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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

COSMOS

UPOV Code: COSMO

Cosmos Cav.

[*]

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from Japan

to be considered by the

Enlarged Editorial Committee at its meeting
to be held in Geneva, on January 7 and 8, 2015

Disclaimer: this document does not represent UPOV policies or guidance

Alternative Names:[*]

Botanical name	*English*	*French*	*German*	*Spanish*
Cosmos Cav.	Cosmos	Cosmos	Kosmee, Schmuckkörbchen	Cosmos, Mirasol

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 *Cosmos* 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 seeds or young plants.

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

seed-propagated varieties: sufficient seeds to produce 50 plants;
vegetatively propagated varieties: 10 young plants.

In the case of seed, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.

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.

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. The color chart and version used should be specified in the variety description.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 50 plants for seed propagated varieties or 10 plants for vegetatively propagated varieties.

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 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.

4.1.4 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants for seed propagated varieties or 9 plants or parts taken from each of 9 plants for vegetatively propagated varieties and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation of characteristics”):

MG: single measurement of a group of plants or parts of plants
MS: measurement of a number of individual plants or parts of plants
VG: visual assessment by a single observation of a group of plants or parts of plants
VS: visual assessment by observation of individual plants or parts of plants

Type of observation: visual (V) or measurement (M)

“Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 Uniformity

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:

(a) seed-propagated varieties

The assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the General Introduction.

(b) vegetatively propagated varieties

For the assessment of uniformity, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 10 plants, 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 further examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial 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) Flower head: disc type (characteristic 13)
(b) Flower head: collar segments (characteristic 14)
(c) Ray floret: type (characteristic 19)
(d) Ray floret: main color of inner side (characteristic 25) with the following color groups:
- Gr. 1: white
- Gr. 2: yellow
- Gr. 3: orange
- Gr. 4: pink
- Gr. 5: red
- Gr. 6: purple red
- Gr. 7: brown red

(e) Ray floret: secondary color of inner side (characteristic 26) with the following color groups:
Gr. 1: white
Gr. 2: yellow
Gr. 3: orange
Gr. 4: pink
Gr. 5: red
Gr. 6: purple red
Gr. 7: brown red

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

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

6.2.1 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.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	Note
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	Note
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 “Development of Test Guidelines”.

