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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

ZINNIA *

UPOV Code(s): ZINNI_AEL; ZINNI_ANG; ZINNI_ELE; ZINNI_HAA; ZINNI_PER

Zinnia ×*marylandica* D. M. Spooner et al.;
Zinnia angustifolia Kunth;
Zinnia elegans Jacq.;
Zinnia haageana Regel;
Zinnia peruviana (L.) L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Zinnia ×*marylandica* D. M. Spooner et al.				
Zinnia angustifolia Kunth, *Zinnia linearis* Benth.			Schmalblättrige Zinnie	Zinnia Naranja
Zinnia elegans Jacq., *Crassina elegans* (Jacq.) Kuntze, *Zinnia violacea* Cav.	Common Zinnia, Elegant Zinnia, Garden Zinnia, Youth-and-age, Youth-and-old-age	Zinnia, Zinnia élégant	Garten-Zinnie, Pracht-Zinnie, Zinnie	Rascamoño, Zinnia, Miguelito
Zinnia haageana Regel	Mexican Zinnia			Zinnia Mexicana
Zinnia peruviana (L.) L., *Chrysogonum peruvianum* L., *Zinnia multiflora* L., *Zinnia pauciflora* L., *Zinnia tenuiflora* Jacq., *Zinnia verticillata* Andrews	Field Zinnia, Peruvian Zinnia, Wild Zinnia			Mal de Ojo

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 *Zinnia* ×*marylandica* D. M. Spooner et al., *Zinnia angustifolia* Kunth, *Zinnia elegans* Jacq., *Zinnia haageana* Regel and *Zinnia peruviana* (L.) L.

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.

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

Hybrid varieties: a sufficient quantity of seed to produce a minimum of 15 plants.
Cross-pollinated varieties: a sufficient quantity of seed to produce a minimum of 40 plants.

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.

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

3.1.1 The minimum duration of tests should normally be a single growing cycle.

3.1.2 The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.

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 In the case of hybrid varieties, each test should be designed to result in a total of at least 15 plants.

3.4.2 In the case of cross-pollinated varieties, each test should be designed to result in a total of at least 40 plants.

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 or Parts of Plants to be Examined

In the case of hybrid varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observation made on all plants in the test, disregarding any off-type plants.

In the case of cross-pollinated varieties, 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 and any other observation 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 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

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 These Test Guidelines have been developed for the examination of seed-propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.

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

4.2.4 For the assessment of uniformity of hybrid 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 15 plants, 1 off-type is allowed.

4.3 Stability

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new seed 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) Plant: growth habit (characteristic 1)
(b) Plant: height (characteristic 2)
(c) Flower head: type (characteristic 16)
(d) Ray floret: main color (characteristic 28) with the following groups:
Gr. 1: white
Gr. 2: green
Gr. 3: yellow
Gr. 4: orange
Gr. 5: pink
Gr. 6: red
Gr. 7: purple
Gr. 8: violet
(e) Only varieties with Flower head: type: single or semi-double: Disc: color (characteristic 35)

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 All relevant states of expression are presented in the characteristic.

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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1 2	**3 4**	**5 6**	**7**			
	Name of characteristics in English	**Nom du caractère en français**	**Name des Merkmals auf Deutsch**	**Nombre del carácter en español**		
	states of expression	types d'expression	Ausprägungsstufen	tipos de expresión		

