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INTERNATIONAL UNION
FOR THE PROTECTION
OF NEW VARIETIES OF
PLANTS

UNION INTERNATIONALE
POUR LA PROTECTION
DES OBTENTIONS
VÉGÉTALES

INTERNATIONALER
VERBAND ZUM SCHUTZ
VON PFLANZEN-
ZÜCHTUNGEN

UNIÓN INTERNACIONAL
PARA LA PROTECCIÓN
DE LAS OBTENCIÓNES
VEGETALES

DRAFT

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

CELOSIA

(Celosia L.)

These Guidelines should be read in conjunction with document TG/1/2, which contains explanatory notes on the general principles on which the Guidelines have been established.

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I. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Celosia* L. of the family Amaranthaceae.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. As a minimum, the following quantity of material is recommended:

vegetatively propagated varieties: 50 rooted cuttings;
seed propagated varieties: 2 grams.

2. The material supplied should be visibly healthy, not lacking in vigor or affected by any important pests or diseases.

3. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

1. The tests should normally be conducted over one growing cycle. If the examination cannot be completed in one growing cycle, the test should be extended for a second growing cycle.

2. The test should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The test should be carried out in the greenhouse under the following growing conditions:

Seed propagated varieties:

Sowing method: Preferably direct seeding (because of taproot).

For germination, seeds should be lightly covered with vermiculite.

Temperature immediately after sowing: 22-24°C.

Ventilation temperature: Day ca. 27°C, night ca. 32°C.

After ca. 1 week:

Temperature: Day ca. 20°C, night ca. 17°C.

Ventilation temperature during the day: Ca. 21-32°C.

Ventilation temperature during the night: Ca. 18°C.

Humidity:	90-95%.
The top layer of the soil must be kept moist.	
Temperature after ca. 2 to 3 weeks:	Day ca. 19°C, night ca. 17°C.
Ventilation temperature:	Day ca. 20°C, night ca. 18°C.
Humidity:	Ca. 80-85%.
Temperature 6 to 8 weeks after sowing:	Day ca. 16°C, night ca. 15°C.
Ventilation temperature:	Day ca. 17°C, night ca. 16°C.
Humidity:	Ca. 80-85%.
Vegetatively propagated varieties:	
Temperature:	Immediately after planting, ca. 20°C to 25°C, slowly decreasing to ca. 16°C.
Humidity:	Ca. 80-85%.
Irrigation should be provided by overhead sprinkling until the flowers appear.	
After appearance of the flowers, the soil should be kept drier and sprinkling should be stopped to reduce the risk of botrytis infection.	
Base fertilization:	None.
Fertilization during growth:	None.
Substrate:	Poor substrate, well drained.
Plant spacing:	Ca. 32 pl/ m ² , max. 64 pl/m ²
Shading:	None, Celosia is very photo-sensitive.
Most Celosia varieties need to be supported by 2 to 3 layers of wire netting.	

The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing cycle. Each test should include a total of 50 plants. Separate plots for observation and for measuring should only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

IV. Methods and Observations

1. All observations determined by measurement or counting should be made on 10 plants or parts taken from each of 10 plants.

2. Celosia is self-pollinated, and the rules for assessment of uniformity in seed propagating varieties are the same as for vegetatively propagated varieties. For the assessment of uniformity a population standard of 1% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 50 plants, the maximum number of off-types allowed would be 2.

3. Unless otherwise indicated, all observations should be made on plants with a full-grown inflorescence. All observations on the leaf should be made on a full-grown leaf, located at the middle third of the stem and all observations on the flower should be made at the beginning of anther dehiscence.

4. 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 tolerance set out in British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.

2. It is recommended that the competent authorities use the following characteristics for grouping varieties:

- (a) Inflorescence: color (characteristic 24)

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.