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

MG, MS, VG, VS – see Chapter 4.1.5

(a)-(c) 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. **(+)**	**VG**	**Plant: growth habit**	**Plante : type de croissance**	**Pflanze: Wuchsform**	**Planta: porte**		
QN		upright	dressé	aufrecht	erecto		1
		semi upright	demi-dressé	halbaufrecht	semierecto		2
		spreading	étalé	breitwüchsig	extendido		3
2. **(*)**	**VG/ MS**	**Plant: height**	**Plante : hauteur**	**Pflanze: Höhe**	**Planta: altura**		
QN		short	basse	niedrig	baja	Sunny Yellow	3
		medium	moyenne	mittel	media	Sunset	5
		tall	haute	hoch	alta	Sensation Radiance	7
3. **(+)**	**VG/ MS**	**Stem: number of primary branches**	**Tige : nombre de ramifications primaires**	**Stengel: Anzahl Seitentriebe erster Ordnung**	**Tallo: número de ramas primarias**		
QN		few	petit	gering	bajo	Sunset	3
		medium	moyen	mittel	medio		5
		many	grand	groß	alto	Sensation Radiance	7
4. **(*)**	**VG**	**Stem: anthocyanin coloration**	**Tige : pigmentation anthocyanique**	**Stengel: Anthocyanfärbung**	**Tallo: pigmentación antociánica**		
QN		absent or very weak	absente ou très faible	fehlend oder sehr schwach	ausente o muy débil	Sunny Yellow	1
		weak	faible	schwach	débil	Sunrise	2
		medium	moyenne	mittel	media	Sunset	3
		strong	forte	stark	intensa		4
5.	**VG**	**Stem: pubescence**	**Tige : pubescence**	**Stengel: Behaarung**	**Tallo: pubescencia**		
QN		absent or sparse	absente ou clairsemée	fehlend oder dünn	ausente o laxa	Sunrise	1
		medium	moyenne	mittel	media	Orange Flare	2
		dense	dense	dicht	densa		3
6. **(*)** **(+)**	**VG/ MS**	**Leaf: length**	**Feuille : longueur**	**Blatt: Länge**	**Hoja: longitud**		
QN	**(a)**	short	courte	kurz	corta	Sunrise	3
		medium	moyenne	mittel	media	Sensation Radiance	5
		long	longue	lang	larga		7
7. **(*)** **(+)**	**VG/ MS**	**Leaf: width**	**Feuille : largeur**	**Blatt: Breite**	**Hoja: anchura**		
QN	**(a)**	narrow	étroite	schmal	estrecha	Sunrise	3
		medium	moyenne	mittel	media	Orange Flare	5
		broad	large	breit	ancha	Sensation Radiance	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
8.	**VG**	**Leaf: intensity of green color**	**Feuille : intensité de la couleur verte**	**Blatt: Intensität der Grünfärbung**	**Hoja: intensidad del color verde**		
QN	**(a)**	light	claire	hell	claro		1
		medium	moyenne	mittel	medio	Sunset	2
		dark	foncée	dunkel	oscuro	Orange Flare	3
9.	**VG**	**Leaf: number of lobes**	**Feuille : nombre de lobes**	**Blatt: Anzahl Lappen**	**Hoja: número de lóbulos**		
(+)							
QN	**(a)**	absent or very few	nul ou très petit	fehlend oder sehr gering	ninguno o muy bajo		1
		few	petit	gering	bajo		2
		medium	moyen	mittel	medio		3
		many	grand	hoch	alto		4
		very many	très grand	sehr hoch	muy alto		5
10.	**VG/ MS**	**Leaf: width of terminal lobe (if present)**	**Feuille : largeur du lobe terminal (le cas échéant)**	**Blatt: Breite des terminalen Lappens (falls vorhanden)**	**Hoja: anchura del lóbulo terminal (en caso de estar presente)**		
(+)							
QN	**(a)**	narrow	étroit	schmal	estrecho	Sunny Yellow	3
		medium	moyen	mittel	medio	Sunrise	5
		broad	large	breit	ancho		7
11.	**VG/ MS**	**Peduncle: length**	**Pédoncule : longueur**	**Blütenstiel: Länge**	**Pedúnculo: longitud**		
QN		short	court	kurz	corto	Sunny Yellow	3
		medium	moyen	mittel	medio	Sunrise	5
		long	long	lang	largo	Sunset	7
12.	**VG**	**Flower head: attitude**	**Capitule : port**	**Blütenkopf: Haltung**	**Capítulo: porte**		
(+)							
QN		upwards	vers le haut	aufwärts gerichtet	ascendente		1
		outwards	vers l'extérieur	abstehend	orientado hacia el exterior		2
		downwards	vers le bas	abwärts gerichtet	orientado hacia abajo		3
13. **(*)** **(+)**	**VG**	**Flower head: disc type**	**Capitule : type de disque**	**Blütenkopf: Scheibentyp**	**Capítulo: tipo de disco**		
QL		daisy	marguerite	Margarite	margarita		1
		anemone	anémone	Anemone	anémona	Bridal Bouquet COS	2
14. **(*)** **(+)**	**VG**	**Flower head: collar segments**	**Capitule : segments de collerette**	**Blütenkopf: Kragensegmente**	**Capítulo: segmentos del collar**		
QL		absent	absents	fehlend	ausentes		1
