

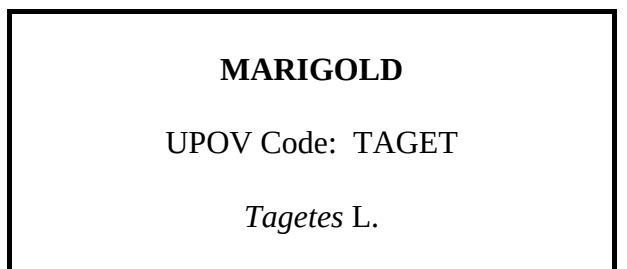


TG/246/1

ORIGINAL: English

DATE: 2007-03-28

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA



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

Alternative Names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Tagetes L.</i>	Marigold	Tagète, Œillet d'Inde, Rose d'Inde	Studentenblume	Clavel de las Indias, Clavelon, Cempoalxóchitl

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.]

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
1. SUBJECT OF THESE TEST GUIDELINES.....	3
2. MATERIAL REQUIRED	3
3. METHOD OF EXAMINATION.....	3
3.1 Number of Growing Cycles	3
3.2 Testing Place	3
3.3 Conditions for Conducting the Examination.....	3
3.4 Test Design	4
3.5 Number of Plants / Parts of Plants to be Examined.....	4
3.6 Additional Tests	4
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY	4
4.1 Distinctness	4
4.2 Uniformity.....	5
4.3 Stability	5
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL.....	5
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS	6
6.1 Categories of Characteristics.....	6
6.2 States of Expression and Corresponding Notes.....	7
6.3 Types of Expression	7
6.4 Example Varieties	7
6.5 Legend.....	7
7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES.....	8
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS	17
9. LITERATURE	23
10. TECHNICAL QUESTIONNAIRE	24

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Tagetes* L. of the family *Asteraceae* (*Compositae*).

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 rooted cuttings.

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

seed-propagated varieties: 3 grams of seed
vegetatively propagated varieties: 25 rooted cuttings.

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. 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*

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

3.3.2 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

3.4 *Test Design*

3.4.1 In the case of seed-propagated varieties, each test should be designed to result in a total of at least 60 plants.

3.4.2 In the case of vegetatively propagated varieties, each test should be designed to result in a total of at least 20 plants.

3.4.3 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 observation which must be made up to the end of the growing cycle.

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

3.5.1 For seed-propagated varieties, unless otherwise indicated, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observations made on all plants in the test.

3.5.2 For vegetatively propagated varieties, 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 The assessment of uniformity for seed-propagated varieties, should be according to recommendations for cross-pollinated and hybrid varieties as appropriate, in the General Introduction.

4.2.3 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 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 tested, either by growing a further generation, or by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness 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: height (characteristic 3)
- (b) Leaf: type (characteristic 8)
- (c) Leaf: intensity of green color (characteristic 11)
- (d) Flower head: floret type (characteristic 15)
- (e) Only varieties with one flower head color: Flower head: color (characteristic 25) with the following groups:
 - whitish
 - light yellow
 - dark yellow
 - light orange
 - medium orange
 - red
 - brown
- (f) Tubulate and/or tubuligulate floret: main color (characteristic 27) with the following groups:
 - whitish
 - light yellow
 - dark yellow
 - light orange
 - medium orange
 - red
 - brown
- (g) Only varieties with two flower head colors: ligulate floret: main color (characteristic 30) with the following groups:
 - whitish
 - light yellow
 - dark yellow
 - light orange
 - medium orange
 - red
 - brown

