



TG/173/3

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 OBTENCIONES
VEGETALES

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

WITLOOF, CHICORY

*(Cichorium intybus L.
partim)*

GENEVA
2000

Copies of this document are available on request at the price of 10 Swiss francs each, including surface mail, from the Office of UPOV, 34, chemin des Colombettes, P.O. Box 18, 1211 Geneva 20, Switzerland

This document or parts of it may be reproduced, translated and published without obtaining the specific consent of UPOV, provided that the source is acknowledged.

* * * * *



TG/173/3

ORIGINAL: English

DATE: 2000-04-05

**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 OBTENCIONES
VEGETALES**

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

WITLOOF, CHICORY

**(*Cichorium intybus* L.
partim)**

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.

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
I. Subject of these Guidelines	3
II. Material Required	3
III. Conduct of Tests	3
IV. Methods and Observations	3
V. Grouping of Varieties	4
VI. Characteristics and Symbols	4
VII. Table of Characteristics	5
VIII. Explanations on the Table of Characteristics	13
IX. Literature	14
X. Technical Questionnaire	15

I. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Cichorium intybus* L. partim of the family *Compositae*, excluding industrial chicory (TG/172/3) and leaf chicory (TG/154/3).

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. The minimum quantity of seed to be supplied by the applicant in one or several samples should be:

50 g.

The seed should at least meet the minimum requirements for germination capacity, moisture content and purity for marketing seed in the country in which the application is made. The germination capacity should be as high as possible.

2. 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 minimum duration of tests should normally be two independent growing cycles.

2. The tests 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 tests should be carried out under conditions ensuring normal growth. 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 period. Each test should include a total of 100 plants which should be divided between two or more replicates. The same number should be used for forcing. Separate plots for observation and for measuring can 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. Unless otherwise indicated, all observations determined by measurement, weighting or counting should be made on 60 plants or parts taken from each of 60 plants.

2. All observations on the leaf should be made on the full-grown leaf.

3. All observations on the head should be made at the time of harvesting of the heads before exposure to daylight.

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) Leaf: length (characteristic 6)
- (b) Leaf: intensity of green color (characteristic 10)
- (c) Head: length (characteristic 27)
- (d) Head: shape in longitudinal section (characteristic 30)

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 the different characteristics.

3. Legend

(*) Characteristics that should be used on all varieties in every growing period over which the 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/Merkmalestabelle/Tabla de caracteres

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
1. Cotyledon: shape	Cotylédon: forme	Keimblatt: Form	Cotiledón: forma		
rounded	arrondie	abgerundet	redondeada	Bea, Flash, Toner	1
elliptic	elliptique	elliptisch	elíptica	Aline, Daliva	2
2. Cotyledon: shape of tip	Cotylédon: forme de l'apex	Keimblatt: Form der Spitze	Cotiledón: forma del ápice		
truncate	tronquée	stumpf	truncada	Aline, Conrad, Jaz	1
rounded	arrondie	abgerundet	redondeada	Bergère, Videna	2
3. Plant: height at vegetative stage (* (+)	Plante: hauteur au stade végétatif	Pflanze: Höhe im vegetativen Stadium	Planta: altura en estado vegetativo		
short	courte	niedrig	baja		3
medium	moyenne	mittel	media	Flash, Marriott	5
tall	haute	hoch	alta	Dirv	7
4. Foliage: attitude (* (*)	Feuillage: port	Laub: Haltung	Follaje: porte		
erect	dressé	aufrecht	erecto	Dirv	1
semi-erect	demi-dressé	halbaufrecht	semierecto	Flash, Turbo	3
horizontal	horizontal	waagerecht	horizontal		5
5. Leaf: attitude of tip	Feuille: port du sommet	Blatt: Haltung der Spitze	Hoja: porte del extremo		
erect	dressé	aufrecht	erecto		1
semi-erect	demi-dressé	halbaufrecht	semierecto	Turbo	3
horizontal	horizontal	waagerecht	horizontal		5
6. Leaf: length (* (+)	Feuille: longueur	Blatt: Länge	Hoja: longitud		
short	courte	kurz	corta	Carla, Conrad	3
medium	moyenne	mittel	media	Elsa, Flash, Marriott	5
long	longue	lang	larga	Turbo	7
very long	très longue	sehr lang	muy larga	Vilmorin No. 5	9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7. Leaf: width (* (+)	Feuille: largeur	Blatt: Breite	Hoja: anchura		
narrow	étroite	schmal	estrecha	Carla	3
medium	moyenne	mittel	media	Bea, Flash, Zoom	5
broad	large	breit	ancha	Nica, Quartz	7
8. Leaf: ratio length/width	Feuille: rapport longueur/largeur	Blatt: Verhältnis Länge/Breite	Hoja: relación longitud/anchura		
small	petit	klein	pequeña	Vitessa	3
medium	moyen	mittel	media	Bea	5
large	grand	groß	grande	Senator	7
9. Leaf: color (*	Feuille: couleur	Blatt: Farbe	Hoja: color		
only green	seulement verte	nur grün	sólo verde		1
only red	seulement rouge	nur rot	sólo rojo		2
green and red	verte et rouge	grün und rot	verde y rojo		3
10. Leaf: intensity of green color (*	Feuille: intensité de la couleur verte	Blatt: Intensität der Grünfärbung	Hoja: intensidad del color verde		
light	claire	hell	claro	Jaz	3
medium	moyenne	mittel	medio	Bea, Toner	5
dark	foncée	dunkel	oscuro	Conrad, Magic, Zoom	7
11. Leaf: glossiness	Feuille: brillance	Blatt: Glanz	Hoja: brillo		
absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil		1
weak	faible	gering	débil	Flash, Rinof	3
medium	moyenne	mittel	medio	Toner	5
strong	forte	stark	fuerte	Dirv, Magic, Quartz	7
12. Leaf: shape in cross section (*	Feuille: forme en section transversale	Blatt: Form im Querschnitt	Hoja: forma en sección transversal		
concave	concave	konkav	cóncava		1
flat	plane	eben	plana	Zoom	2
convex	convexe	konvex	convexa	Dirv	3

