					2
	keeled				Moonshine	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
33. (+)	<u>Only keeled florets:</u> ray floret: number of keels					
PQ	(d)	one				1
		two			Moonshine	2
		more than two				3
34. (* (+)	<u>Ray floret: profile in cross section at mid point</u>					
QN	(d)	strongly concave with margins overlapping				1
		strongly concave with margins touching				2
		strongly concave			Red Fox	3
		moderately concave			Jaimaica	4
		weakly concave			Salvador	5
		flat			Dark Desire	6
		weakly convex			Karma Ventura	7
		moderately convex			Mick'sPeppermint	8
		strongly convex				9
		strongly convex with margins touching				10
		strongly convex with margins overlapping			Alfred Grille	11

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
35.	Ray floret: profile					
(+)	in cross section at <u>¾ point, if different</u>					
QN	(d)	strongly concave with margins overlapping				1
		strongly concave with margins touching				2
		strongly concave				3
		moderately concave				4
		weakly concave				5
		flat				6
		weakly convex				7
		moderately convex				8
		strongly convex				9
		strongly convex with margins touching				10
		strongly convex with margins overlapping				11
36.	Ray floret: rolling					
(+)	of margin					
QN	(d)	strongly involute				1
		moderately involute			Hot Chocolate	2
		weakly involute			Carolina Orange	3
		flat (not rolled)			Frivolous Glow	4
		weakly revolute			Blue Angel	5
		moderately revolute				6
		strongly revolute			Mick's Peppermint	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
37.	Ray floret: position of part with rolled margin					
PQ	(d)	basal quarter				1
		basal half			Hot Chocolate	2
		basal three quarters				3
		middle half				4
		distal three quarters				5
		distal half			Mick's Peppermint	6
		distal quarter				7
		throughout				8
38.	Ray floret: longitudinal axis					
(*)						
(+)						
QN	(d)	incurving			Karma Bon Bini	1
		straight			Kiedahboa	2
		reflexing			Baronesse	3
39.	<u>Only non-straight ray florets:</u> ray floret: proportion of axis not straight					
QN	(d)	distal quarter			Baronesse	1
		distal half				2
		distal three quarters			Karma Bon Bini	3
40.	<u>Only non-straight ray florets:</u> ray floret: strength of curvature					
QN	(d)	weak			Frivolous Glow	3
		medium			Karma Bon Bini	5
		strong				7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
41. (+)	Ray floret: twisting					
PQ	(d)	absent or very weak			Gallery Rubens	1
		moderate			Ragged Robin	2
		strong				3
42. (*)	Ray floret: shape of apex					
PQ	(d)	pointed			Carolina Orange	1
		rounded			Bounty	2
		retuse			Gallery Rubens	3
		dentate			Karma Bon Bini	4
		mamillate			Passion	5
		fringed			Jacy	6
		laciniate			My Beverly	7
		horned				8
43. (*)	(d)	Ray floret: number of colors of the inner side				
PQ	(e)	one			Red Fox	1
		two			Papagaya	2
		more than two			Secret Glow	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
44.	(d) Ray floret: first color of the inner side by group					
(*)	(e) side by group					
PQ	white				Secret Glow, Papagaya	1
	off white				Bounty	2
	yellow				Salvador	3
	bronze					4
	orange				Kiedahboa	5
	orange red				Carolina Orange	6
	salmon					7
	pink				Gallery Bellini	8
	red				Red Fox	9
	red purple				Hot Chocolate	10
	purple				Olinda	11
	violet					12
45.	(d) Ray floret: first color of the inner side					
(*)	(e) side					
	RHS Colour Chart (indicate reference number)					

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
46.	(d) <u>Excludes varieties</u>					
(*)	<u>with number of</u>					
	(e) <u>colors on inner</u>					
	<u>side: one ray floret:</u>					
	<u>second color of the</u>					
	<u>inner side by group</u>					
PQ	white					1
	off white					2
	yellow				Secret Glow	3
	bronze					4
	orange					5
	orange red					6
	salmon				Salvador	7
	pink					8
	red				Papagaya	9
	red purple				Kiedahbasar	10
	purple				Fabula Famoso	11
	violet					12
47.	(d) <u>Only ray florets</u>					
(*)	<u>with more than one</u>					
	(e) <u>color: second color</u>					
	<u>of the inner side</u>					
	RHS Colour Chart (indicate reference number)					