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

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

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

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	Hypocotyl: anthocyanin coloration	Hypocotyle: pigmentation anthocyanique	Hypokotyl: Anthocyanfärbung	Hipocotilo: pigmentación antociánica		
QL	absent	absente	fehlend	ausente		1
	present	présente	vorhanden	presente		9
2.	Plant: fragrance	Plante: parfum	Pflanze: Duft	Planta: fragancia		
QL	absent	absent	fehlend	ausente	Hawaii	1
	present	présent	vorhanden	presente	Cupidon Double	9
3. (*)	Plant: height	Plante: hauteur	Pflanze: Höhe	Planta: altura		
QN	very short	très basse	sehr niedrig	muy pequeña	Cupidon, Golden Boy	1
	short	basse	niedrig	pequeña	Mistral, Spry	3
	medium	moyenne	mittel	media	Golden Jubilee, Monsieur Majestic	5
	tall	haute	hoch	grande	Jaune Supreme, Sourire	7
	very tall	très haute	sehr hoch	muy grande	Lemon Queen, Orange Prince	9
4. (*) (+)	Plant: growth habit	Plante: port	Pflanze: Wuchsform	Planta: porte		
QN	upright	dressé	aufrecht	erecto	Puebla	1
	semi upright	demi-dressé	halbaufrecht	semierecto	Nueva	3
	spreading	étalé	breitwüchsig	abierto	Tepeaca	5
5. (*)	Plant: branching	Plante: ramification	Pflanze: Verzweigung	Planta: ramificación		
QN	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	Morelos	1
	medium	moyenne	mittel	media	Chapingo	2
	strong	forte	stark	fuerte	Oriental	3

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6. (*)	Stem: anthocyanin coloration	Tige: pigmentation anthocyanique	Stiel: Anthocyanfärbung	Tallo: pigmentación antociánica		
QL	absent	absente	fehlend	ausente	Hidalgo	1
	present	présente	vorhanden	presente	Tlalámac	9
7.	Stem: intensity of anthocyanin coloration	Tige: intensité de la pigmentation anthocyanique	Stiel: Intensität der Anthocyanfärbung	Tallo: intensidad de la pigmentación antociánica		
QN	weak	faible	gering	débil	Tepoztlán	3
	medium	moyenne	mittel	media	Chapingo	5
	strong	forte	stark	fuerte	Itarichen	7
8. (*) (+)	Leaf: type	Feuille: type	Blatt: Typ	Hoja: tipo		
QL	simple	simple	einfach	simple	Morelos	1
	pinnate	penné	gefiedert	pinnada	Tepoztlán	2
9. (*) (+)	Leaf: length	Feuille: longueur	Blatt: Länge	Hoja: longitud		
QN	short	courte	kurz	corta	Tajín	3
	medium	moyenne	mittel	media	Teziutlán	5
	long	longue	lang	larga	Carmen	7
10. (*) (+)	Leaf: width	Feuille: largeur	Blatt: Breite	Hoja: anchura		
QN	narrow	étroite	schmal	estrecha	Ninín	3
	medium	moyenne	mittel	media	Zongolica	5
	broad	large	breit	ancha	Cuernavaca	7
11. (*)	Leaf: intensity of green color	Feuille: intensité de la couleur verte	Blatt: Intensität der Grünfärbung	Hoja: intensidad del color verde		
QN	light	claire	hell	claro	Fework Jaune	3
	medium	moyenne	mittel	medio	Sendero	5
	dark	foncée	dunkel	oscuro	Bonanza Gelb	7

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.	<u>Only varieties with pinnate leaves: terminal leaflet: width</u>	<u>Seulement les variétés à fleurs pennées: foliole terminale</u>	<u>Nur Sorten mit gefiederten Blättern: Endfieder: Breite</u>	<u>Sólo variedades con hojas pinnadas: foliolo terminal: anchura</u>		
QN	narrow	étroite	schmal	estrecho	Yei	3
	medium	moyenne	mittel	medio	Macuilli	5
	broad	large	breit	ancho	Chicome	7
13. (+)	Leaf margin: depth of indentations	Bord de la feuille: profondeur des découpures	Blattrand: Tiefe der Einschnitte	Borde del limbo: profundidad de las indentaciones		
QN	shallow	peu profondes	flach	superficial	Tezontla	3
	medium	moyennes	mittel	media	Tepetlaoxtoc	5
	deep	profondes	tief	profunda	Tlálloc	7
14.	Flower head: length of peduncle of terminal flower head	Capitule: longueur du pédoncule du capitule terminal	Blütenstand: Länge des Blütenstiels des Terminalblütenstandes	Capítulo: longitud del pedúnculo en el capítulo terminal		
QN	short	court	kurz	corto	Tzapinco	3
	medium	moyen	mittel	medio	Xochimilco	5
	long	long	lang	largo	Toluca	7
15. (* (+)	Flower head: floret type	Capitule: type de fleurons	Blütenstand: Blütentyp	Capítulo: tipo de flor		
QL	all tubulate	tous tubulés	nur röhrenförmig	sólo flósculos	Mexicana I	1
	tubulate and ligulate	tubulés et ligulés	röhrenförmig und zungenförmig	flósculos y liguladas	Bonanza, Little Hero Spry, Tecuanulco	2
	tubuligulate and ligulate	tubuligulés et ligulés	röhren-zungenförmig und zungenförmig	tubular-liguladas y liguladas	Ecatzingo, Spry	3
	all tubuligulate	tous tubuligulés	nur röhren-zungenförmig	todas tubular-liguladas	Lemon Queen, Orange Prim	4
	all ligulate	tous ligulés	nur zungenförmig	todas liguladas	Tzapinco	5