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

3 Type of expression
QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3

4 Method of observation (and type of plot, if applicable)
MG, MS, VG, VS – see Chapter 4.1.5

5 (+) See Explanations on the Table of Characteristics in Chapter 8.2

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

7 Not applicable

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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	**(*)**	**PQ VG**	**(+)**				
		Plant: growth habit	**Plante : port**	**Pflanze: Wuchsform**	**Planta: hábito de crecimiento**		
		upright	dressé	aufrecht	erecto	Peppermint Stick	1
		semi-upright	demi-dressé	halbaufrecht	semierecto	Profusion Red	2
		spreading	étalé	breitwüchsig	extendido	Solcito	3
2.	**(*)**	**QN MG/MS/VG**					
		Plant: height	**Plante : hauteur**	**Pflanze: Höhe**	**Planta: altura**		
		very short	très basse	sehr niedrig	muy baja		1
		very short to short	très basse à basse	sehr niedrig bis niedrig	muy baja a baja		2
		short	basse	niedrig	baja	Profusion Red	3
		short to medium	basse à moyenne	niedrig bis mittel	baja a media		4
		medium	moyenne	mittel	media	Witworna	5
		medium to tall	moyenne à haute	mittel bis hoch	media a alta		6
		tall	haute	hoch	alta	Inca, Peppermint Stick	7
		tall to very tall	haute à très haute	hoch bis sehr hoch	alta a muy alta		8
		very tall	très haute	sehr hoch	muy alta		9
3.	**(*)**	**QN VG**	**(+)**				
		Plant: density of branches	**Plante : densité des ramifications**	**Pflanze: Dichte der Triebe**	**Planta: densidad de las ramas**		
		very sparse	très faible	sehr locker	muy escasa	Witworna	1
		sparse	faible	locker	escasa		2
		medium	moyenne	mittel	media	Peppermint Stick	3
		dense	forte	dicht	densa		4
		very dense	très forte	sehr dicht	muy densa	Profusion Red	5
4.		**QN VG**	**(+)**				
		Stem: density of pubescence	**Tige : densité de la pilosité**	**Stängel: Dichte der Behaarung**	**Tallo: densidad de la pubescencia**		
		absent or very sparse	absente ou très lâche	fehlend oder sehr locker	ausente o muy escasa	Zestr	1
		sparse	lâche	locker	escasa		2
		medium	moyenne	mittel	media	Uproar	3
		dense	dense	dicht	densa		4
		very dense	très dense	sehr dicht	muy densa	Short Stuff Coral	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. (*) QN VG		**(+)**				
	Stem: anthocyanin coloration	**Tige : pigmentation anthocyanique**	**Stängel: Anthocyanfärbung**	**Tallo: pigmentación antociánica**		
	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Profusion Fire	1
	weak	faible	gering	débil	Lilliput Salmon	2
	medium	moyenne	mittel	media	Profusion Red	3
	strong	forte	stark	fuerte		4
	very strong	très forte	sehr stark	muy fuerte		5
6. (*) QN MG/MS/VG			**(a)**			
	Leaf: length	**Feuille : longueur**	**Blatt: Länge**	**Hoja: longitud**		
	very short	très courte	sehr kurz	muy corta	Zinnita	1
	short	courte	kurz	corta		2
	medium	moyenne	mittel	media	Zahara Double Cherry	3
	long	longue	lang	larga		4
	very long	très longue	sehr lang	muy larga	State Fair	5
7. (*) QN MG/MS/VG			**(a)**			
	Leaf: width	**Feuille : largeur**	**Blatt: Breite**	**Hoja: anchura**		
	very narrow	très étroite	sehr schmal	muy estrecha	Starbright	1
	narrow	étroite	schmal	estrecha		2
	medium	moyenne	mittel	media	Yellow Flame	3
	broad	large	breit	ancha		4
	very broad	très large	sehr breit	muy ancha	Short Stuff Coral	5
8. (*) QN MG/MS/VG		**(+)**	**(a)**			
	Leaf: length/width ratio	**Feuille : rapport longueur/largeur**	**Blatt: Verhältnis Länge/Breite**	**Hoja: relación longitud/anchura**		
	very low	très bas	sehr klein	muy baja	Crystal Yellow	1
	low	bas	klein	baja		2
	medium	moyen	mittel	media		3
	high	élevé	groß	alta		4
	very high	très élevé	sehr groß	muy alta	Dreamland rose	5
9. QN VG			**(a)**			
	Leaf: position of broadest part	**Feuille : position de la partie la plus large**	**Blatt: Position des breitesten Teils**	**Hoja: posición de la parte más ancha**		
	at base	à la base	an der Basis	en la base	Dreamland rose	1
	at middle	au milieu	in der Mitte	en la mitad	Swizzle Cherry Ivory	2
	towards apex	vers l'apex	zum Apex hin	cerca del ápice	Oklahoma Salmon	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10.	**(*)**	**QN VG**	**(+) (a)**				