		present	présents	vorhanden	presentes	Red Illusion	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15. (*) (+)	**VG/ MS**	**Flower head: number of ray florets**	**Capitule : nombre de fleurons**	**Blütenkopf: Anzahl Zungenblüten**	**Capítulo: número de flores liguladas**		
QN		very few	très petit	sehr gering	muy bajo		1
		few	petit	gering	bajo	Sunset	2
		medium	moyen	mittel	medio		3
		many	grand	hoch	alto	Double Click	4
		very many	très grand	sehr hoch	muy alto		5
16. (*) (+)	**VG/ MS**	**Flower head: diameter**	**Capitule : diamètre**	**Blütenkopf: Durchmesser**	**Capítulo: diámetro**		
QN		small	petit	klein	pequeño	Sunrise	3
		medium	moyen	mittel	medio		5
		large	grand	groß	grande	Sensation Radiance	7
17. (+)	**VG/ MS**	**Flower head: disc diameter**	**Capitule : diamètre du disque**	**Blütenkopf: Scheiben-durchmesser**	**Capítulo: diámetro del disco**		
QN		very small	très petit	sehr klein	muy pequeño		1
		small	petit	klein	pequeño	Sensation Radiance	2
		medium	moyen	mittel	medio		3
		large	grand	groß	grande	Bridal Bouquet COS	4
		very large	très grand	sehr groß	muy grande		5
18. (*) (+)	**VG/ MS**	**Flower head: disc diameter relative to flower head diameter**	**Capitule : diamètre du disque par rapport au diamètre du capitule**	**Blütenkopf: Scheiben-durchmesser im Verhältnis zum Durchmesser des Blütenkopfs**	**Capítulo: diámetro del disco con respecto al diámetro del capítulo**		
QN		very small	très petit	sehr klein	muy pequeño		1
		small	petit	klein	pequeño	Sensation Radiance	2
		medium	moyen	mittel	medio		3
		large	grand	groß	grande	Bridal Bouquet COS	4
		very large	très grand	sehr groß	muy grande		5
19. (*) (+)	**VG**	**Ray floret: type**	**Fleuron : type**	**Zungenblüte: Typ**	**Flor ligulada: tipo**		
PQ		ligulate	ligulé	zungenförmig	loriforme		1
		ligulate and tubular	ligulé et tubulaire	zungenförmig und röhrenförmig	loriforme y tubular		2
		tubular	tubulaire	röhrenförmig	tubular		3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20. **(+)**	**VG**	**Ray floret: longitudinal axis**	**Fleuron : axe longitudinal**	**Zungenblüte: Längsachse**	**Flor ligulada: eje longitudinal**		
QN	**(b)**	strongly incurved	fortement incurvé	stark aufgebogen	muy incurvado		1
		moderately incurved	moyennement incurvé	mäßig aufgebogen	moderadamente incurvado		2
		weakly incurved	faiblement incurvé	schwach aufgebogen	débilmente incurvado		3
		straight	droit	gerade	recto		4
		weakly reflexed	faiblement réfléchi	schwach zurückgebogen	débilmente reflexo		5
		moderately reflexed	moyennement réfléchi	mäßig zurückgebogen	moderadamente reflexo		6
		strongly reflexed	fortement réfléchi	stark zurückgebogen	muy reflexo		7
21. **(+)**	**VG**	**Ray floret: curved part of axis**	**Fleuron : partie incurvée de l'axe**	**Zungenblüte: gebogener Teil der Achse**	**Flor ligulada: parte curvada del eje**		
PQ	**(b)**	none	aucune	keiner	ninguna		1
		tip	extrémité	Spitze	extremo		2
		distal half	moitié distale	distale Hälfte	mitad distal		3
		distal three quarters	trois quarts distaux	distale Dreiviertel	tres cuartos distales		4
		entire length	longueur toute entière	gesamte Länge	totalidad		5
22. **(*)** **(+)**	**VG/ MS**	**Ray floret: length**	**Fleuron : longueur**	**Zungenblüte: Länge**	**Flor ligulada: longitud**		
QN	**(b)**	short	court	kurz	corta	Sunset	3
		medium	moyen	mittel	media		5
		long	long	lang	larga	Sensation Radiance	7
23. **(*)** **(+)**	**VG/ MS**	**Ray floret: width**	**Fleuron : largeur**	**Zungenblüte: Breite**	**Flor ligulada: anchura**		
QN	**(b)**	narrow	étroit	schmal	estrecha	Sunset	3
		medium	moyen	mittel	media	Sensation Radiance	5
		broad	large	breit	ancha		7
24. **(*)** **(+)**	**VG/ MS**	**Ray floret: ratio length/width**	**Fleuron : rapport longueur/largeur**	**Zungenblüte: Verhältnis Länge/Breite**	**Flor ligulada: relación longitud/anchura**		
QN	**(b)**	low	bas	klein	baja		3
		medium	moyen	mittel	media	Sensation Radiance	5
		high	élevé	groß	alta	Happy Ring	7
25. **(*)**	**VG**	**Ray floret: main color of inner side**	**Fleuron : couleur principale de la face interne**	**Zungenblüte: Hauptfarbe der Innenseite**	**Flor ligulada: color principal de la cara interna**		