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13. Leaf: blistering (*)	Feuille: cloûre	Blatt: Blasigkeit	Hoja: abullonado		
absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Rinof	1
weak	faible	gering	débil	Flash, Quartz	3
medium	moyenne	mittel	medio		5
strong	forte	stark	fuerte	Monitor, Zoom	7
14. Leaf: anthocyanin coloration of midrib	Feuille: pigmentation anthocyanique de la nervure médiane	Blatt: Anthocyanfärbung der Mittelrippe	Hoja: pigmentación antocianica del nervio central		
absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Dirv, Jaz, Spectra	1
weak	faible	gering	débil	Flash	3
medium	moyenne	mittel	media	Carla, Sigma, Zoom	5
strong	forte	stark	fuerte	Victoria	7
15. Leaf: undulation of margin	Feuille: ondulation du bord	Blatt: Wellung des Randes	Hoja: ondulación del borde		
weak	faible	gering	débil	Venus	3
medium	moyenne	mittel	media	Atlas	5
strong	forte	stark	fuerte	Sigma	7
16. Leaf: incisions of basal part	Feuille : incisions de la partie basale	Blatt: Randeinschnitte des basalen Teiles	Hoja: incisiones de la parte basal		
absent or very weak	absentes ou très faibles	fehlend oder sehr gering	ausente o muy débil		1
weak	faibles	gering	débil	Monitor	3
medium	moyennes	mittel	media	Bea	5
strong	fortes	stark	fuerte	Victoria	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
17. Leaf: incisions of margin of upper third (*)	Feuille: incisions du bord du tiers supérieur	Blatt: Randeinschnitte des oberen Drittels	Hoja: incisiones del margen del tercio superior		
absent or very weak	nulles ou très faibles	fehlend oder sehr gering	ausente o muy débil		1
weak	faibles	gering	débil	Flash, Toner	3
medium	moyennes	mittel	media	Zoom	5
strong	fortes	stark	fuerte	Victoria	7
18. Leaf: depth of incisions of margin of upper third	Feuille: profondeur des incisions du bord du tiers supérieur	Blatt: Tiefe der Randeinschnitte des oberen Drittels	Hoja: profundidad de las incisiones del margen del tercio superior		
shallow	peu profondes	flach	poco profunda	Flash, Zoom	3
medium	moyennes	mittel	media		5
deep	profondes	tief	profunda		7
19. Leaf: shape of tip (+)	Feuille: forme du sommet	Blatt: Form der Spitze	Hoja: forma del extremo		
rounded	arrondi	abgerundet	redondeada	Rumba	1
weakly pointed	légèrement pointu	leicht spitz	ligeramente puntiaguda	Mona	2
strongly pointed	fortement pointu	sehr spitz	muy puntiaguda	Magic	3
20. Root: size	Racine: taille	Rübe: Größe	Raíz: tamaño		
small	petite	klein	pequeño		3
medium	moyenne	mittel	mediano	Bea	5
large	grande	groß	grande	Focus	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
21. Bolting tendency (from an early sowing)	Tendance à la montaison (en semis précoce)	Neigung zum Schossen (bei Frühkultur)	Tendencia a la floración (en siembra temprana)		
absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Carla	1
weak	faible	gering	débil	Bea	3
medium	moyenne	mittel	media	Flash	5
strong	forte	stark	fuerte	Quartz	7
very strong	très forte	sehr stark	muy fuerte	Vilmorin No. 5	9
22. Flowering stem: height	Tige florale: hauteur	Blütenstandstiel: Höhe	Tallo floral: altura		
short	basse	niedrig	baja		3
medium	moyenne	mittel	media	Samba	5
tall	haute	hoch	alta	Final	7
23. Flowering stem: branching	Tige florale: ramification	Blütenstandstiel: Verzweigung	Tallo floral: ramificación		
weak	faible	gering	débil		3
medium	moyenne	mittel	media	Jaz	5
strong	forte	stark	fuerte	Final	7
24. Flowering stem: size of stipule	Tige florale: taille de la stipule	Blütenstandstiel: Größe des Neben- blattes	Tallo floral: tamaño de la estípula		
small	petite	klein	pequeño	Magnum	3
medium	moyenne	mittel	mediano	Bea	5
large	grande	groß	grande	Maraichere	7
25. Flowering stem: dentation of stipule	Tige florale: denticulation de la stipule	Blütenstandstiel: Zählung des Nebenblattes	Tallo floral: dentado de la estípula		
small	petite	klein	pequeño	Flash	3
medium	moyenne	mittel	mediano	Terosa	5
large	grande	groß	grande		7