		Leaf: profile in cross section	**Feuille : profil en section transversale**	**Blatt: Profil im Querschnitt**	**Hoja: perfil en sección transversal**		
		flat	plane	flach	plano	Profusion Knee High Red	1
		moderately concave	modérément concave	mäßig konkav	moderadamente cóncavo	Lilliput Salmon	2
		strongly concave	fortement concave	stark konkav	muy cóncavo	State Fair	3
11.		**QN VG**	**(+) (a)**				
		Leaf: undulation of margin	**Feuille : ondulation du bord**	**Blatt: Randwellung**	**Hoja: ondulación del borde**		
		absent or weak	nulle ou faible	fehlend oder gering	ausente o débil		1
		medium	moyenne	mittel	media		2
		strong	forte	stark	fuerte		3
12.		**QN VG**	**(+) (a)**				
		Leaf: intensity of green color	**Feuille : intensité de la couleur verte**	**Blatt: Intensität der Grünfärbung**	**Hoja: intensidad del color verde**		
		very light	très claire	sehr hell	muy clara		1
		light	claire	hell	clara	Oklahoma Salmon	2
		medium	moyenne	mittel	media		3
		dark	foncée	dunkel	oscura	Starbright	4
		very dark	très foncée	sehr dunkel	muy oscura		5
13.	**(*)**	**QN VG**	**(+) (a)**				
		Leaf: area of anthocyanin coloration at base	**Feuille : surface de la pigmentation anthocyanique à la base**	**Blatt: Fläche der Anthocyanfärbung an der Basis**	**Hoja: superficie de la pigmentación antociánica en la base**		
		absent or small	absente ou petite	fehlend oder klein	ausente o pequeña	Oklahoma Salmon	1
		small to medium	petite à moyenne	klein bis mittel	pequeña a media		2
		medium	moyenne	mittel	media	Uproar Rose	3
		medium to large	moyenne à grande	mittel bis groß	media a grande		4
		large	grande	groß	grande	State Fair	5
14.	**(*)**	**QN MG/MS/VG**					
		Peduncle: length	**Pédoncule : longueur**	**Blütenstandsstiel: Länge**	**Pedúnculo: longitud**		
		short	courte	kurz	corta	Zahara Coral Rose	1
		short to medium	courte à moyenne	kurz bis mittel	corta a media		2
		medium	moyenne	mittel	media	Witworna	3
		medium to long	moyenne à longue	mittel bis lang	media a larga		4
		long	longue	lang	larga	Uproar Rose	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15.	**QN VG**					
	Flower head: position in relation to foliage	**Capitule : position par rapport au feuillage**	**Blütenstand: Position im Verhältnis zum Laub**	**Capítulo: posición en relación con el follaje**		
	below	en dessous	unterhalb	por debajo	Short Stuff Scarlet	1
	same level	au même niveau	auf gleicher Höhe	al mismo nivel	Swizzle Cherry Ivory	2
	moderately above	modérément au-dessus	mäßig oberhalb	moderadamente por encima	Inca	3
	highly above	bien au-dessus	weit oberhalb	muy por encima	Oklahoma Salmon	4
16.	**(*) PQ VG**	**(+)**				
	Flower head: type	**Capitule : type**	**Blütenstand: Typ**	**Capítulo: tipo**		
	single	simple	einfach	sencillo	Star Gold, Crystal Yellow	1
	semi-double	semi-double	halbgefüllt	semidoble	Profusion Red, Yellow Flame	2
	double	double	gefüllt	doble	Swizzle Scarlet Yellow, Lilliput Salmon	3
17.	**(*) QL VG**					
	Only varieties with Flower head: type: single or semi-double Flower head: Disc: type	**Variétés à type de capitule simple ou semi-double seulement : Disque : type**	**Nur Sorten mit Blütenstand: Typ: einfacher oder halbgefüllter Blütenstand: Scheibe: Typ**	**Solo variedades con Capítulo: tipo: sencillo o semidoble: Disco: tipo**		
	daisy	marguerite	margeritenförmig	margarita	Crystal Yellow	1
	anemone	anémone	anemonenförmig	anémona	Zinderella Lilac	2
18.	**(*) QN MG/MS/VG**					
	Flower head: diameter	**Capitule : diamètre**	**Blütenstand: Durchmesser**	**Capítulo: diámetro**		
	very small	très petit	sehr klein	muy pequeño		1
	very small to small	très petit à petit	sehr klein bis klein	muy pequeño a pequeño		2
	small	petit	klein	pequeño	Lilliput Salmon	3
	small to medium	petit à moyen	klein bis mittel	pequeño a medio		4
	medium	moyen	mittel	medio	Oklahoma Salmon, Crystal Yellow	5
	medium to large	moyen à grand	mittel bis groß	medio a grande		6
	large	grand	groß	grande	Inca	7
	large to very large	grand à très grand	groß bis sehr groß	grande a muy grande		8
	very large	très grand	sehr groß	muy grande		9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. (*) QN MG/MS/VG						
	Flower head: number of ray florets	**Capitule : nombre de fleurs ligulées**	**Blütenstand: Anzahl Zungenblüten**	**Capítulo: número de flores liguladas**		