PQ	**(b)** **(c)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26. (*)	**VG**	**Ray floret: secondary color of inner side**	**Fleuron : couleur secondaire de la face interne**	**Zungenblüte: Sekundärfarbe der Innenseite**	**Flor ligulada: color secundario de la cara interna**		
PQ	**(b) (c)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
27. (*) (+)	**VG**	**Ray floret: distribution of secondary color of inner side**	**Fleuron : distribution de la couleur secondaire de la face interne**	**Zungenblüte: Verteilung der Sekundärfarbe der Innenseite**	**Flor ligulada: distribución del color secundario en la cara interna**		
PQ	**(b)**	none	aucune	keine	inexistente		1
	(c)	basal zone	zone basale	basale Zone	zona basal		2
		basal quarter	quart basal	basales Viertel	cuarto basal		3
		basal half	moitié basale	basale Hälfte	mitad basal		4
		distal half	moitié distale	distale Hälfte	mitad distal		5
		distal quarter	quart distal	distales Viertel	cuarto distal		6
		tip	extrémité	Spitze	extremo		7
		band	bande	Band	banda		8
		marginal zone	zone marginale	Randzone	zona del borde		9
		central zone	zone centrale	Mittelzone	zona central		10
		throughout	partout	überall	totalidad		11
28.	**VG**	**Ray floret: pattern of secondary color of inner side**	**Fleuron : répartition de la couleur secondaire de la face interne**	**Zungenblüte: Verteilung der Sekundärfarbe der Innenseite**	**Flor ligulada: distribución del color secundario de la cara interna**		
PQ	**(b)**	solid or nearly solid	uniforme ou presque	ganzflächig oder fast ganzflächig	uniforme o casi uniforme		1
	(c)	flushed	traces diffuses	flächig	pátina		2
		striped	striée	gestreift	estriado		3
29.	**VG**	**Ray floret: tertiary color of inner side**	**Fleuron : couleur tertiaire de la face interne**	**Zungenblüte: Tertiärfarbe der Innenfarbe**	**Flor ligulada: color terciario de la cara interna**		
PQ	**(b) (c)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30. **(+)**	**VG**	**Ray floret: distribution of tertiary color of inner side**	**Fleuron : distribution de la couleur tertaire de la face interne**	**Zungenblüte: Verteilung der Tertiärfarbe der Innenfarbe**	**Flor ligulada: distribución del color terciario en la cara interna**		
PQ	**(b)**	none	aucune	keine	inexistente		1
	(c)	basal zone	zone basale	basale Zone	zona basal		2
		basal quarter	quart basal	basales Viertel	cuarto basal		3
		basal half	moitié basale	basale Hälfte	mitad basal		4
		distal half	moitié distale	distale Hälfte	mitad distal		5
		distal quarter	quart distal	distales Viertel	cuarto distal		6
		tip	extrémité	Spitze	extremo		7
		band	bande	Band	banda		8
		marginal zone	zone marginale	Randzone	zona del borde		9
		central zone	zone centrale	Mittelzone	zona central		10
		throughout	partout	überall	totalidad		11
31.	**VG**	**Ray floret: pattern of tertiary color of inner side**	**Fleuron : répartition de la couleur tertiaire de la face interne**	**Zungenblüte: Verteilung der Tertiärfarbe der Innenseite**	**Flor ligulada: distribución del color terciario de la cara interna**		
PQ	**(b)**	solid or nearly solid	uniforme ou presque	ganzflächig oder fast ganzflächig	uniforme o casi uniforme		1
	(c)	flushed	traces diffuses	flächig	pátina		2
		striped	striée	gestreift	estriado		3
32. **(*)**	**VG**	**Ray floret: main color of outer side**	**Fleuron : couleur principale de la face externe**	**Zungenblüte: Hauptfarbe der Außenseite**	**Flor ligulada: color principal de la cara externa**		
PQ	**(b)** **(c)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
33. **(*)** **(+)**	**VG**	**Ray floret: incisions of apex**	**Fleuron : incisions de l'apex**	**Zungenblüte: Einschnitte der Spitze**	**Flor ligulada: incisiones del ápice**		
QN	**(b)**	absent or very shallow	absentes ou très faibles	fehlend or sehr flach	ausentes o muy poco profundas		1
		shallow	faibles	flach	poco profundas		3
		medium	moyennes	mittel	de profundidad media	Sensation Radiance, Sunset	5
		deep	profondes	tief	profundas		7
34. **(*)** **(+)**	**VG**	**Disc: main color**	**Disque : couleur principale**	**Scheibe: Hauptfarbe**	**Disco: color principal**		
PQ		RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