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. (*)	Flower head: diameter	Capitule: diamètre	Blütenstand: Durchmesser	Capítulo: diámetro		
QN	very small	très petit	sehr klein	muy pequeño	Ornament, Tangerine Gem	1
	small	petit	klein	pequeño	Disco Orange	3
	medium	moyen	mittel	medio	Aurora Orange, Bonanza Orange	5
	large	grand	groß	grande	Queen Bee	7
	very large	très grand	sehr groß	muy grande	Red Seven Star	9
17. (*)	<u>Only varieties with ligulate floret type:</u> flower head: number of ligulate floret whorls	<u>Seulement les capitules à fleurons ligulés:</u> capitule: nombre de verticilles des fleurons ligulés	<u>Nur Sorten mit zungenförmigen:</u> Blütenstand: Anzahl zungenförmige Blütenquirle	<u>Sólo variedades con tipo de flor ligulada:</u> capítulo: número de verticilos ligulados		
QN	very few	très petit	sehr wenige	muy escaso	Disco Orange, Monsieur Majestic	1
	few	petit	wenige	escaso	Guerrero	3
	medium	moyen	mittel	medio	Tlaxcala	5
	many	grand	viele	numeroso	Celaya	7
18. (+)	Ligulate floret: shape	Fleuron ligulé: forme	Zungenförmige Blüte: Form	Flor ligulada: forma		
PQ	flat	plat	flach	plana	Teo	1
	intermediate	intermédiaire	intermediär	intermedia	Ah-Kin	2
	trumpet	en trompette	trompetenförmig	corneta	Tlalocan	3
19. (*) (+)	Ligulate floret: incision of margin	Fleuron ligulé: incision du bord	Zungenförmige Blüte: Randeinschnitte	Flor ligulada: incisión del borde		
QL	absent	absente	fehlend	ausente	Teotihuacan	1
	present	présente	vorhanden	presente	Acuexcomac	9

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20. (*)	Ligulate floret: depth of incision of margin	Fleuron ligulé: profondeur de l'incision du bord	Zungenförmige Blüte: Tiefe der Randeinschnitte	Flor ligulada: profundidad de la incisión del borde		
QN	very shallow	très peu profonde	sehr flach	muy superficial	Cardenal	1
	shallow	peu profonde	flach	superficial	Carmen	3
	medium	moyenne	mittel	media	Conzuelo	5
	deep	profonde	tief	profunda	Conde	7
	very deep	très profonde	sehr tief	muy profunda	Clara	9
21.	<u>Only varieties with incision of margin absent:</u> ligulate floret: shape of apex	<u>Seulement les variétés à incision du bord absente:</u> fleuron ligulé: forme du sommet	<u>Nur Sorten mit fehlendem Rand- einschnitt:</u> zungen- förmige Blüte: Form der Spitze	<u>Sólo variedades sin incisión en el borde:</u> flor ligulada: forma del ápice		
QL	rounded	arrondi	abgerundet	redondeada	Comitan	1
	truncate	tronqué	stumpf	truncada	Huejutla	2
22. (*)	Outer ligulate floret: length	Fleuron ligulé externe: longueur	Äußere zungen- förmige Blüte: Länge	Flor ligulada exterior: longitud		
QN	short	court	kurz	corta	Mixe	3
	medium	moyen	mittel	media	Huave	5
	long	long	lang	larga	Seri	7
23. (*)	Outer ligulate floret: width	Fleuron ligulé externe: largeur	Äußere zungen- förmige Blüte: Breite	Flor ligulada exterior: anchura		
QN	narrow	étroit	schmal	estrecha	N'yu	3
	medium	moyen	mittel	media	Kut'a	5
	broad	large	breit	ancha	Yohtó	7
24. (*)	Flower head: number of colors	Capitule: nombre de couleurs	Blütenstand: Anzahl Farben	Capítulo: número de colores		
QL	one	une	eine	uno	Tangerine Orange, Vanilla	1
	two	deux	zwei	dos	Bee, Monsieur Majestic	2