	very few	très petit	sehr gering	muy bajo	Star Gold, Crystal Yellow	1
	very few to few	très petit à petit	sehr gering bis gering	muy bajo a bajo		2
	few	petit	gering	bajo	Profusion Red	3
	few to medium	petit à moyen	gering bis mittel	bajo a medio		4
	medium	moyen	mittel	medio	Zowwie Yellow Flame	5
	medium to many	moyen à grand	mittel bis hoch	medio a alto		6
	many	grand	hoch	alto	Uproar Rose	7
	many to very many	grand à très grand	hoch bis sehr hoch	alto a muy alto		8
	very many	très grand	sehr hoch	muy alto	Swizzle Scarlet Yellow	9
20. (*) QN MG/MS/VG (b)						
	Ray floret: length	**Fleur ligulée : longueur**	**Zungenblüte: Länge**	**Flor ligulada: longitud**		
	very short	très courte	sehr kurz	muy corta		1
	very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta		2
	short	courte	kurz	corta	Lilliput Salmon	3
	short to medium	courte à moyenne	kurz bis mittel	corta a media		4
	medium	moyenne	mittel	media	Peppermint Stick, Profusion Knee	5
	medium to long	moyenne à longue	mittel bis lang	media a larga		6
	long	longue	lang	larga	Inca	7
	long to very long	longue à très longue	lang bis sehr lang	larga a muy larga		8
	very long	très longue	sehr lang	muy larga		9
21. (*) QN MG/MS/VG (b)						
	Ray floret: width	**Fleur ligulée : largeur**	**Zungenblüte: Breite**	**Flor ligulada: anchura**		
	very narrow	très étroite	sehr schmal	muy estrecha	Star Starbright	1
	narrow	étroite	schmal	estrecha		2
	medium	moyenne	mittel	media	Ruffles	3
	broad	large	breit	ancha		4
	very broad	très large	sehr breit	muy ancha	Inca	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22. **(*)**	**QN** **MG/MS/VG**		**(b)**			
	Ray floret: length/width ratio	**Fleur ligulée : rapport longueur/largeur**	**Zungenblüte: Verhältnis Länge/Breite**	**Flor ligulada: relación longitud/anchura**		
	very low	très bas	sehr klein	muy baja	Profusion Knee High Red	1
	low	bas	klein	baja		2
	medium	moyen	mittel	media	Ruffles	3
	high	élevé	groß	alta		4
	very high	très élevé	sehr groß	muy alta	Swizzle Scarlet Yellow	5
23.	**QN** **VG**	**(+)**	**(b)**			
	Ray floret: profile in cross section	**Fleur ligulée : profil en section transversale**	**Zungenblüte: Profil im Querschnitt**	**Flor ligulada: perfil de la sección transversal**		
	strongly concave	fortement concave	stark konkav	muy cóncavo		1
	weakly concave	légèrement concave	schwach konkav	débilmente cóncavo		2
	flat	plane	flach	plano		3
	weakly convex	légèrement convexe	schwach konvex	débilmente convexo		4
	strongly convex	fortement convexe	stark konvex	muy convexo		5
24. **(*)**	**PQ** **VG**	**(+)**	**(b)**			
	Ray floret: curvature of longitudinal axis	**Fleur ligulée : courbure de l'axe longitudinal**	**Zungenblüte: Biegung der Längsachse**	**Flor ligulada: curvatura del eje longitudinal**		
	incurving	incurvée	aufgebogen	incurvada		1
	straight	droite	gerade	recta		2
	reflexing	récurvée	zurückgebogen	curvada hacia abajo		3
	twisted	torsadée	gedreht	retorcida		4
25.	**QN** **VG**	**(+)**	**(b)**			
	Ray floret: part of axis curved	**Fleur ligulée : partie de l'axe courbé**	**Zungenblüte: gebogener Teil der Achse**	**Flor ligulada: parte del eje curvado**		
	distal quarter	quart distal	distales Viertel	en el cuarto distal		1
	distal half	moitié distale	distale Hälfte	en la mitad distal		2
	distal three quarters	trois quarts distaux	distale drei Viertel	en los tres cuartos distales		3
26.	**QN** **VG**		**(b)**			
	Ray floret: degree of curvature	**Fleur ligulée : degré de la courbure**	**Zungenblüte: Stärke der Biegung**	**Flor ligulada: grado de la curvatura**		
	very weak	très faible	sehr gering	muy baja		1
	weak	faible	gering	baja	Uproar Rose	2
	medium	moyenne	mittel	media	Swizzle Cherry Ivory	3
	strong	forte	stark	fuerte	Inca	4
	very strong	très forte	sehr stark	muy fuerte		5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27. **(*)**	**PQ** **VG**	**(+)** **(b)**				
	Ray floret: shape of apex	**Fleur ligulée : forme de l'apex**	**Zungenblüte: Form der Spitze**	**Flor ligulada: forma del ápice**		
	acute	aigue	spitz	aguda		1
	rounded	arrondie	abgerundet	redondeada		2
	truncate	tronquée	gerade	truncada		3
	emarginate	émarginée	eingekerbt	emarginada		4
	dentate	dentée	gezähnt	dentada		5
	mucronate	mucronée	mit kurzer aufgesetzter Spitze	mucronada		6