2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

3. Legend:

(*) Characteristics that should be used on all varieties in every growing cycle over which examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

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

VII. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteresticas

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplos	Note/ Nota
1. (*)	Plant: height	Plante: hauteur	Pflanze: Höhe	Planta: altura	
	very short	très basse	sehr niedrig	muy baja	Super Dwarf Kimono Orange 1
	short	basse	niedrig	baja	Century Rose 3
	medium	moyenne	mittel	media	Martine 5
	tall	haute	hoch	alta	Bombay 7
	very tall	très haute	sehr hoch	muy alta	
2. (*)	Stem: thickness	Tige: grosseur	Stiel: Dicke	Tallo: espesor	
	thin	fine	dünn	delgado	Yellow Flame 3
	medium	moyenne	mittel	medio	Bombay Gold 5
	thick	grosse	dick	grueso	Boscorsun 7
3. (*)	Stem: presence of anthocyanin coloration at base	Tige: présence de pigmentation anthocyane à la base	Stiel: Vorhandensein von Anthocyansfärbung an der Basis	Tallo: presencia de pigmentación antociánica en la base	
	absent	absente	fehlend	ausente	Yellow Flame 1
	present	présente	vorhanden	presente	Bombay, Purple Martine 9
4. (*)	Stem: intensity of anthocyanin coloration at base	Tige: intensité de la pigmentation anthocyane à la base	Stiel: Intensität der Anthocyansfärbung an der Basis	Tallo: intensidad de la pigmentación antociánica en la base	
	very weak	très faible	sehr gering	muy débil	Bombay Yellow, Yellow Flame 1
	weak	faible	gering	débil	Bombay Gold 3
	medium	moyenne	mittel	media	Boscorcass 5
	strong	forte	stark	fuerte	Bombay, Bombay Purple 7
	very strong	très forte	sehr stark	muy fuerte	Enterprise Wine-red 9

	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
5. <small>(*)</small>	Stem: color of basal part	Tige: couleur de la partie basale	Stiel: Farbe des basalen Teils	Tallo: color de la parte basal		
	light green	vert clair	hellgrün	verde claro	Enterprise White	1
	medium green	vert moyen	mittelgrün	verde medio		2
	dark green	vert foncé	dunkelgrün	verde oscuro		3
	yellow	jaune	gelb	amarillo	Celrayel, Martine Salmon	4
	orange	orange	orange	naranja	Bombay Salmon, Super Dwarf Kimono Orange	5
	pinkish red	rouge rosé	blaßrosarot	rojo rosáceo	Super Dwarf Kimono Cherry-red	6
	purple red	rouge pourpre	purpurrot	rojo púrpura	Celkopured, Enterprise Wine-red	7
6. <small>(*)</small>	Stem: color of upper part	Tige: couleur de la partie supérieure	Stiel: Farbe des Oberteils	Tallo: color de la parte superior		
	light green	vert clair	hellgrün	verde claro	Bombay Rose, Celrayel	1
	medium green	vert moyen	mittelgrün	verde medio	Martine Salmon	2
	dark green	vert foncé	dunkelgrün	verde oscuro		3
	yellow	jaune	gelb	amarillo		4
	orange	orange	orange	naranja		5
	pinkish red	rouge rosé	blaßrosarot	rojo rosáceo	Celkopured	6
	purple red	rouge pourpre	purpurrot	rojo púrpura	Super Dwarf Kimono Red	7
7. <small>(*)</small>	Stem: shape in cross section	Tige: forme de la section transversale	Stiel: Form im Querschnitt	Tallo: forma de la sección transversal		
	circular	arrondie	rund	circular	Enterprise White	1
	flattened	aplatie	abgeflacht	aplanada	Boscocass	2
8. <small>(*)</small>	Stem: ribs	Tige: côtes	Stiel: Rippen	Tallo: acostillado		
	absent	absentes	fehlend	ausente	Martine Pink, Startrek lilac	1
	present	présentes	vorhanden	presente		9