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
48.	(d)	<u>Only ray florets</u>					
(*)		<u>with more than one</u>					
(+)	(e)	<u>color: distribution</u>					
		<u>of second color</u>					
PQ	at tip					1	
	distal 1/4				Salvador	2	
	distal 1/2					3	
	distal 3/4				Kiedahbasar	4	
	basal 3/4					5	
	basal 1/2				Papagaya	6	
	basal 1/4				Secret Glow	7	
	at base					8	
	on margin					9	
	on marginal zone					10	
	central lengthways zone				Famoso	11	
	widthways zone [band]				Fabula	12	
	throughout				Mick's Peppermint	13	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
49.	(d)	<u>Only ray florets</u>					
(*)		<u>with more than one</u>					
(+)	(e)	<u>color: pattern of</u>					
		<u>second color</u>					
PQ	solid or nearly so				Fabula, Secret Glow; Papagaya	1	
	flushed				Famoso, Salvador	2	
	diffuse stripes					3	
	clearly defined stripes					4	
	flecked					5	
	flecked and striped				Mick's Peppermint	6	
	mottled					7	
50.	(d)	<u>Only ray florets</u>					
(*)		<u>with more than two</u>					
	(e)	<u>colors: third color</u>					
		<u>of the inner side by</u>					
		<u>group</u>					
PQ	white					1	
	off-white					2	
	yellow					3	
	bronze					4	
	orange					5	
	orange-red					6	
	salmon					7	
	pink					8	
	red				D'Alaïs	9	
	red-purple				Oriental Dream; Fabula	10	
	purple				Secret Glow	11	
	violet					12	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
51.	(d) <u>Only ray florets</u>					
(*)	<u>with more than two</u>					
	(e) <u>colors: third color</u>					
	of the inner side					
	RHS Colour Chart (indicate reference number)					
52.	(d) <u>Only ray florets</u>					
(*)	<u>with more than two</u>					
(+)	(e) <u>colors: distribution</u>					
	of third color					
PQ	at tip					1
	distal 1/4				Secret Glow	2
	distal 1/2					3
	distal 3/4					4
	basal 3/4					5
	basal 1/2					6
	basal 1/4					7
	at base				Fabula	8
	on margin				Oriental Dream	9
	on marginal zone					10
	central lengthways zone					11
	widthways zone [band]					12
	throughout				D'Alaïs	13

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
53.	(d)					
(*)						
(+)	(e)					
PQ	solid or nearly so					1
	flushed				Secret Glow	2
	diffuse stripes					3
	clearly defined stripes					4
	flecked				D'Alaïs	5
	flecked and striped					6
	mottled					7
54.	(d)					
(*)						
PQ	similar				Secret Glow	1
	markedly different				Giraffe	2
55.	(d)					
PQ	RHS Colour Chart (indicate reference number)					
56.	(*)					
QN	small				Dark Desire	3
	medium				Bumble Rumble	5
	large				Scarlet Comet	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
57. (*)	<u>Only single, semi-double and collerette varieties:</u> disc: color before anther dehiscence					
PQ	whitish					1
	green					2
	yellow green				Salvador	3
	yellow					4
	orange				Kiedahlem	5
	red brown				Dark Desire	6
	purple brown					7
	brown					8
	purple black					9
	brown black					10
58.	<u>Single, semi-double and collerette varieties only:</u> disc: color at anther dehiscence					
PQ	whitish					1
	green					2
	yellow green					3
	yellow				Salvador	4
	orange				Kiedahlem	5
	red brown					6
	purple brown					7
	brown					8
	purple black					9
	brown black					10

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
59. (*)	<u>Only anemone flowered varieties :</u> disc florets: color				
PQ	RHS Colour Chart (indicate reference number)				
60. (*)	<u>Only collerette varieties: collar segments: color</u>				
PQ	RHS Colour Chart (indicate reference number)				

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

Unless otherwise indicated, all characteristics should be examined 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) Leaf characteristics are recorded on typical leaves taken from the middle third of the stem, and are recorded on the whole leaf regardless of the number of leaflets, looking at the upper surface.
- (b) Leaflet characteristics are recorded on the whole leaf for simple leaves, and on the terminal leaflet for compound leaves.
- (c) Ray floret length and width characteristic should be observed on the outermost row of ray florets.
- (d) In all but single flowered varieties, all ray floret characteristics, other than length and width characteristics (see note (c)), should be observed on the most typical florets, excluding the innermost and outermost rows, unless otherwise stated.
- (e) In single colored ray florets the first color will be the only color. In ray florets where there is more than one color, the first color is defined as the palest color on the floret, regardless of the surface area covered. The second color is the second palest, regardless of the surface area covered, and the third color is the third palest, regardless of the surface area covered.

For example, if the ray floret is mainly purple, with white in the distal quarter, the first color would be white (characteristic 44, state 1), and the second color would be purple (characteristic 46, state 11), distributed in the basal three quarters (characteristic 48, state 5) in a solid pattern (characteristic 49, state 1).