28. **(*)**	**PQ** **VG**		**(b), (c)**			
	Ray floret: main color	**Fleur ligulée : couleur principale**	**Zungenblüte: Hauptfarbe**	**Flor ligulada: color principal**		
	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)		
29.	**PQ** **VG**		**(c)**			
	Ray floret: secondary color	**Fleur ligulée : couleur secondaire**	**Zungenblüte: Sekundärfarbe**	**Flor ligulada: color secundario**		
	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)		
30.	**PQ** **VG**	**(+)** **(b)**				
	Ray floret: distribution of secondary color	**Fleur ligulée : distribution de la couleur secondaire**	**Zungenblüte: Verteilung der Sekundärfarbe**	**Flor ligulada: distribución del color secundario**		
	none	aucune	keine	ausente	Ruffles	1
	distal quarter	quart distal	im distalen Viertel	en el cuarto distal		2
	distal half	moitié distale	in distaler Hälfte	en la mitad distal	Zowwie Yellow Flame	3
	basal half	moitié basale	in basaler Hälfte	en la mitad basal	Profusion Cherry Bicolor	4
	basal quarter	quart basal	im basalen Viertel	en el cuarto basal	Zahara Rose Starlight	5
	on margin	au bord	am Rand	en el borde		6
	central bar	barre centrale	Mittelstreifen	en la franja central	SAKZIN017	7
	throughout	partout	überall	en la totalidad	Peppermint Stick	8
31.	**PQ** **VG**	**(+)** **(b)**				
	Ray floret: pattern of secondary color	**Fleur ligulée : répartition de la couleur secondaire**	**Zungenblüte: Muster der Sekundärfarbe**	**Flor ligulada: forma de disposición del color secundario**		
	solid	uniforme	durchgefärbt	uniforme		1
	blotches	taches	Flecken	en manchas		2
	stripes	rayures	Streifen	en rayas		3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
32.	**PQ** **VG**	**(b), (c)**				
	Ray floret: tertiary color	**Fleur ligulée : couleur tertiaire**	**Zungenblüte: Tertiärfarbe**	**Flor ligulada: color terciario**		
	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.	**PQ** **VG**	**(+)** **(b)**				
	Ray floret: distribution of tertiary color	**Fleur ligulée : distribution de la couleur tertiaire**	**Zungenblüte: Verteilung der Tertiärfarbe**	**Flor ligulada: distribución del color terciario**		
	none	aucune	keine	ausente		1
	distal quarter	quart distal	im distalen Viertel	en el cuarto distal		2
	distal half	moitié distale	in distaler Hälfte	en la mitad distal		3
	basal half	moitié basale	in basaler Hälfte	en la mitad basal		4
	basal quarter	quart basal	im basalen Viertel	en el cuarto basal	Peppermint Stick	5
	on margin	au bord	am Rand	en el borde		6
	central bar	barre centrale	Mittelstreifen	franja central	SAKZIN017	7
	throughout	partout	überall	en la totalidad		8
34.	**PQ** **VG**	**(+)** **(b)**				
	Ray floret: pattern of tertiary color	**Fleur ligulée : répartition de la couleur tertiaire**	**Zungenblüte: Muster der Tertiärfarbe**	**Flor ligulada: forma de disposición del color terciario**		
	solid	uniforme	durchgefärbt	uniforme		1
	blotches	taches	Flecken	en manchas		2
	stripes	rayures	Streifen	en rayas		3
35.	**PQ** **VG**	**(+)**				
	<u>Only varieties with Flower head: type: single or semi-double</u>: Disc: color	**<u>Variétés à type de capitule simple ou semi-double seulement</u> : Disque : couleur**	**<u>Nur Sorten mit Blütenstand: Typ: einfach oder halbgefüllt</u>: Scheibe: Farbe**	**<u>Solo variedades con Capítulo: tipo: sencillo o semidoble:</u> Disco: color**		
	yellow green	vert jaune	gelbgrün	verde amarillento	Profusion Lemon	1
	yellow	jaune	gelb	amarillo	Crystal Yellow	2
	orange	orange	orange	naranja	Crystal Orange	3
	purple	pourpre	purpurn	púrpura	Purple prince	4
	brown	brun	braun	marrón	Zahara Rose Starlight, Profusion Fire	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
36.	**QN VG**	**(+)**				
	Only varieties with Flower head: type: single or semi-double: Disc: diameter	**Variétés à type de capitule simple ou semi-double seulement : Disque : diamètre**	**Nur Sorten mit Blütenstand: Typ: einfach oder halbgefüllt: Scheibe: Durchmesser**	**Solo variedades con Capítulo: tipo: sencillo o semidoble: Disco: diámetro**		
	very small	très petit	sehr klein	muy pequeño		1
	small	petit	klein	pequeño		2
	medium	moyen	mittel	medio	Profusion Red	3
	large	grand	groß	grande	Dreamland Scarlet	4
	very large	très grand	sehr groß	muy grande		5