	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
9. (*)	Stem: flowering laterals	Tige: rameaux florifères	Stiel: blühende Triebe	Tallo: floración lateral		
	absent	absents	fehlend	ausente	Bombay Pink, Boscorsun	1
	present	présents	vorhanden	presente	Enterprise White, Startrek Lilac	9
10. (*)	Petiole: length	Pétiole: longueur	Blattstiell: Länge	Pecíolo: longitud		
	short	court	kurz	corto	Celkopured	3
	medium	moyen	mittel	medio	Bombay	5
	long	long	lang	largo	Enterprise White	7
11. (*)	Petiole: presence of anthocyanin coloration	Pétiole: présence de pigmentation anthocyanique	Blattstiell: Vorhandensein von Anthocyanfärbung	Pecíolo: presencia de pigmentación antociánica		
	absent	absente	fehlend	ausente	Bombay Rose, Celrayel	1
	present	présente	vorhanden	presente	Caripe, Celkopured	9
12. (*)	Leaf blade: length	Limbe: longueur	Blattspreite: Länge	Limbo: longitud		
	short	court	kurz	corto	Bombay Fire	3
	medium	moyen	mittel	medio	Martine	5
	long	long	lang	largo	Bombay Rose, Caripe	7
13. (*)	Leaf blade: width	Limbe: largeur	Blattspreite: Breite	Limbo: anchura		
	narrow	étroit	schmal	estrecho	Bombay Fire	3
	medium	moyen	mittel	medio	Bombay, Caripe, Martine, Salmon	5
	broad	large	breit	ancho	Bombay Rose, Enterprise White	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14. (*)	Leaf blade: shape	Limbe: forme	Blattspreite: Form	Limbo: forma		
	narrow elliptic	elliptique étroit	schmal elliptisch	elíptico estrecho	Sharon	1
	elliptic	elliptique	elliptisch	elíptico	Bombay Rose	2
	ovate	ovale	eiförmig	oval	Bombay Purple	3
	broad ovate	ovale large	breit eiförmig	oval ancho		4
15. (*) (+)	Leaf blade: shape of apex	Limbe: forme du sommet	Blattspreite: Form der Spitze	Limbo: forma del ápice		
	acute	aigu	spitz	agudo	Caripe, Sharon	1
	short acuminate	court acuminé	kurz zugespitzt	acuminado corto	Bombay Salmon	2
	long acuminate	longuement acuminé	lang zugespitzt	acuminado largo	Celkopured	3
16. (*)	Leaf blade: color	Limbe: couleur	Blattspreite: Farbe	Limbo: color		
	light green	vert clair	hellgrün	verde claro	Bombay Salmon, Enterprise White	1
	medium green	vert moyen	mittelgrün	verde medio		2
	dark green	vert foncé	dunkelgrün	verde oscuro	Celkopured	3
	greenish red	rouge verdâtre	grünlichrot	rojo verdoso	Flamingo Feather	4
	red purple	pourpre rouge	rotpurpur	púrpura rojado		5
17. (*)	Leaf blade: presence of anthocyanin coloration of main vein	Limbe: présence de pigmentation anthocyane de la nervure principale	Blattspreite: Vorhandensein von Anthocyanfärbung der Hauptader	Limbo: presencia de pigmentación antociánica del nervio central		
	absent	absente	fehlend	ausente	Enterprise White	1
	present	présente	vorhanden	presente	Celkopured	9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
18. (*) Leaf blade: blistering	Limbe: cloquère	Blattspreite: Blasigkeit	Limbo: abullonado		
absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Bombay Pink	1
weak	faible	gering	débil	Celrayel, Enterprise Wine-red, Startrek Lilac	3
medium	moyenne	mittel	medio	Bombay Rose, Celkopured	5
strong	forte	stark	fuerte	Enterprise White	7
very strong	très forte	sehr stark	muy fuerte		9
19. (*) Leaf blade: undulation of margin	Limbe: ondulation du bord	Blattspreite: Randwellung	Limbo: ondulación del borde		
absent	absente	fehlend	ausente	Bombay Rose, Enterprise White	1
present	présente	vorhanden	presente		9
20. (*) Leaf blade: curvature of longitudinal axis	Limbe: courbure de l'axe longitudinal	Blattspreite: Biegung der Längsachse	Limbo: curvatura del eje longitudinal		
upwards	oblique vers le haut	nach oben	hacia arriba		1
straight	droit	gerade	recto		2
downwards	oblique vers le bas	nach unten	hacia abajo		3
21. (*) Inflorescence: main shape (+)	Inflorescence: forme principale	Blütenstand: Hauptform	Inflorescencia: forma principal		
spicate	spiciforme	ährenförmig	espícieforme	Enterprise Wine-red, Flamingo Feather	1
plumose	plumeuse	federähnlich	plumosa	Hiryu no.2, Kimono Cherry-red	2
paniculate	paniculée	rispenartig	paniculada	Gerana Orange	3
cristate	cristulée	kammförmig	en forma de cresta	Bombay Rose, Martine	4