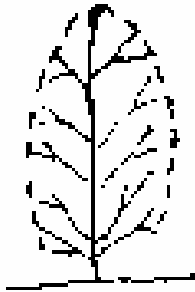
	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25. (*)	<u>Only varieties with one flower head</u> <u>color: flower head: color</u>	<u>Seulement les variétés à capitule d'une couleur:</u> <u>capitule: couleur</u>	<u>Nur einfarbige Sorten:</u> Blütenstand: Farbe	<u>Sólo variedades con capítulo de un sólo color:</u> capítulo: color		
PQ	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (sírvasse indicar el número de referencia)		
26. (*) (+)	<u>Only varieties with two flower head colors:</u> tubulate and/or tubuligulate <u>floret: number of colors</u>	<u>Seulement les variétés à capitule de deux couleurs:</u> fleuron tubulé ou tubuligulé: nombre de couleurs	<u>Nur zweifarbige Sorten:</u> röhrenförmige und/oder röhren-zungenförmige Blüte: Anzahl Farben	<u>Sólo variedades con capítulo de dos colores:</u> flósculo/ flor tubular-ligulada: número de colores		
QL	one	une	eine	uno		1
	two	deux	zwei	dos		2
27. (*) (+)	<u>Tubulate and/or tubuligulate floret: main color</u>	<u>Fleuron tubulé et/ou tubuligulé: couleur principale</u>	<u>Röhrenförmige und/oder röhren-zungenförmige Blüte: Hauptfarbe</u>	<u>Flósculo y/o flor tubular-ligulada: color principal</u>		
PQ	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (sírvasse indicar el número de referencia)		
28. (*)	<u>Only varieties with tubulate and/or tubuligulate florets with two colors:</u> tubulate and/or tubuligulate floret: <u>secondary color</u>	<u>Seulement les variétés à fleurons tubulés ou tubuligulés de deux couleurs:</u> fleuron tubulé ou tubuligulé: couleur <u>secondaire</u>	<u>Nur Sorten mit zweifarbigen röhrenförmigen und/oder röhren-zungenförmigen Blüten:</u> röhrenförmige und/oder röhren-zungenförmige Blüte: <u>Sekundärfarbe</u>	<u>Sólo variedades de flósculos/flores tubular-liguladas de dos colores:</u> flósculos y/o flor tubular-ligulada: color <u>secundario</u>		
PQ	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (sírvasse indicar el número de referencia)		
29. (*) (+)	<u>Only varieties with two flower head colors:</u> ligulate <u>floret: number of colors</u>	<u>Seulement les variétés à capitule de deux couleurs:</u> fleuron ligulé: nombre de couleurs	<u>Nur zweifarbige Sorten:</u> zungenförmige Blüte: Anzahl Farben	<u>Sólo variedades de capítulo de más de un color:</u> flor ligulada: número de colores		
QL	one	une	eine	uno	Tangerine Orange, Vanilla	1
	two	deux	zwei	dos	Bonanza Harmony, Granada	2