If the ray floret is yellow, with a pattern of red stripes and flecks, the first color would be yellow (characteristic 44, state 3), the second color would be red (characteristic 46, state 9), distributed throughout (characteristic 48, state 13), in a flecked and striped pattern (characteristic 49, state 6).

8.2 Explanations for individual characteristics

Ad. 1: Plant: growth habit



1
upright



2
semi-upright



3
rounded



4
spreading

Ad. 3: Stem: color

The stem color should be observed on the middle third of the stem (the stem excludes the peduncle).

Ad. 4: Leaf: type

Within each plant of a Dahlia variety, it is common to find a number of different leaf types. The predominant type should be recorded.



1
simple

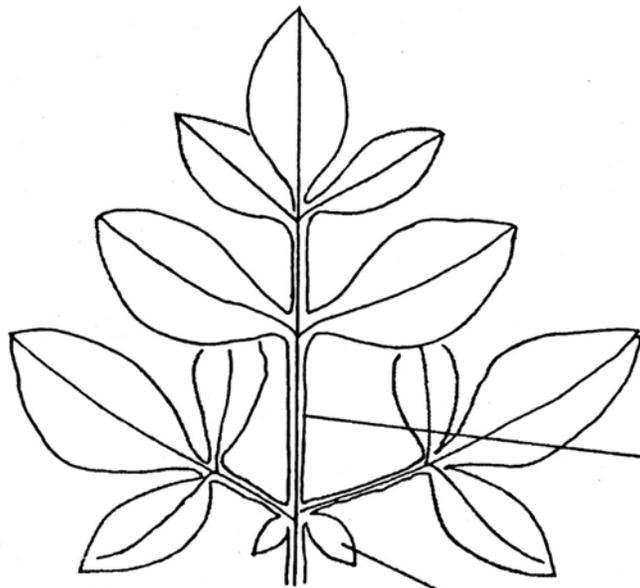


2
pinnate



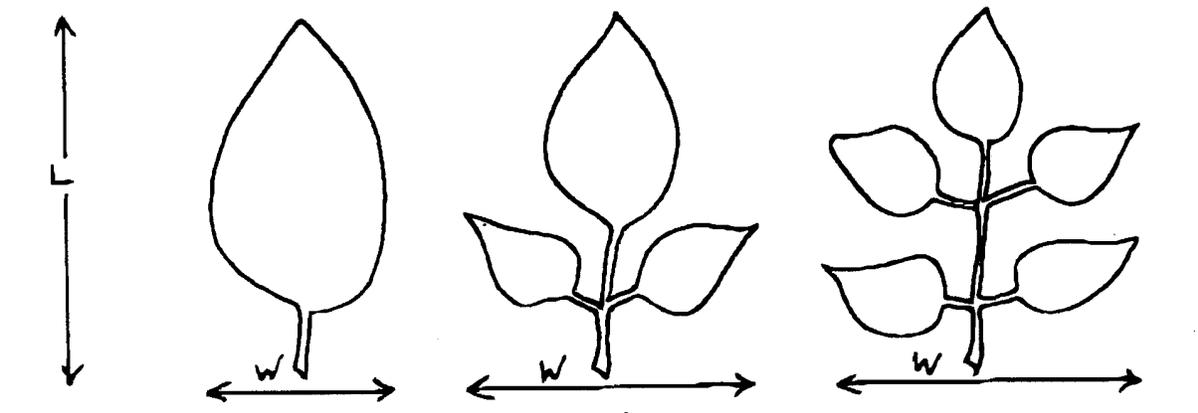
3
bipinnate

Ad 5: Leaf : wing



New illustration to be provided.