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

(a) Observations on the leaf should be made on the leaves from the middle third of the stem.
(b) Observations on the ray floret should be made on the outermost row of ray florets.
(c) The main color is the color with the largest surface area, the secondary color is the color with the second largest surface area, and the tertiary color is the color with the third largest surface area. In cases where the area of the main and secondary colors are too similar to reliably decide which color has the largest area, the darkest color is considered to be the main color. In cases where the area of the secondary and tertiary colors are too similar to reliably decide which color has the second largest area, the darkest color is considered to be the secondary color.

8.2 Explanations for individual characteristics

Ad. 1: Plant: growth habit

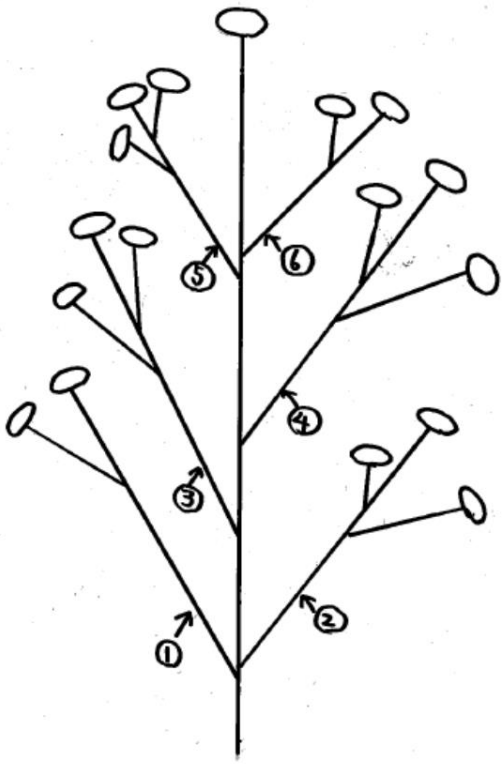
1
upright

2
semi upright

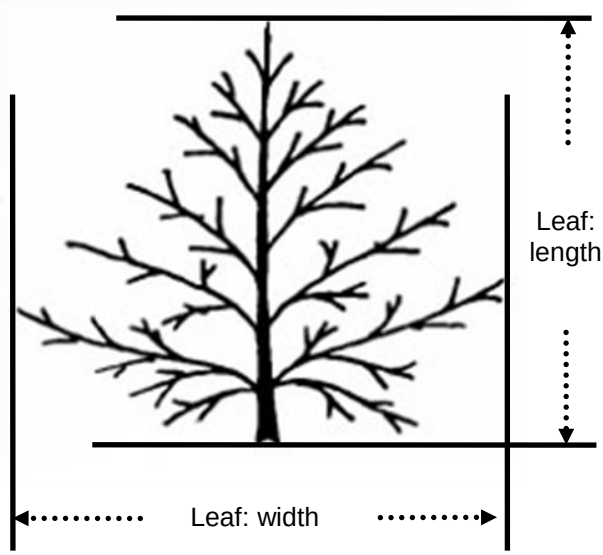
3
spreading

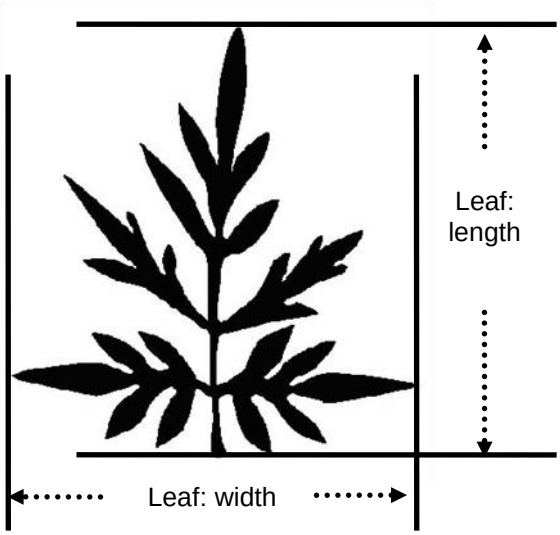
Ad. 3: Stem: number of primary branches

Primary branches should be observed on the branches indicated by arrow on the following diagram.



Ad. 6: Leaf: length
Ad. 7: Leaf: width

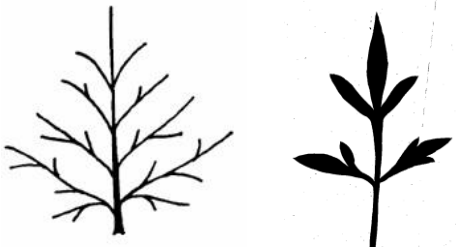




Ad. 9: Leaf: number of lobes

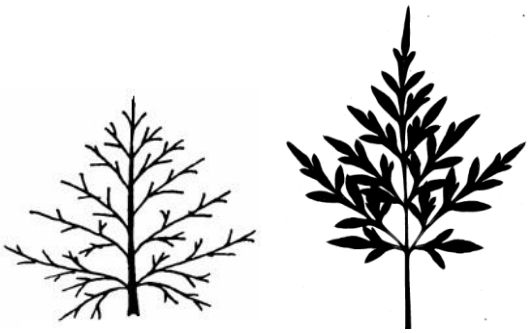
For varieties that are very polymorphic the observation should consider the most frequent number of lobes.

1
absent or very few



2
few

3
medium

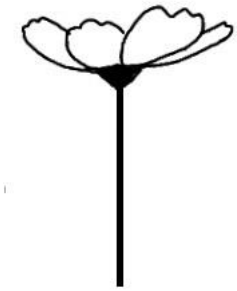


4
many

5
very many

Ad. 10: Leaf: width of terminal lobe (if present)