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30. (*) (+)	<u>Only varieties with two flower head colors: ligulate floret: main color</u>	<u>Seulement les variétés à capitule de deux couleurs: fleuron ligulé: couleur principale</u>	<u>Nur zweifarbige Sorten: zungenförmige Blüte: Hauptfarbe</u>	<u>Sólo variedades de capítulo de dos colores: flor ligulada: color principal</u>		
PQ	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (sírvasse indicar el número de referencia)		
31. (*)	<u>Only varieties with two ligulate floret colors: ligulate floret: secondary color</u>	<u>Seulement les variétés à fleuron ligulé de deux couleurs: fleuron ligulé: couleur secondaire</u>	<u>Nur Sorten mit zweifarbigen zungenförmigen Blüten: zungenförmige Blüte: Sekundärfarbe</u>	<u>Sólo variedades con flor ligulada de dos colores: flor ligulada: color secundario</u>		
PQ	whitish	blanchâtre	weißlich	blanquecino		1
	light yellow	jaune clair	hellgelb	amarillo claro		2
	dark yellow	jaune foncé	dunkelgelb	amarillo oscuro	San Pablo	3
	light orange	orange clair	hellorange	naranja claro		4
	medium orange	orange moyen	mittelorange	naranja medio		5
	red	rouge	rot	rojo	Santa María	6
	brown	brun	braun	marrón		7
32. (+)	<u>Only varieties with two ligulate floret colors: ligulate floret: distribution of color</u>	<u>Seulement les variétés à fleuron ligulé de deux couleurs: fleuron ligulé: distribution des couleurs</u>	<u>Nur Sorten mit zweifarbigen zungenförmigen Blüten: zungenförmige Blüte: Verteilung der Farbe</u>	<u>Sólo variedades con flor ligulada de dos colores: flor ligulada: distribución cromática</u>		
PQ	type 1	type 1	Typ 1	tipo 1	España Red, Marietta	1
	type 2	type 2	Typ 2	tipo 2	Monsieur Majestic	2
	type 3	type 3	Typ 3	tipo 3	Sevilla Bicolour Rot Gelb	3

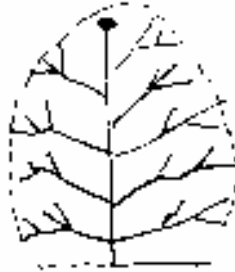
	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33. (+)	<u>Only varieties with type 1 ligulate floret color distribution:</u> ligulate floret: size of central color zone	<u>Seulement les variétés à distribution des couleurs de type 1 sur le fleuron ligulé:</u> fleuron ligulé: taille de la zone de couleur centrale	<u>Nur Sorten mit Verteilung der Farbe vom Typ 1 an der zungenförmigen Blüte:</u> zungenförmige Blüte: Größe der mittleren Farbzone	<u>Sólo variedades con distribución cromática de la flor ligulada de tipo 1:</u> flor ligulada: tamaño de la zona cromática central		
QN	very small	très petite	sehr klein	muy pequeña	Scarlet Sophia	1
	small	petite	klein	pequeña	Disco Flamme, Red Marietta	3
	medium	moyenne	mittel	media	Pascal	5
	large	large	groß	grande	Granada, Sophia Yellow	7
	very large	très large	sehr groß	muy grande	Aurora Jaune	9
34. (*)	Time of beginning of flowering	Époque du début de floraison	Zeitpunkt des Blühbeginns	Época de inicio de la floración		
QN	early	précoce	früh	temprana	Double Mistral, Hero Flamme	3
	medium	moyenne	mittel	media	Aurora Fold, Cupidon Double	5
	late	tardive	spät	tardía	Discovery Orange, Inca Yellow	7