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

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

(a) Observations should be made on leaves from the middle third of the stem.

(b) Observations should be made on the inner side of the ray florets. For varieties with semi-double and double flower heads, observations should be made on the outermost whorl of ray florets.

(c) The main color is the color with the largest surface area. The color with the second largest area is the secondary color. In cases where the areas of the colors are too similar to reliably decide which color has the largest area, the darker color is considered to be the main color. The tertiary color is the color with the third largest area. In cases where the areas of the secondary and the tertiary color are too similar to reliably decide which color has the largest area, the lighter color is considered to be the tertiary color.

8.2 Explanations for individual characteristics

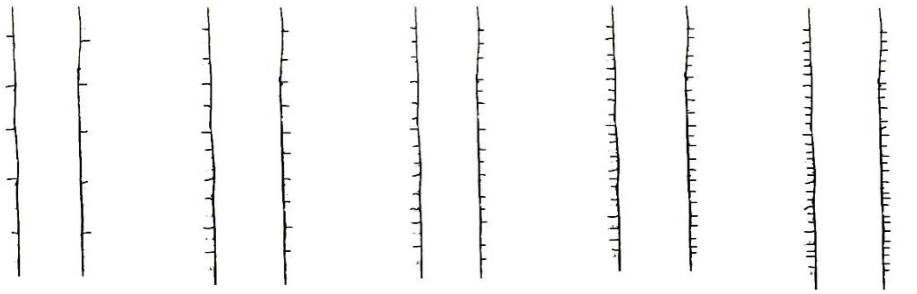
Ad. 1: Plant: growth habit

1 upright | 2 semi-upright | 3 spreading

Ad. 3: Plant: density of branches

1 very sparse | 2 sparse | 3 medium | 4 dense | 5 very dense

Ad. 4: Stem: density of pubescence



1	2	3	4	5
absent or very sparse	sparse	medium	dense	very dense

Ad. 5: Stem: anthocyanin coloration

Observations should be made at the middle third of the stem.