Ad. 12: Flower head: attitude

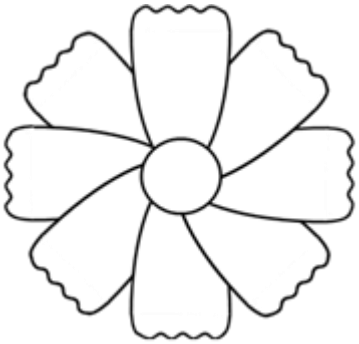


1
upwards

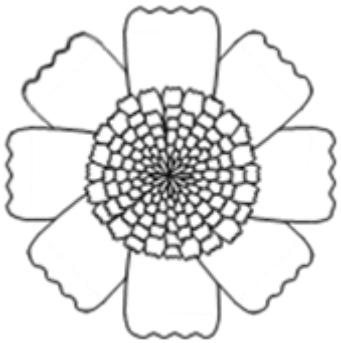
2
outwards

3
downwards

Ad. 13: Flower head: disc type

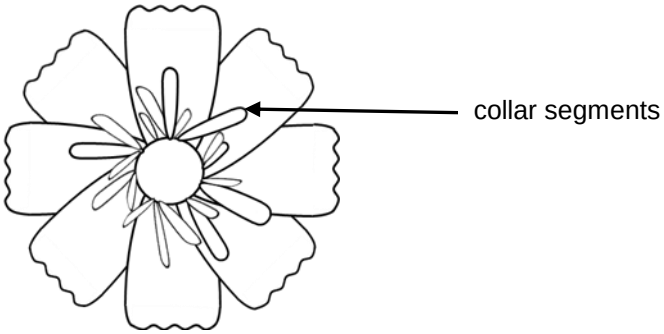


1
daisy



2
anemone

Ad. 14: Flower head: collar segments

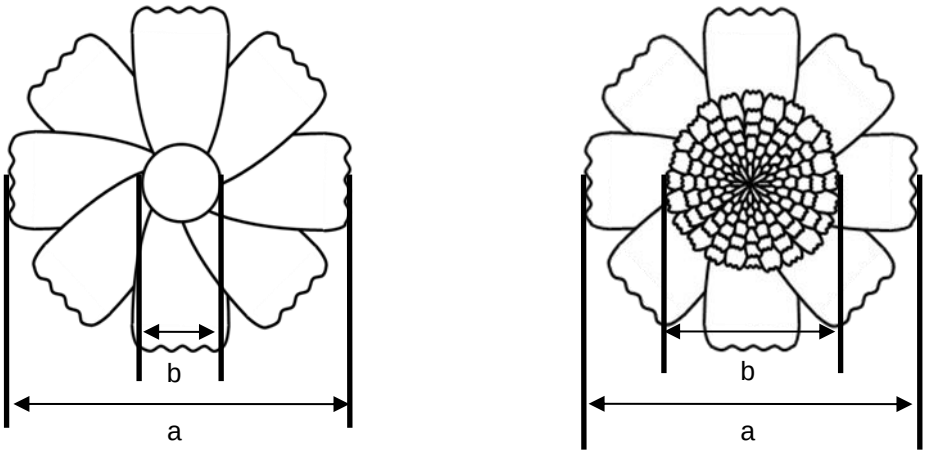


Ad. 15: Flower head: number of ray florets

In varieties with collar segments the number of ray florets should be observed excluding the collar segments.

Ad. 16: Flower head: diameter
Ad. 17: Flower head: disc diameter
Ad. 18: Flower head: disc diameter relative to flower head diameter

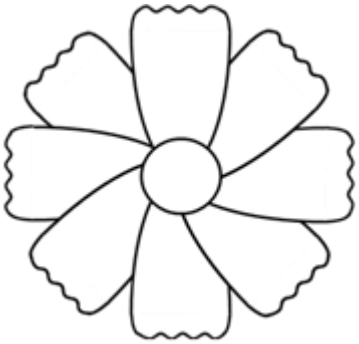
a: flower head diameter
b: disc diameter



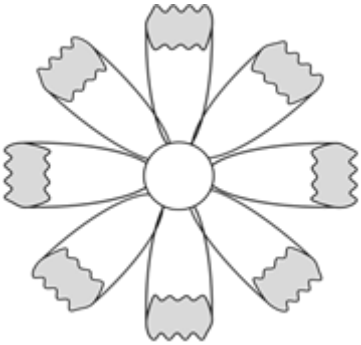
Ad. 17: Flower head: disc diameter

In varieties with collar segments the disc diameter should be observed excluding the collar segments.