8. Explanations on the Table of Characteristics

Ad. 4: Plant: growth habit



1
upright

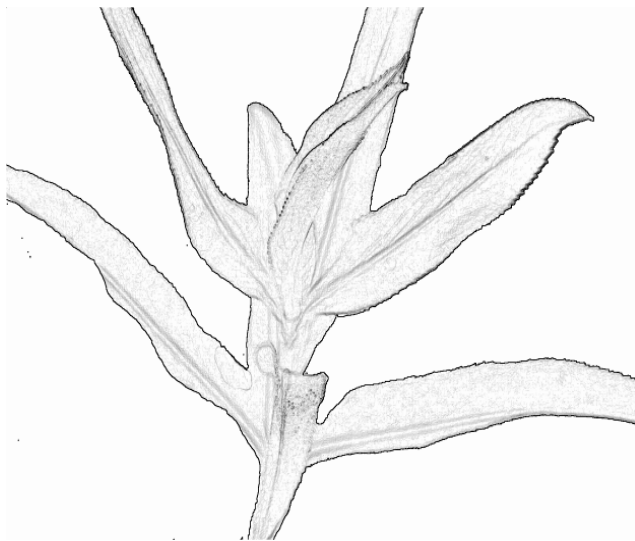


3
semi upright

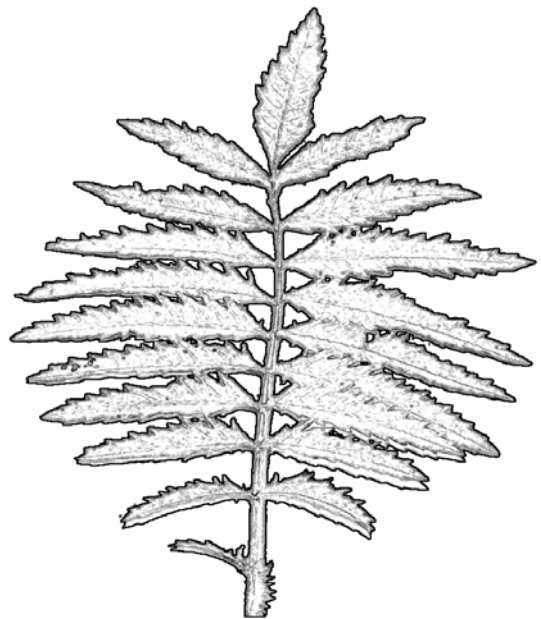


5
spreading

Ad. 8: Leaf: type



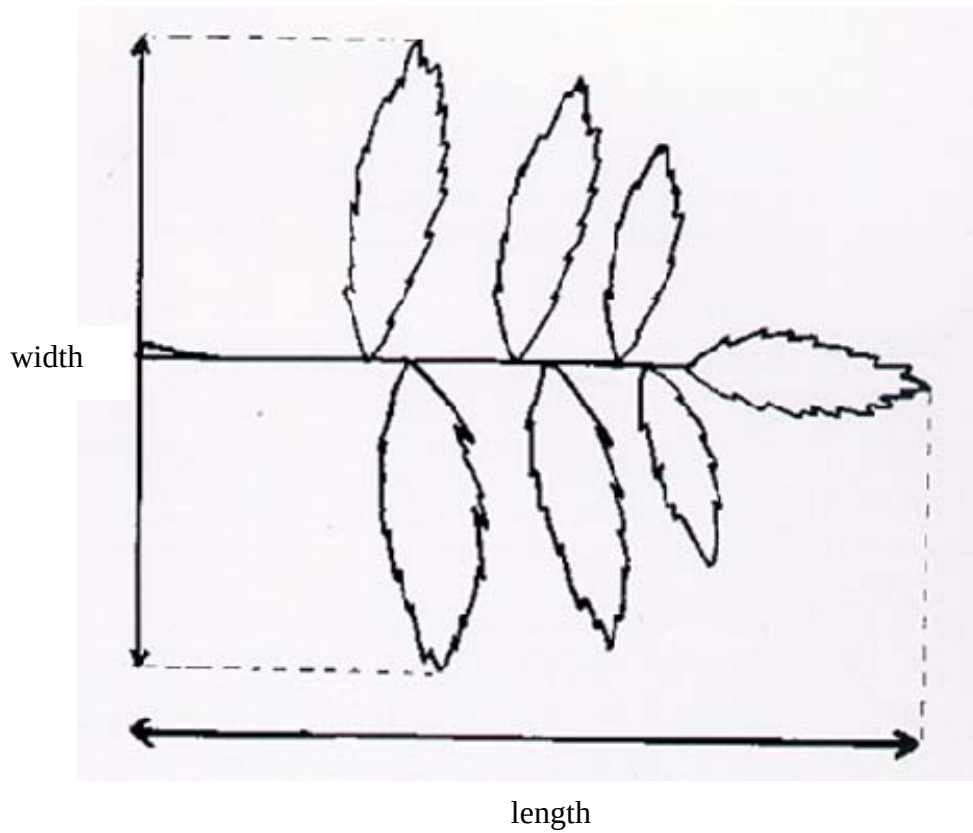
1
simple



2
pinnate

Ad. 9: Leaf: length

Ad. 10: Leaf: width



Observations should be made on a leaf in the middle zone of the main stem at the time of full flowering.

Ad. 13: Leaf margin: depth of indentations

In the case of pinnate leaves, the observations should be made on a terminal leaflet.

Ad. 15: Flower head: floret type

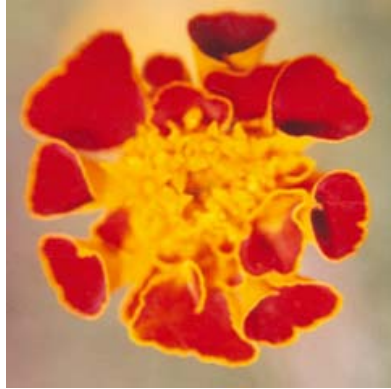
The floret can be ligulate, tubuligulate or tubulate and can be inserted in the disc (central zone) or in the periphery (radial zone) of the flower head.