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22. (*)	Inflorescence: length of main inflorescence	Inflorescence: longueur de l'inflorescence principale	Blütenstand: Länge des Hauptblütenstandes	Inflorescencia: longitud de la inflorescencia principal		
	short	courte	kurz	corta	Enterprise Salmon, Martine Pink	3
	medium	moyenne	mittel	media	Bombay Salmon	5
	long	longue	lang	larga	Caripe	7
23. (*)	Inflorescence: width of main inflorescence	Inflorescence: largeur de l'inflorescence principale	Blütenstand: Breite des Hauptblütenstandes	Inflorescencia: anchura de la inflorescencia principal		
	narrow	étroite	schmal	estrecha	Caripe, Enterprise Wine-red	3
	medium	moyenne	mittel	media	Bombay Fire, Martine Pink	5
	broad	large	breit	ancha	Bombay Salmon, Boscorcur	7
24. (*)	Inflorescence: color	Inflorescence: couleur	Blütenstand: Farbe	Inflorescencia: color		
	white	blanche	weiß	blanca	Enterprise White	1
	green	verte	grün	verde		2
	yellow	jaune	gelb	amarilla	Martine Yellow	3
	orange	orange	orange	naranja	Super Dwarf Kimono Orange	4
	orange pink	rose orangée	orangerosa	rosa anaranjada		5
	pink	rose	rosa	rosa	Bombay Rose	6
	red	rouge	rot	roja	Red Chief	7
	purple	violette	purpur	púrpura		8

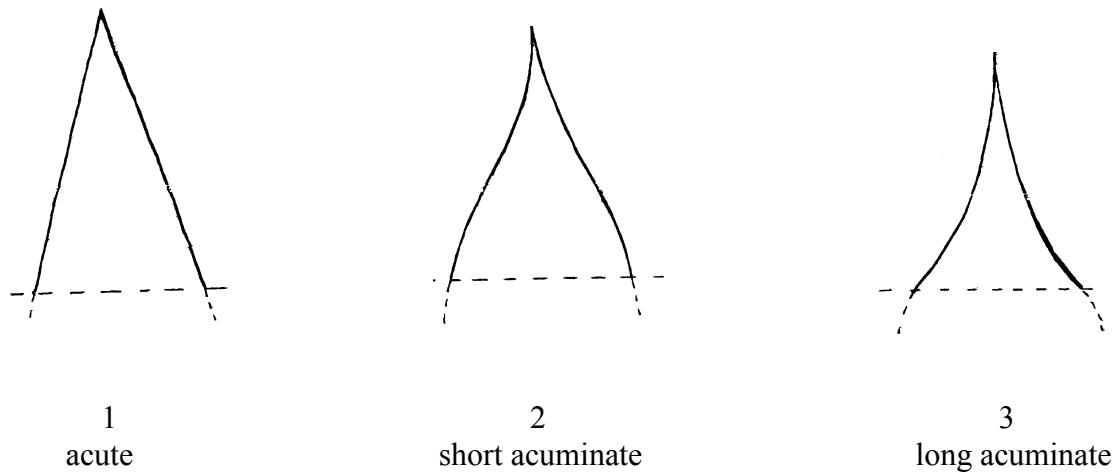
English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
25. (*) (+)	Cristate group only: Groupe des cristulés inflorescence: color uniquement: of prophylls on edge of top	Nur kammförmige Gruppe: Blütenstand: Farbe der Vorblätter am Rand der Spitze	Sólo para el grupo en forma de cresta: inflorescencia: color de los profilos en el borde de la parte superior		
white	blanches	weiß	blancos		1
green	vertes	grün	verdes		2
yellow	jaunes	gelb	amarillos	Bombay Gold, Bombay Yellow	3
orange	oranges	orange	naranjas	Bombay Orange	4
orange pink	rose orangées	orangerosa	rosa anaranjados	Boscorora	5
pink	roses	rosa	rosas	Bombay Rose	6
red	rouges	rot	rojos	Bombay Fire	7
purple	violettes	purpur	púrpura		8
26. (*) (+)	Cristate group only: Groupe des cristulés inflorescence: color uniquement: of prophylls on distal part (excluding edge of top)	Nur kammförmige Gruppe: Blütenstand: Farbe der Vorblätter am unteren Teil (ohne Rand der Spitze)	Sólo para el grupo en forma de cresta: inflorescencia: color de los profilos en la parte distal (excluido el borde de la parte superior)		
white	blanches	weiß	blancos	Bombay Gold, Bombay Yellow	1
green	vertes	grün	verdes		2
yellow	jaunes	gelb	amarillos		3
orange	oranges	orange	naranjas		4
orange pink	rose orangées	orangerosa	rosa anaranjados		5
pink	roses	rosa	rosas	Bombay Orange, Bombay Pink	6
red	rouges	rot	rojos		7
purple	violettes	purpur	púrpura	Bombay Fire	8