Ad. 8: Leaf: length/width ratio

1	3	5
very low	medium	very high

Ad. 10: Leaf: profile in cross section

1	2	3
flat	moderately concave	strongly concave

Ad. 11: Leaf: undulation of margin

1	2	3
absent or weak	medium	strong

Ad. 12: Leaf: intensity of green color

Observations should be made on the upper side of a typical leaf.

Ad. 13: Leaf: area of anthocyanin coloration at base

Observations should be made on the upper side of a typical leaf.

1
absent or small

3
medium

5
large

Ad. 16: Flower head: type

1. Single: flowers with one row of ray florets only.
2. Semi-double: flowers with more than one row of ray florets and a clearly visible disc.
3. Double: flowers with no visible disc.

1
single

2
semi-double

3
double

Ad. 23: Ray floret: profile in cross section

Observations should be made in the middle of the ray floret.

1
strongly concave

2
weakly concave

3
flat

4
weakly convex

5
strongly convex

Ad. 24: Ray floret: curvature of longitudinal axis

1
incurving

2
straight

3
reflexing

4
twisted

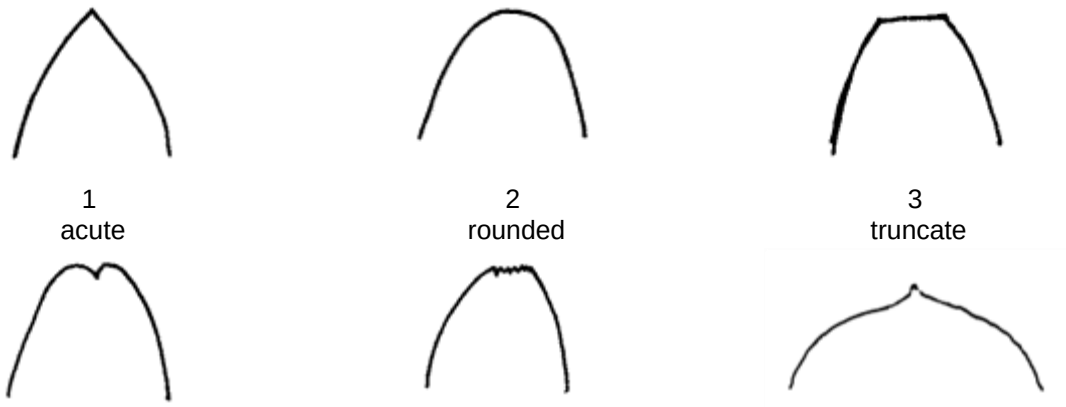
Ad. 25: Ray floret: part of axis curved

1
distal quarter

2
distal half

3
distal three quarters

Ad. 27: Ray floret: shape of apex



1
acute

2
rounded

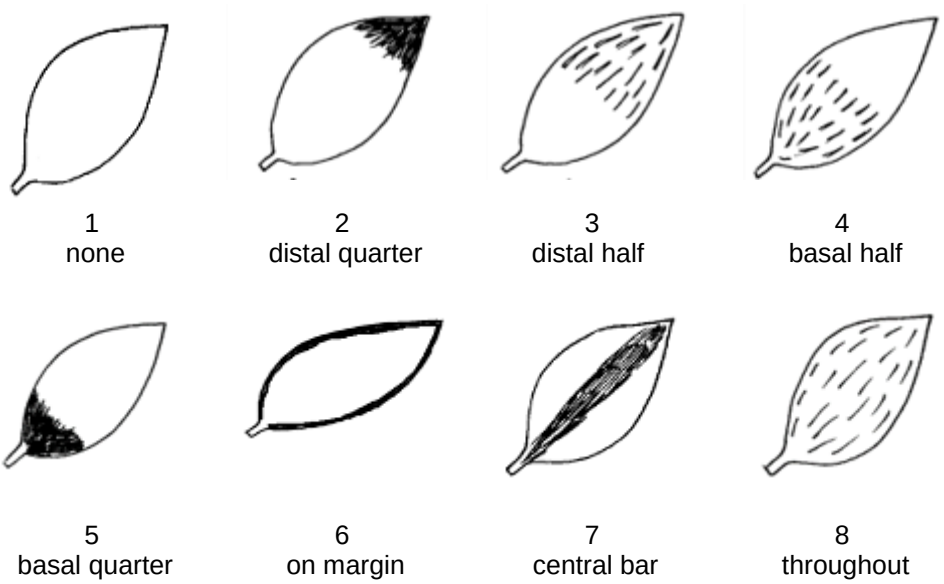
3
truncate

4
emarginate

5
dentate

6
mucronate

Ad. 30: Ray floret: distribution of secondary color



1 none
2 distal quarter
3 distal half
4 basal half
5 basal quarter
6 on margin
7 central bar
8 throughout

Ad. 31: Ray floret: pattern of secondary color

1 solid
2 blotches
3 stripes

Ad. 33: Ray floret: distribution of tertiary color

See Ad. 30

Ad. 34: Ray floret: pattern of tertiary color

See Ad. 31

Ad. 35: Only varieties with Flower head: type: single or semi-double: Disc: color

Observations should be made before dehiscence.

Ad. 36: Only varieties with Flower head: type: single or semi-double: Disc: diameter

Observation should be made after the flower bud has opened, but before the disc florets begin to dehisce.

9. Literature

Calderón, G., Rzedowski, J., 2005: Flora Fanerogámica del Valle de México. Instituto de Ecología, A.C. y Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, Pátzcuaro/Michoacán, MX, 909 pp.

Smith, A.R., 2006: Flora of North America Editorial Committee. Flora of North America. North of Mexico. Vol. 21. Oxford University Press. Oxford, GB, 71 pp.

Torres, A.M., 1963: Taxonomy of zinnia. Brittonia 15: 1-25., Springer/New York Botanical Garden, Bronx/New York, US, pp. 1-25