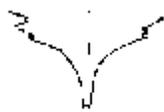
Ad 6 and 7: Leaf length and width



Ad 14: Leaflet: shape of base



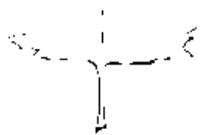
1
acute



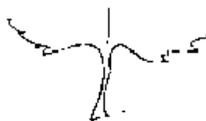
2
obtuse



3
rounded



4
truncate

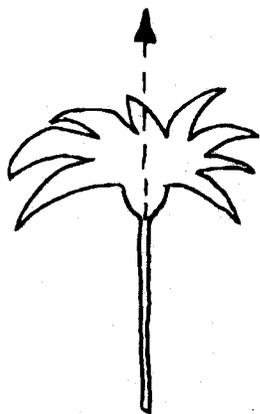


5
cordate

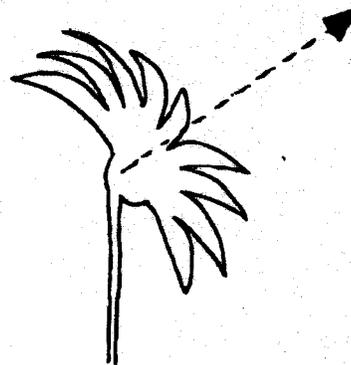


6
asymmetric

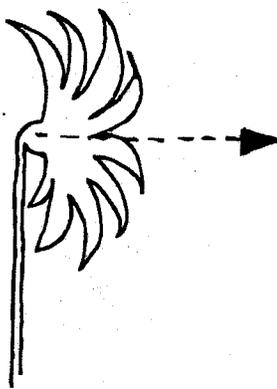
Ad 20: Flower head: attitude



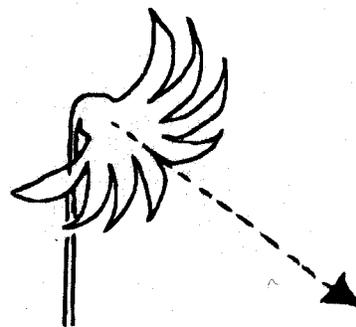
1
upright



3
semi upright



5
horizontal



7
nodding

Ad. 21: Flower head: type

1. single: flower heads with one row of ray florets, and a clearly defined central disc which is always visible.
2. semi double: flower heads with more than one row of ray florets, and a clearly defined central disc which is always visible.
3. daisy-eyed double: double flower heads where a disc is not visible in the early stages of flowering, but can be seen as the flower head opens fully. The disc is not always clearly defined.
4. double: double flower heads where a disc is not visible at any stage of flowering.



1
single



2
semi double



3
daisy eyed double



4
double

Ad. 22: Only flower head type: single and semi double: flower head: disc type



1
daisy



2
anemone

Ad. 23: Flower head: collar segments



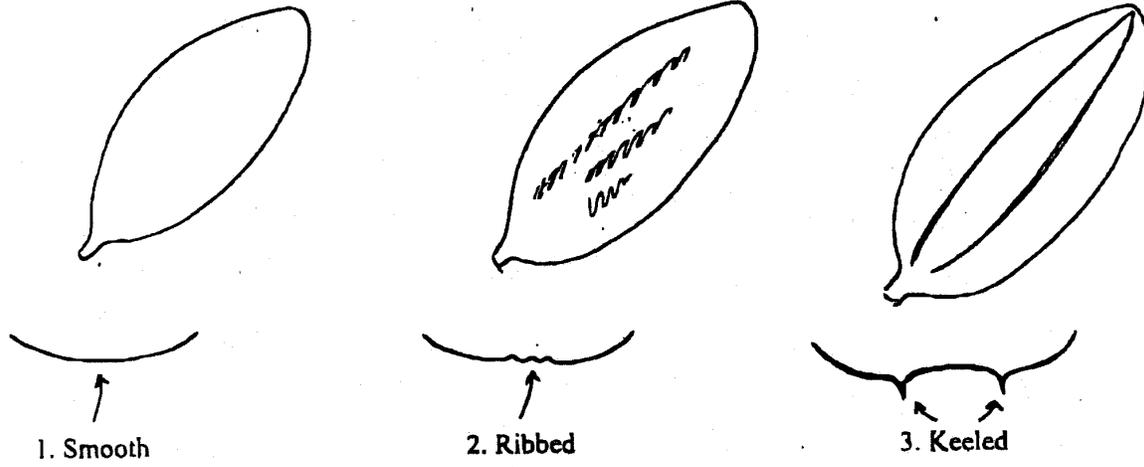
1
absent



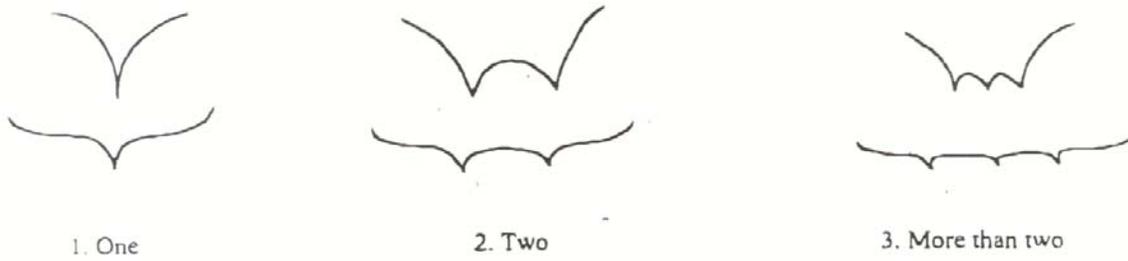
9
present (collerette type)

Ad. 32: Ray floret: upper surface

As seen from above (top row) and in profile (bottom row):