	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
27. (*)	Cristate group only: inflorescence: degree of undulation (viewed from above)	Groupe des cristulés uniquement: inflorescence: degré d'ondulation (en vue de dessus)	Nur kammförmige Gruppe: Blütenstand: Ausprägung der Wellung (von oben gesehen)	Sólo para el grupo en forma de cresta: inflorescencia: grado de ondulación (visto desde arriba)		
	weak	faible	gering	débil	Bombay Rose	3
	medium	moyen	mittel	medio	Bombay Fire, Celrayel	5
	strong	élevé	stark	fuerte	Bombay Dark-red, Boscorsun	7
28. (*)	Tepal: shape	Tépale: forme	Perigonblatt: Form	Tépalo: forma		
	elliptic	elliptique	elliptisch	elíptica	Enterprise White, Enterprise Wine-red	1
	ovate	ovale	eiförmig	oval	Martine, Martine Scarlet	2
29. (*)	Tepal: color of median	Tépale: couleur de la partie médiane	Perigonblatt: Farbe des medianen Teiles	Tépalo: color de la parte media		
	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (préciser le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indiques el número de referencia)		
30. (*)	Stamen: color of filament	Étamine: couleur du filament	Staubgefäß: Farbe des Staubfadens	Estambre: color del filamento		
	white	blanc	weiß	blanco	Enterprise White, Martine Scarlet	1
	green	vert	grün	verde		2
	yellow	jaune	gelb	amarillo		3
	orange	orange	orange	naranja		4
	orange pink	rose orangé	orangerosa	rosa anaranjado	Boscorkir	5
	pink	rose	rosa	rosa	Bombay Orange, Canaima	6
	red	rouge	rot	rojo		7
	purple	violet	purpur	púrpura	Bombay Purple, Boscorcass	8

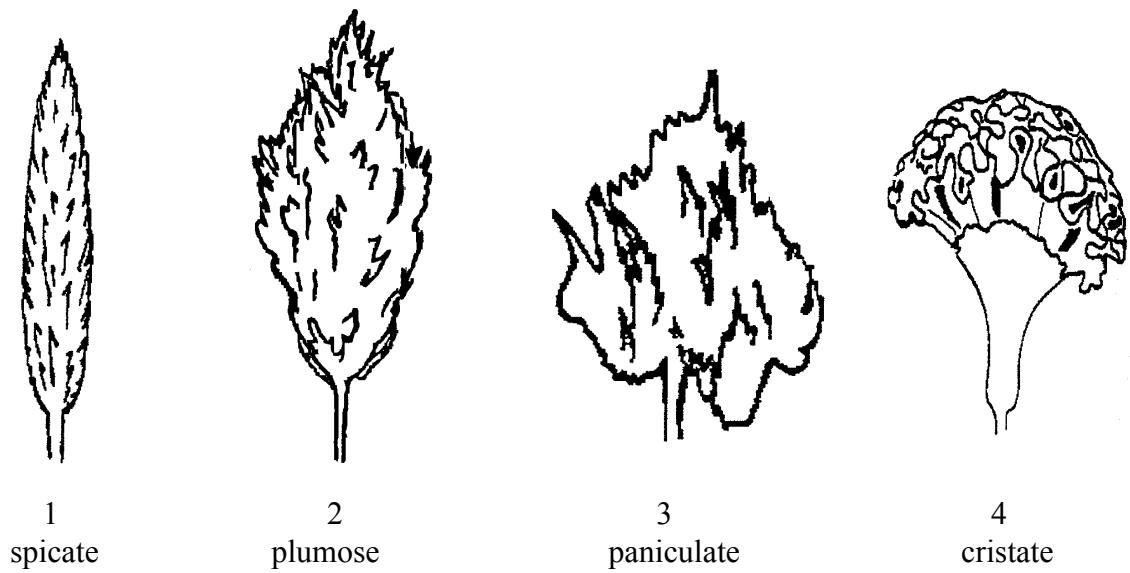
English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
31. (*)	Pistil: color of style	Pistil: couleur du style	Stempel: Farbe des Griffels	Pistilo: color del estilo	
white	blanc	weiß	blanco		1
green	vert	grün	verde		2
yellow	jaune	gelb	amarillo	Martine Yellow, Yellow Flame	3
orange	orange	orange	naranja		4
orange pink	rose orangé	orangerosa	rosa anaranjado	Bombay Salmon, Bombay Velvet	5
pink	rose	rosa	rosa	Martine Salmon, Martine Scarlet	6
red	rouge	rot	rojo		7
purple	violet	purpur	púrpura	Bombay Purple	8
32. (*)	Pistil: color of stigma	Pistil: couleur du stigmate	Stempel: Farbe der Narbe	Pistilo: color del estigma	
white	blanc	weiß	blanco		1
green	vert	grün	verde		2
yellow	jaune	gelb	amarillo		3
orange	orange	orange	naranja		4
orange pink	rose orangé	orangerosa	rosa anaranjado		5
pink	rose	rosa	rosa		6
red	rouge	rot	rojo		7
purple	violet	purpur	púrpura		8