Ad. 19: Ray floret: type

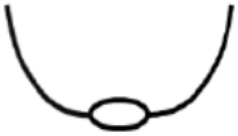


1
ligulate

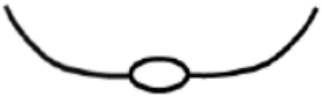


3
tubular

Ad. 20: Ray floret: longitudinal axis



1
strongly incurved

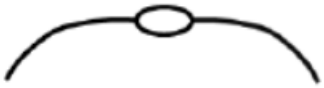


2
moderately incurved

3
weakly incurved

4
straight

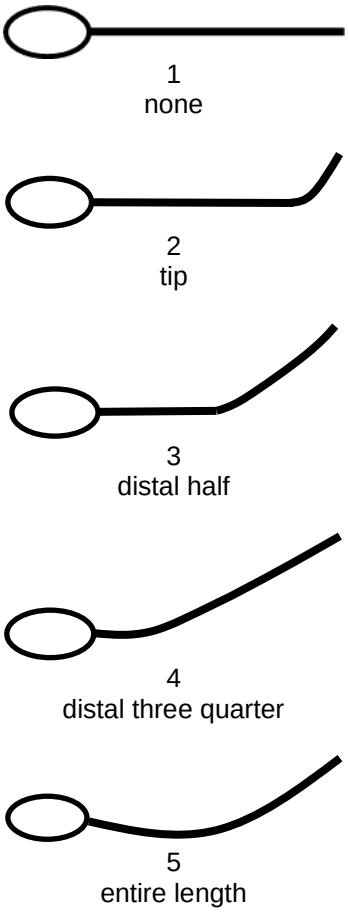
5
weakly reflexed



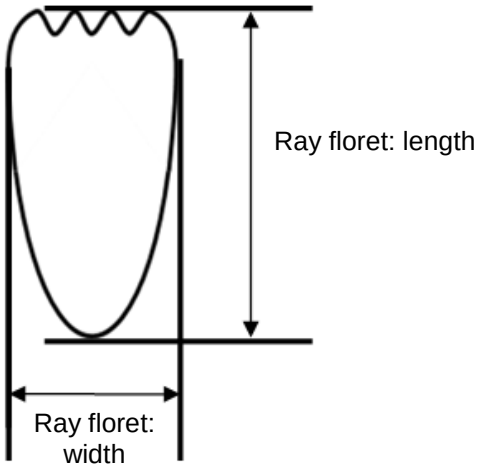
6
moderately reflexed

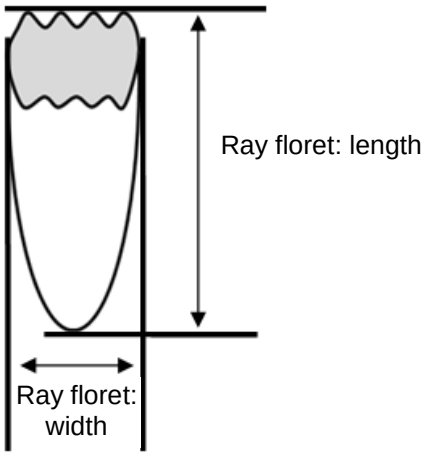
7
strongly refelxed

Ad. 21: Ray floret: curved part of axis

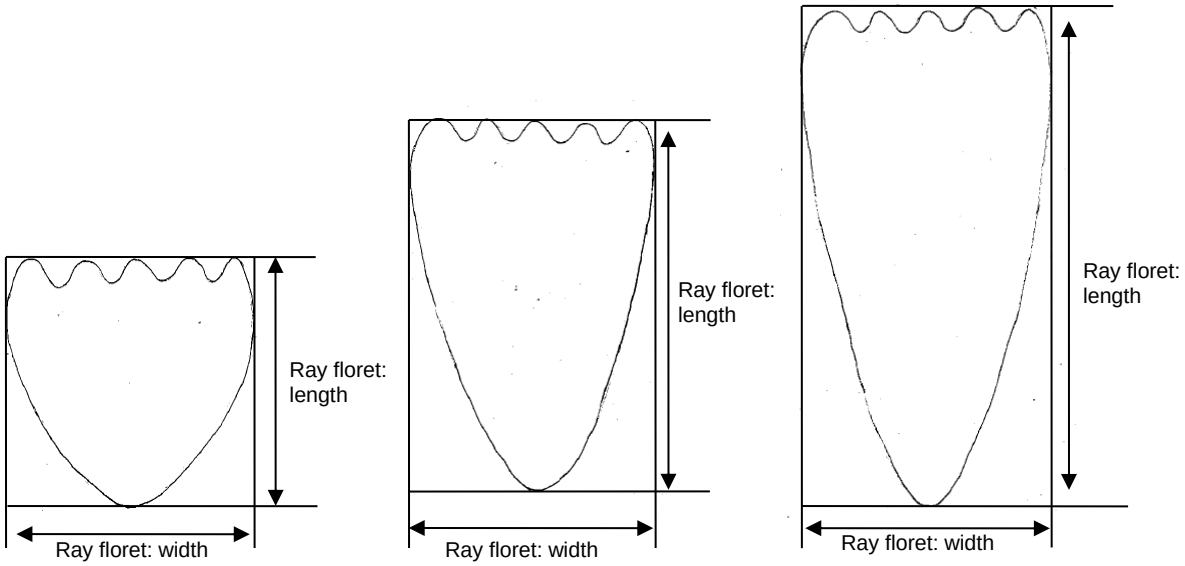


Ad. 22: Ray floret: length
Ad. 23: Ray floret: width





Ad. 24: Ray floret: ratio length/width

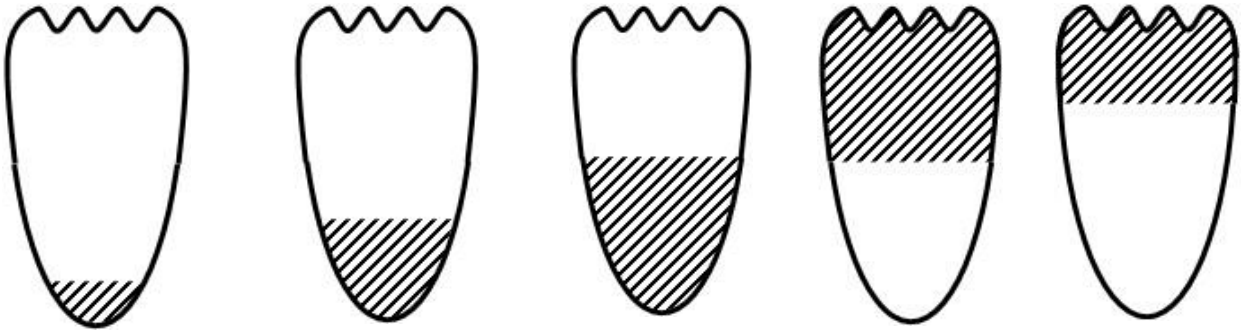


3
low

5
medium

7
high

Ad. 27: Ray floret: distribution of secondary color of inner side
Ad. 30: Ray floret: distribution of tertiary color of inner side