Ad. 33: Only keeled florets: ray floret: number of keels



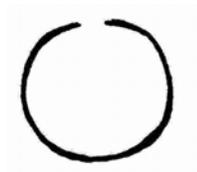
As seen in profile

Ad. 34: Ray floret: profile in cross section at mid point

Ad. 35: Ray floret: profile in cross section at $\frac{3}{4}$ point, if different



1
strongly concave
with margins
overlapping



2
strongly concave
with margins
touching



3
strongly concave



4
moderately concave



5
weakly concave



6
flat



7
weakly convex



8
moderately convex



9
strongly convex



10
strongly convex with
margins touching



11
strongly convex with
margins overlapping

Ad. 36: Ray floret: rolling of margin



1
strongly involute



2
moderately involute



3
weakly involute



4
flat (not rolled)



5
weakly revolute



6
moderately revolute

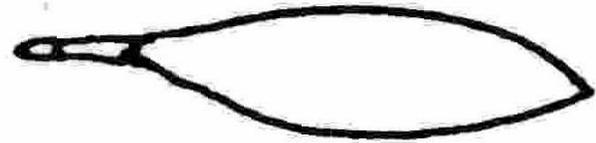


7
strongly revolute

Ad. 38: Ray floret: longitudinal axis



1
incurving

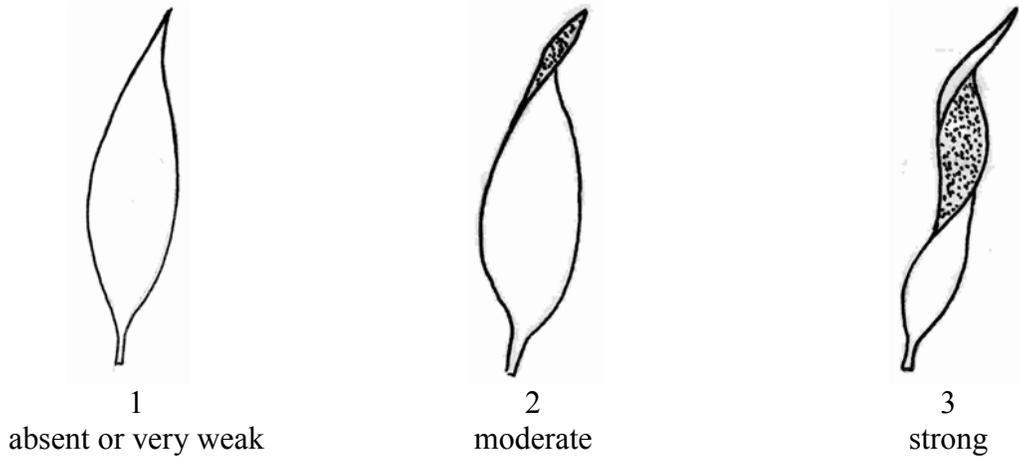


2
straight



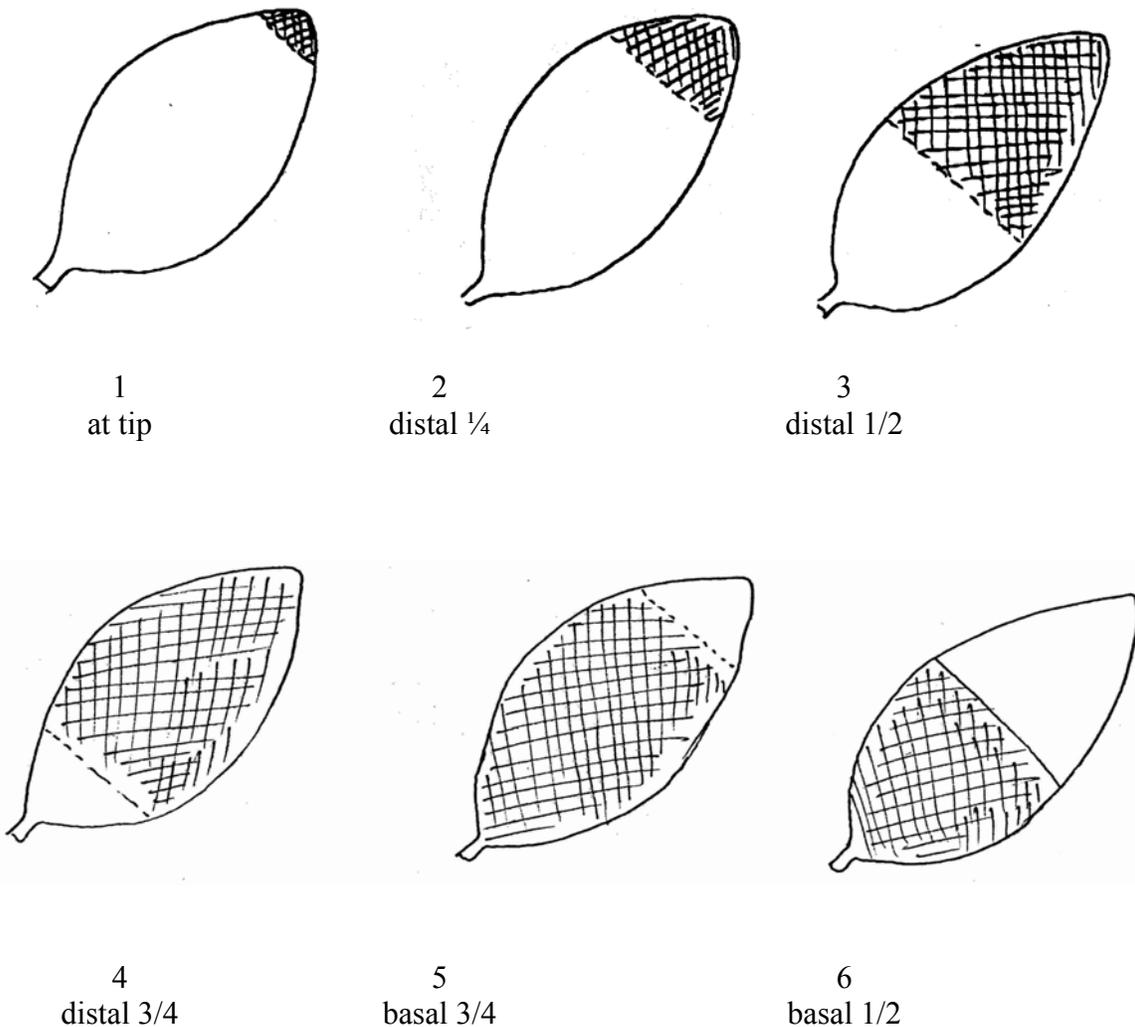
3
reflexing

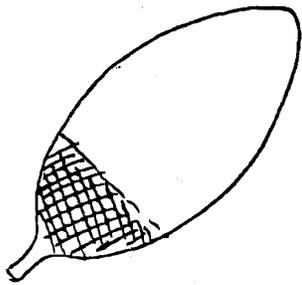
Ad. 41: Ray floret: twisting



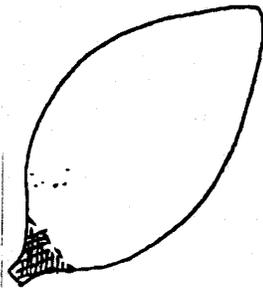
Ad. 48: Only ray floret with more than one color: distribution of second color

Ad. 52: Only ray floret with more than two colors: distribution of third color

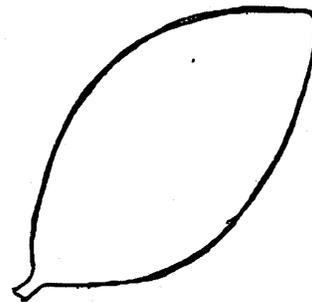




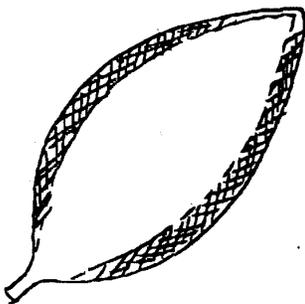
7
basal 1/4



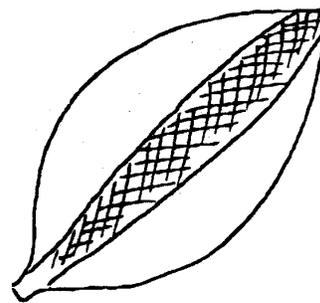
8
base



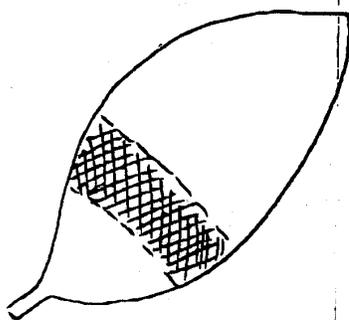
9
on margin



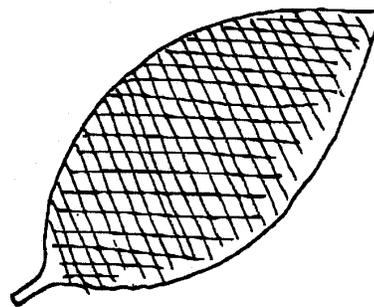
10
marginal zone



11
central lengthways zone



12
widthways zone [band]