VIII. Explanations on the Table of Characteristics

Ad. 15: Leaf blade: shape of apex

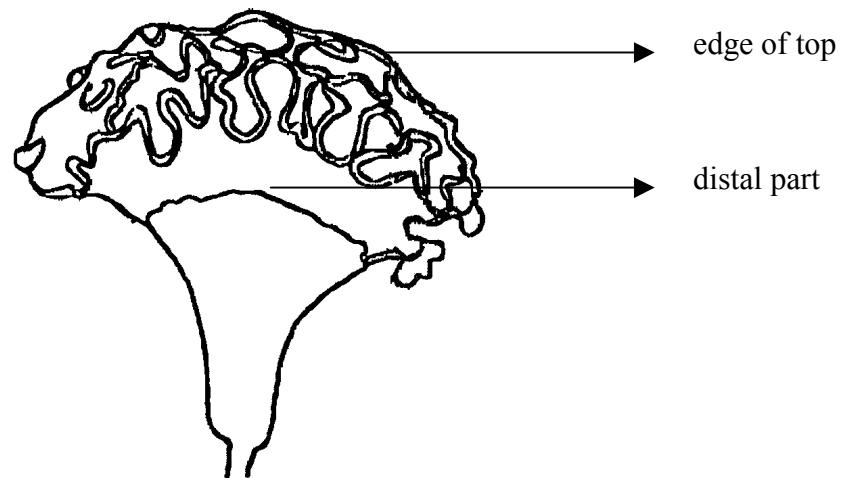


Ad. 21: Inflorescence: main shape



Ad. 25: Cristate group only: inflorescence: color of prophylls on edge of top

Ad. 26: Cristate group only: inflorescence: color of prophylls on distal part (excluding edge of top)



IX. Literature

No specific literature.

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights	
1. Species	<i>Celosia</i> L. CELOSIA
2. Applicant (Name and address)	
3. Proposed denomination or breeder's reference	

4. Information on origin, maintenance and reproduction of the variety

4.1 Origin

(a) Seedling (indicate parent varieties)

.....

[]

(b) Mutation (indicate parent variety)

.....

[]

(c) Discovery (indicate where and when)

.....

[]

(d) Other (specify)

.....

[]

4.2 Method of reproduction

- cuttings

[]

- seed

[]

- other (state method)

[]

4.3 Other information

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the state of expression which best corresponds).

Characteristics	Example Varieties	Note
5.1 Plant: height (1)		
very short	Super Dwarf Kimono Orange	1 []
short	Century Rose	3 []
medium	Martine	5 []
tall	Bombay	7 []
very tall		9 []
5.2 Inflorescence: main shape (21)		
spicate	Enterprise Wine-red, Flamingo Feather	1 []
plumose	Hiryu no.2, Kimono Cherry-red	2 []
paniculate	Gerana Orange	3 []
cristate	Bombay Rose, Martine	4 []
5.3 Inflorescence: color (24)		
white	Enterprise White	1 []
green		2 []
yellow	Martine Yellow	3 []
orange	Super Dwarf Kimono Orange	4 []
orange pink		5 []
pink	Bombay Rose	6 []
red	Red Chief	7 []
purple		8 []

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different ^{o)}	State of expression of similar variety	State of expression of candidate variety

^{o)} In the case of identical states of expressions of both varieties, please indicate the size of the difference.

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

- cut flower []
pot plant []
bedding plant []
other (specify) []

7.3 Other information

A representative color photo of the variety should be added to 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 that question is yes, please attach a copy of such an authorization.

[End of document]