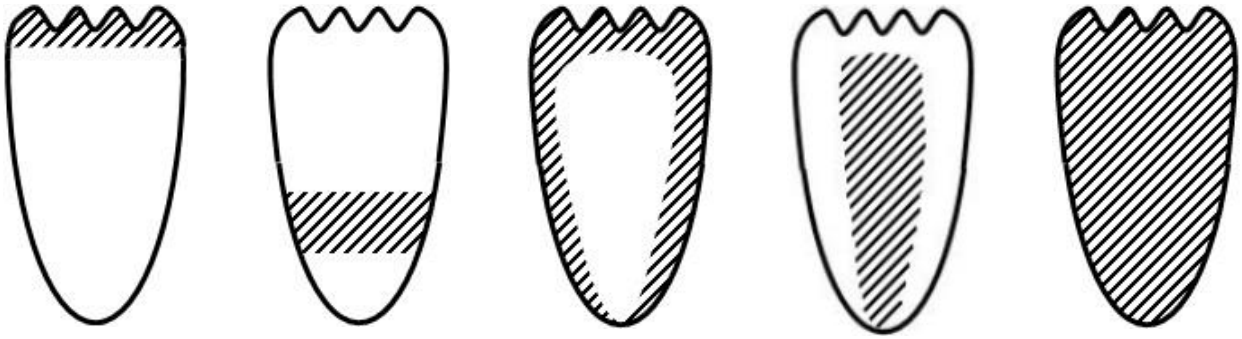
2
basal zone

3
basal quarter

4
basal half

5
distal half

6
distal quarter



7
tip

8
band

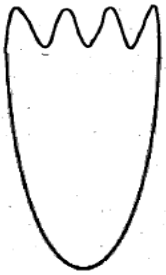
9
marginal zone

10
central zone

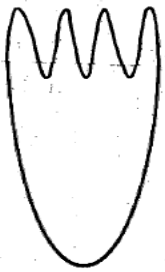
11
throughout

Ad. 33: Ray floret: incisions of apex

3
shallow



5
medium



7
deep

Ad. 34: Disc: main color

The color of disc should be observed just before anther dehiscence for daisy type, and at the time of full flowering for anemone type.

9. Literature

Bailey, L. H., Bailey, E. Z.: 1976, Hortus Third, A Concise Dictionary of Plants Cultivated in the United States and Canada. Macmillan. NewYork, US, p. 321

Huxley, A. (ed.), Griffiths, M.(ed.), Levy, M.(ed.),1999: The Royal Horticultural Society Dictionary of Gardening. Volume 1. A to C. Macmillan reference Ltd. London, GB, pp. 738-739

Everett, T. H., 1981: New York Botanical Garden Illustrated Encyclopedia of Horticulture. Garland Publishing. New York, US, pp. 890-891

Tsukamoto, Y., 1994: The Grand Dictionary of Horticulture Volume 1. The Shogakukan Ltd., Tokyo, JP, pp. 860-862

10. Technical Questionnaire

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

	Application date: (not to be filled in by the applicant)

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

1. Subject of the Technical Questionnaire

1.1	Genus	*Cosmos* Cav.
1.2	Species (please complete)	
1.3	Common name	Cosmos

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

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

[#]4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross [ ]
(please state parent varieties)

(……..……) x (……..……..……...…)
female parent male parent

(b) partially known cross [ ]
(please state known parent variety(ies))

(……..……...…) x (……..……..……...…)
female parent male parent

(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)

[#] 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:

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

(a)	Self-pollination	[ ]
(b)	Cross-pollination	
	(i) population	[ ]
	(ii) synthetic variety	[ ]
(c)	Hybrid	[ ]
(d)	Other (please provide details)	[ ]

4.2.2 Vegetative propagation

(a)	cuttings	[ ]
(b)	*in vitro* propagation	[ ]
(c)	other (state method)	[ ]

4.2.3 Other [ ]
(please provide details)

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: growth habit**		
	upright		1 [ ]
	semi upright		2 [ ]
	spreading		3 [ ]
5.2 (13)	**Flower head: disc type**		
	daisy		1 [ ]
	anemone	Bridal Bouquet COS	2 [ ]
5.3 (14)	**Flower head: collar segments**		
	absent		1 [ ]
	present	Red Illusion	9 [ ]
5.4 (19)	**Ray floret: type**		
	ligulate		1 [ ]
	ligulate and tublar		2 [ ]
	tubular		3 [ ]
5.5 (i) (25)	**Ray floret: main color of inner side**		
	RHS Colour Chart (indicate reference number)		
5.5 (ii) (25)	**Ray floret: main color of inner side**		
	white		1 [ ]
	yellow		2 [ ]
	orange		3 [ ]
	pink		4 [ ]
	red		5 [ ]
	red purple		6 [ ]
	brown red		7 [ ]
	other color (indicate)		8 [ ]

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

	Characteristics	Example Varieties	Note
5.6 (i) (26)	**Ray floret: secondary color of inner side**		
	RHS Colour Chart (indicate reference number)		
5.6 (ii) (26)	**Ray floret: secondary color of inner side**		
	white		1 [ ]
	yellow		2 [ ]
	orange		3 [ ]
	pink		4 [ ]
	red		5 [ ]
	red purple		6 [ ]
	brown red		7 [ ]
	other color (indicate)		8 [ ]

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

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 variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the **similar** variety(ies)	Describe the expression of the characteristic(s) for **your** candidate variety
Example	*Plant: growth habit*	*upright*	*semi upright*

Comments:

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 Other information

7.4 A representative color image of the variety should accompany the Technical Questionnaire.

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

If the answer to (b) is yes, please attach a copy of the authorization.

[#] 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:

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. virus, bacteria, phytoplasma)	Yes [ ]	No [ ]
(b)	Chemical treatment (e.g. growth retardant, pesticide)	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

Date

[End of document]