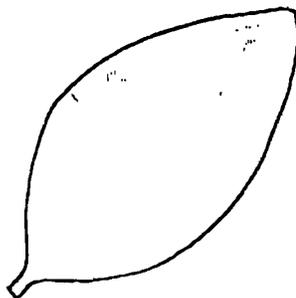
13
throughout

Ad. 49: Only ray florets with more than one color: pattern of second color

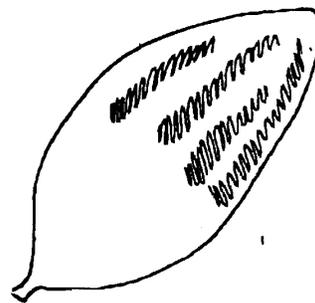
Ad 53: Only ray florets with more than two colors: pattern of third color



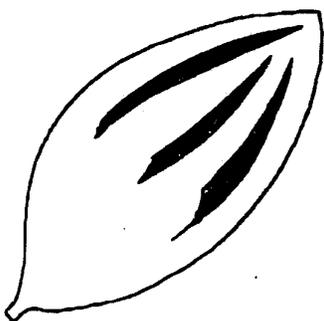
1
solid or nearly so



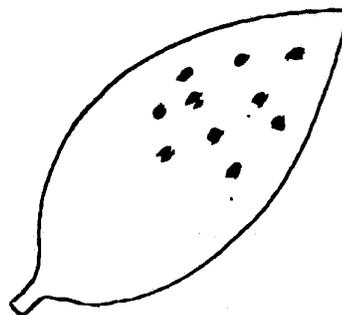
2
flushed



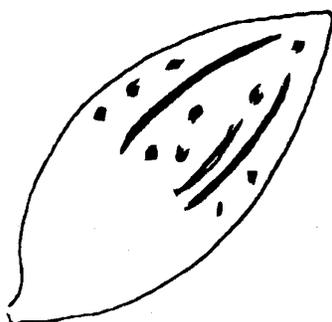
3
diffuse stripes



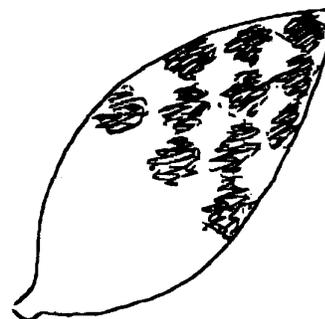
4
clearly defined stripes



5
flecked



6
flecked and striped



7
mottled

9. Literature

Collins, Ted, 2001: "The New Plant Library - Dahlias", Anness Publishing Ltd, London, UK

Collins, Ted, 2003: "Dahlias - A Colour Guide", The Crowood Press Ltd, Marlborough, UK

McClaren, Bill, 2004: "Encyclopedia of Dahlias", Timber Press, Portland, US

Rowlands, Gareth, 1999: "The Gardeners Guide to Growing Dahlias", David and Charles Publishers, Devon, UK

The Royal Horticultural Society 1969 - 2005: "The International Dahlia Register (1969) and supplements", The Royal Horticultural Society, London, UK

The Royal Horticultural Society 1992: "The New RHS Dictionary Index of Gardening", Macmillan Press, London, UK

The Royal Horticultural Society, 1994: "The New RHS Dictionary Index of Garden Plants", Macmillan Press, London, UK

The Royal Horticultural Society, 1998: "A-Z Encyclopedia of Garden Plants", Dorling Kindersley, London, UK

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 Botanical name	<input type="text" value="Dahlia Cav."/>	
1.2 Common name	<input type="text" value="Dahlia"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
Telephone No.	<input type="text"/>	
Fax No.	<input type="text"/>	
E-mail address	<input type="text"/>	
Breeder (if different from applicant)	<input type="text"/>	
3. Proposed denomination and breeder's reference		
Proposed denomination (if available)	<input type="text"/>	
Breeder's reference	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
#4. Information on the breeding scheme and propagation of the variety		
4.1 <u>Breeding scheme</u>		
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 <u>Method of propagating the variety</u>		
4.2.1 Vegetative propagation		
(a) cuttings	[]	
(b) tubers	[]	
(c) <i>in vitro</i> propagation	[]	
(d) other (state method)	[]	
4.2.2 Seed (please provide details)	[]	
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.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
<p>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).</p>			
Characteristics	Example Varieties	Note	
5.1 Plant: height (2)			
short	Gallery Rubens	3 []	
medium	Dark Desire	5 []	
tall	Hot Chocolate	7 []	
5.2 Leaf: color (9)			
light green	Rio	1 []	
medium green	Red Fox	2 []	
dark green	Frisolous Glow	3 []	
green tinged with brownish red	City of Rotterdam	4 []	
green tinged with purple	Passion	5 []	
brownish red	Nippon	6 []	
purple	Tesor	7 []	
5.3 Flower head: type (21)			
single	Dark Desire	1 []	
semi double	Bishop of Llandaff	2 []	
daisy-eyed double	Carolina Orange	3 []	
double	Passion	4 []	
5.3 <u>Only flower head type: single and semi-double:</u> flower head: disc type (22)			
daisy	Dark Desire	1 []	
anemone	Scarlet Comet	2 []	