Ad. 18: Ligulate floret: shape



1
flat



2
intermediate



3
trumpet

Ad. 19: Ligulate floret: incision of margin

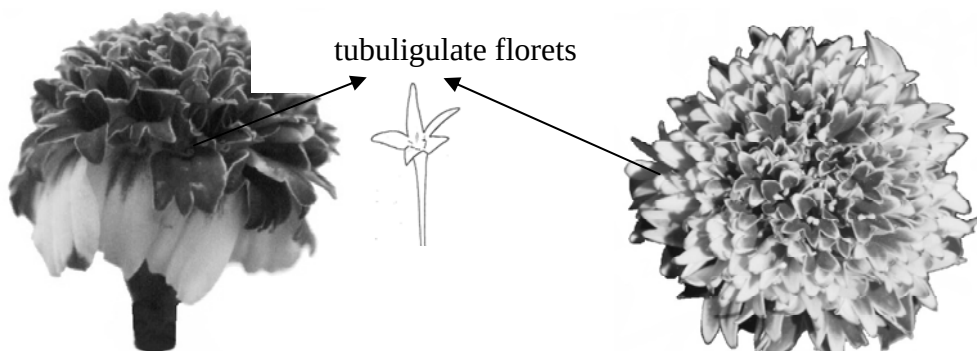


1
absent



9
present

Ad. 26: Only varieties with two flower head colors: tubulate and/or tubuligulate floret:
number of colors



1
one

2
two

Ad. 27: Tubulate and/or tubuligulate floret: main color

The main color may be the only color. In varieties with two tubulate and/or tubuligulate floret colors, the main color is the color with the largest surface area.

Ad. 29: Only varieties with two flower head colors: ligulate floret: number of colors



1
one

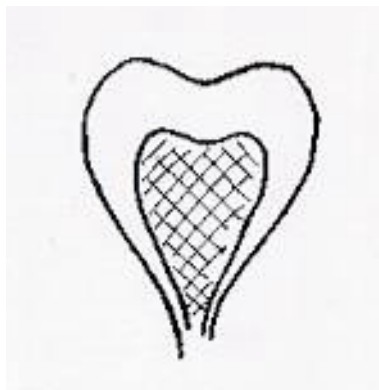


2
two

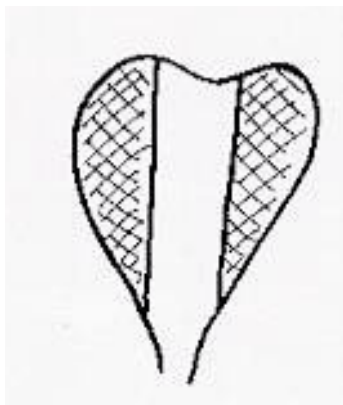
Ad. 30: Only varieties with two flower head colors: ligulate floret: main color

The main color may be the only color. In varieties with two ligulate floret colors, the main color is the color with the largest surface area.

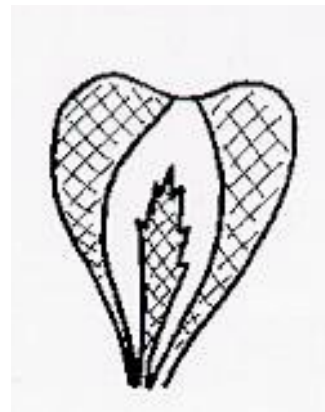
Ad. 32: Only varieties with two ligulate floret colors: ligulate floret: distribution of color



1
type 1



2
type 2

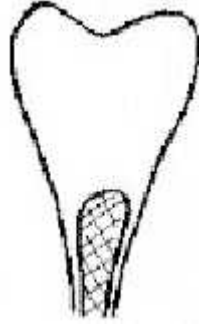


3
type 3

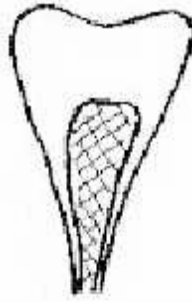
Ad. 33: Only varieties with type 1 ligulate floret color distribution: ligulate floret: size of central color zone