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

1.1.1	Botanical name	*Zinnia* ×*marylandica* D. M. Spooner et al.	[ ]
1.1.2	Common name		
1.2.1	Botanical name	*Zinnia angustifolia* Kunth	[ ]
1.2.2	Common name		
1.3.1	Botanical name	*Zinnia elegans* Jacq.	[ ]
1.3.2	Common name	Youth and age, Youth-and-old-age	
1.4.1	Botanical name	*Zinnia haageana* Regel	[ ]
1.4.2	Common name		
1.5.1	Botanical name	*Zinnia peruviana* (L.) L.	[ ]
1.5.2	Common name	Field zinnia, Peruvian Zinnia, Wild Zinnia	
1.6.1	Species or hybrid (please indicate)		[ ]
1.6.2	Common name		

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

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 variety)

(……..……..…) 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) Cross-pollination [ ]
(b) Hybrid [ ]
(c) Other (please provide details) [ ]

4.2.2 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 (2)	**Plant: height**		
	very short		1 [ ]
	very short to short		2 [ ]
	short	Profusion Red	3 [ ]
	short to medium		4 [ ]
	medium	Witworna	5 [ ]
	medium to tall		6 [ ]
	tall	Inca, Peppermint Stick	7 [ ]
	tall to very tall		8 [ ]
	very tall		9 [ ]
5.2 (5)	**Stem: anthocyanin coloration**		
	absent or very weak	Profusion Fire	1 [ ]
	weak	Lilliput Salmon	2 [ ]
	medium	Profusion Red	3 [ ]
	strong		4 [ ]
	very strong		5 [ ]
5.3 (14)	**Peduncle: length**		
	short	Zahara Coral Rose	1 [ ]
	short to medium		2 [ ]
	medium	Witworna	3 [ ]
	medium to long		4 [ ]
	long	Uproar Rose	5 [ ]
5.4(i) (28)	**Ray floret: main color**		
	RHS Colour Chart (indicate reference number)		
5.4(ii) (28)	**Ray floret: main color**		
	white		1 [ ]
	green		2 [ ]
	yellow		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
	red		6 [ ]
	purple		7 [ ]
	violet		8 [ ]
	other (please indicate)		[ ]

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	*Flower head: diameter*	*small*	*medium*

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

A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder's reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)"

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (http://www.upov.int/tgp/en/).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

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:

8. Authorization for release

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

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

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

9. Information on plant material 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]