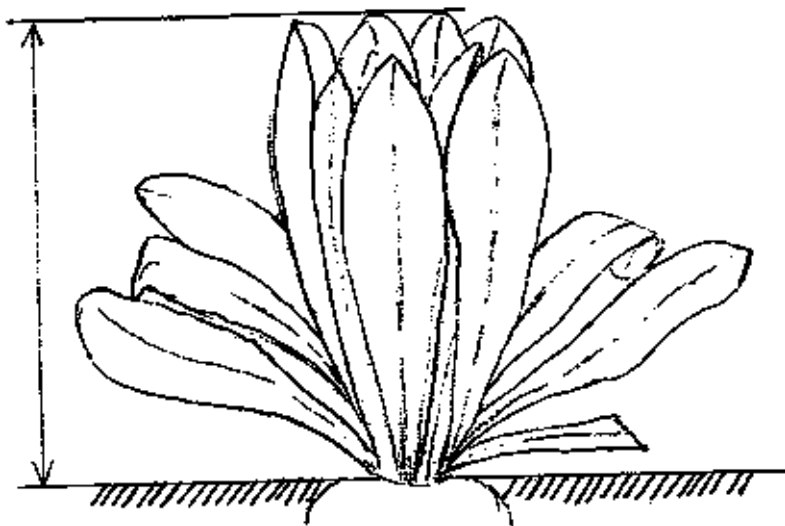
English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26. Flower: color	Fleur: couleur	Blüte: Farbe	Flor: color		
white	blanche	weiß	blanco		1
pink	rose	rosa	rosa		2
blue	bleue	blau	azul	Bea	3
27. Head: length (*)	Chicon: longueur	Kopf: Länge	Cogollo: longitud		
very short	très court	sehr kurz	muy corta	Carla	1
short	court	kurz	corta	Mona	3
medium	moyen	mittel	media	Bea, Monitor	5
long	long	lang	larga	Faro, Focus, Revor	7
very long	très long	sehr lang	muy larga	Normale	9
28. Head: maximum diameter (*)	Chicon: diamètre maximal	Kopf: maximaler Durchmesser	Cogollo: diámetro máximo		
small	petit	klein	pequeño	Carla	3
medium	moyen	mittel	medio	Bea	5
large	grand	groß	grande	Mona	7
29. Head: ratio length/diameter	Chicon: rapport longueur/diamètre	Kopf: Verhältnis Länge/Durchmesser	Cogollo: relación longitud/diámetro		
small	petit	klein	pequeño	Mona	3
medium	moyen	mittel	medio	Bea	5
large	grand	groß	grande	Focus	7
30. Head: shape in longitudinal section (*)	Chicon: forme en section longitudinale	Kopf: Form im Längsschnitt	Cogollo: forma en sección longitudinal		
narrow elliptic	elliptique étroite	schmal elliptisch	elíptica estrecha		1
elliptic	elliptique	elliptisch	elíptica	Dirv, Rinof	2
broad elliptic	elliptique large	breit elliptisch	elíptica ancha		3
ovate	ovale	eiförmig	oval	Histerra, Zoom	4