TECHNICAL QUESTIONNAIRE		Page {x} of {y}	Reference Number:
Characteristics		Example Varieties	Note
5.6	Flower head: diameter		
(25)			
	small	Jaimaica	3 []
	medium	Passion	5 []
	large		7 []
5.7	Ray floret: number of colors of the inner side		
(43)			
	one	Red Fox	1 []
	two	Papagaya	2 []
	more than two	Secret Glow	3 []
5.8	Ray floret: first or only color of the inner side by group (if there is more than one color, the first color is defined as the palest, regardless of area)		
(44)			
	white	Secret Glow, Papagaya	1 []
	off white	Bounty	2 []
	yellow	Salvador	3 []
	bronze		4 []
	orange	Kiedahboa	5 []
	orange red	Carolina Orange	6 []
	salmon		7 []
	pink	Gallery Bellini	8 []
	red	Red Fox	9 []
	red purple	Hot Chocolate	10 []
	purple	Olinda	11 []
	violet		12 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
	Characteristics	Example Varieties	Note
5.9 (46)	Only ray florets with more than one color: second color of the inner side by group (the second color is defined as the next palest, regardless of area)		
	white		1 []
	off white		2 []
	yellow	Secret Glow	3 []
	bronze		4 []
	orange		5 []
	orange red		6 []
	salmon	Salvador	7 []
	pink		8 []
	red	Papagaya	9 []
	red purple	Kiedahbasar	10 []
	purple	Fabula, Famoso	11 []
	violet		12 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
<p>6. Similar varieties and differences from these varieties</p> <p><i>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.</i></p>			
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
<i>Example</i>	<i>Flowerhead: diameter</i>	<i>small</i>	<i>medium</i>
<p>Comments:</p>			

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 Are there any special conditions for growing the variety or conducting the examination?		
Yes [] No []		
(If yes, please provide details)		
7.3 Main use of the variety		
(a) pot plant []		
(b) garden plant []		
(c) cut flower []		
(d) other []		
(please provide details)		
7.4 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.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:												
<p>8. Authorization for release</p> <p>(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?</p> <p style="text-align: center;">Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>(b) Has such authorization been obtained?</p> <p style="text-align: center;">Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If the answer to (b) is yes, please attach a copy of the authorization.</p>														
<p>9. Information on plant material to be examined or submitted for examination.</p> <p>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.</p> <p>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:</p> <table style="width: 100%; border: none;"><tr><td style="width: 70%;">(a) Microorganisms (e.g. virus, bacteria, phytoplasma)</td><td style="width: 15%;">Yes <input type="checkbox"/></td><td style="width: 15%;">No <input type="checkbox"/></td></tr><tr><td>(b) Chemical treatment (e.g. growth retardant, pesticide)</td><td>Yes <input type="checkbox"/></td><td>No <input type="checkbox"/></td></tr><tr><td>(c) Tissue culture</td><td>Yes <input type="checkbox"/></td><td>No <input type="checkbox"/></td></tr><tr><td>(d) Other factors</td><td>Yes <input type="checkbox"/></td><td>No <input type="checkbox"/></td></tr></table> <p>Please provide details for where you have indicated "yes".</p> <p>.....</p>			(a) Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	(b) Chemical treatment (e.g. growth retardant, pesticide)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	(c) Tissue culture	Yes <input type="checkbox"/>	No <input type="checkbox"/>	(d) Other factors	Yes <input type="checkbox"/>	No <input type="checkbox"/>
(a) Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes <input type="checkbox"/>	No <input type="checkbox"/>												
(b) Chemical treatment (e.g. growth retardant, pesticide)	Yes <input type="checkbox"/>	No <input type="checkbox"/>												
(c) Tissue culture	Yes <input type="checkbox"/>	No <input type="checkbox"/>												
(d) Other factors	Yes <input type="checkbox"/>	No <input type="checkbox"/>												
<p>10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:</p> <p>Applicant's name <input style="width: 500px; height: 20px;" type="text"/></p> <p>Signature <input style="width: 300px; height: 20px;" type="text"/> Date <input style="width: 150px; height: 20px;" type="text"/></p>														