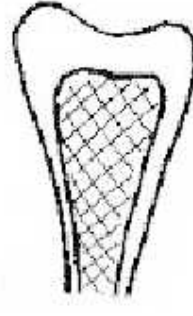
1
very small



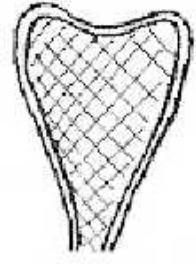
2
small



3
medium



4
large



5
very large

9. Literature

Neher, R.T., 1966: Monograph of the genus *Tagetes* (Compositae). Ph.D. Thesis, Indiana University, Bloomington, Indiana, US, 306 pp.

Serrato C., M.A., 1990: Contribución al conocimiento de las características florales del cempoalxóchitl (*Tagetes* sp.). Rev. Chapingo XV, MX, pp. (71-72):151-155.

Serrato C., M.A. y A. Segura, M., 1994: Variación fenotípica en progenies a partir de inflorescencias de *Tagetes erecta* L. Rev. Chapingo serie Horticultura, pp. 1:159-161.

Serrato C., M..A., 2006: Manual Gráfico para la Descripción Varietal de *Tagetes*, SNICS, MX.

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	Tagetes L.	
1.2 Common Name	Marigold	
Species (please complete)		
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) []

(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 Method of propagating the variety

4.2.1 Seed-propagated varieties

(a) Self-pollination []

(b) Cross-pollination []

(c) Hybrid []

(d) Other (please provide details) []

4.2.2 Vegetatively propagated varieties

(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 Plant: height (3)		
very short	Cupidon, Golden Boy	1[]
short	Mistral, Spry	3[]
medium	Golden Jubilee, Monsieur Majestic	5[]
tall	Jaune Supreme, Sourire	7[]
very tall	Lemon Queen, Orange Prince	9[]
5.2 Leaf: type (8)		
simple	Morelos	1[]
pinnate	Tepoztlán	2[]
5.3 Leaf: intensity of green color (11)		
light	Fework Jaune	3[]
medium	Sendero	5[]
dark	Bonanza Gelb	7[]
5.4 Flower head: floret type (15)		
all tubulate	Mexicana I	1[]
tubulate and ligulate	Bonanza, Little Hero Spry, Tecuanulco	2[]
tubuligulate and ligulate	Ecatzingo, Spry	3[]
all tubuligulate	Lemon Queen, Orange Prim	4[]
all ligulate	Tzapinco	5[]
5.5(i) <u>Only varieties with one flower head color:</u> flower head: color (25)		
RHS Colour Chart (indicate reference number)		
.....		

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

Characteristics	Example Varieties	Note
5.5(ii) (25) <u>Only varieties with one flower head color:</u> flower head: color		
whitish	Vanilla, Blanca	1[]
light yellow	Bonanza Gelb	2[]
dark yellow	Excel Gelb	3[]
light orange	Inca Orange	4[]
medium orange	Tangerine Orange	5[]
red	Tequexquináhuac	6[]
brown		7[]
5.6(i) (27) <u>Tubulate and/or tubuligulate floret: <u>main</u> color</u>		
RHS Colour Chart (indicate reference number)		
.....		
5.6(ii) (27) <u>Tubulate and/or tubuligulate floret: <u>main</u> color</u>		
whitish		1[]
light yellow		2[]
dark yellow		3[]
light orange		4[]
medium orange		5[]
red		6[]
brown		7[]
5.7(i) (30) <u>Only varieties with two flower head colors:</u> ligulate floret: <u>main</u> color		
RHS Colour Chart (indicate reference number)		
.....		

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

Characteristics	Example Varieties	Note
5.7(ii) <u>Only varieties with two flower head colors:</u> ligulate floret: (30) <u>main</u> color		
whitish		1[]
light yellow		2[]
dark yellow		3[]
light orange		4[]
medium orange		5[]
red		6[]
brown		7[]

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
<i>Example</i>	<i>Flower head: floret type</i>	<i>all tubulate</i>	<i>tubulate and ligulate</i>
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 Use

(a) cut flower []

(b) pot plant []

(c) bedding plant []

(d) industrial (please provide details) []

.....

(e) other (please provide details) []

.....

7.4 Other information

A representative color photograph 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]