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31. Head: shape of apex (*)	Chicon: forme du sommet	Kopf: Form der Spitze	Cogollo: forma del ápice		
rounded	arrondi	abgerundet	redondeada	Mona	1
weakly pointed	légèrement pointu	leicht spitz	ligeramente puntiaguda	Toner	2
strongly pointed	fortement pointu	sehr spitz	muy puntiaguda	Zoom	3
32. Head: creamish hue of midrib	Chicon: ton crème de la nervure médiane	Kopf: cremefarbener Ton der Mittelrippe	Cogollo: matiz color crema del nervio central		
absent	absente	fehlend	ausente	Zoom	1
present	présente	vorhanden	presente	Caressa	2
33. Head: color of leaf blade (outer side) (*)	Chicon: couleur de du limbe (face externe)	Kopf: Farbe der Blattspreite (Außenseite)	Cogollo: color del limbo (cara externa)		
green	vert	grün	verde		1
yellow	jaune	gelb	amarillo		2
red	rouge	rot	rojo		3
34. Head: intensity of color of leaf blade (*)	Chicon: intensité de la couleur du limbe	Kopf: Intensität der Farbe der Blattspreite	Cogollo: intensidad del color del limbo		
light	claire	hell	clara		3
medium	moyenne	mittel	media		5
dark	foncée	dunkel	oscura		7
35. Head: blistering of leaf blade	Chicon: cloûre du limbe	Kopf: Blasigkeit der Blattspreite	Cogollo: abullonado del limbo		
absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil		1
weak	faible	gering	débil	Tabor	3
medium	moyenne	mittel	media	Ivora, Zoom	5
strong	forte	stark	fuerte	Roelof	7

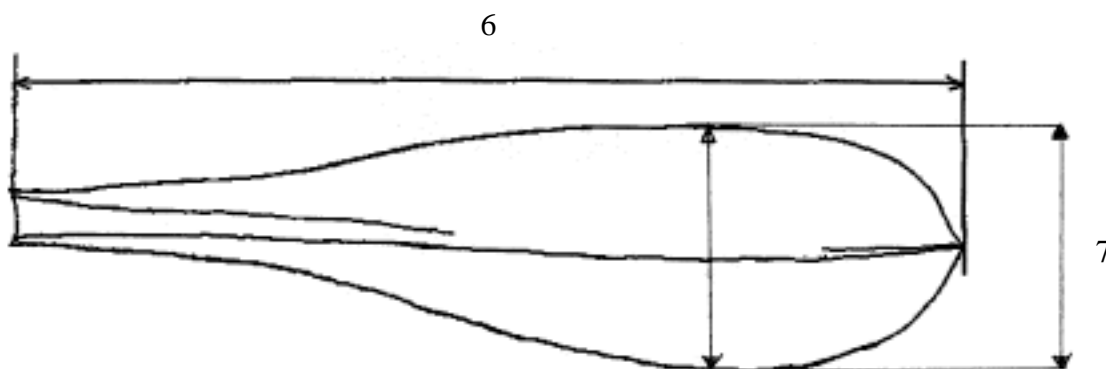
English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
36. Head: closure of apex	Chicon: fermeture du sommet	Kopf: Schließen der Spitze	Cogollo: cierre del ápice		
fully open	complètement ouvert	vollkommen offen	completamente abierto		1
half open	demi-ouvert	halb offen	semi-abierto		2
closed	fermé	geschlossen	cerrado		3
37. Head: firmness	Chicon: fermeté	Kopf: Festigkeit	Cogollo: firmeza		
loose	lâche	locker	blanda		3
medium	moyenne	mittel	media	Bea	5
firm	ferme	fest	firme	Zoom	7
38. Seed: color	Semence: couleur	Samen: Farbe	Semilla: color		
white	blanche	weiß	blanca		1
black	noire	schwarz	negra		2

VIII. Explanations on the Table of Characteristics

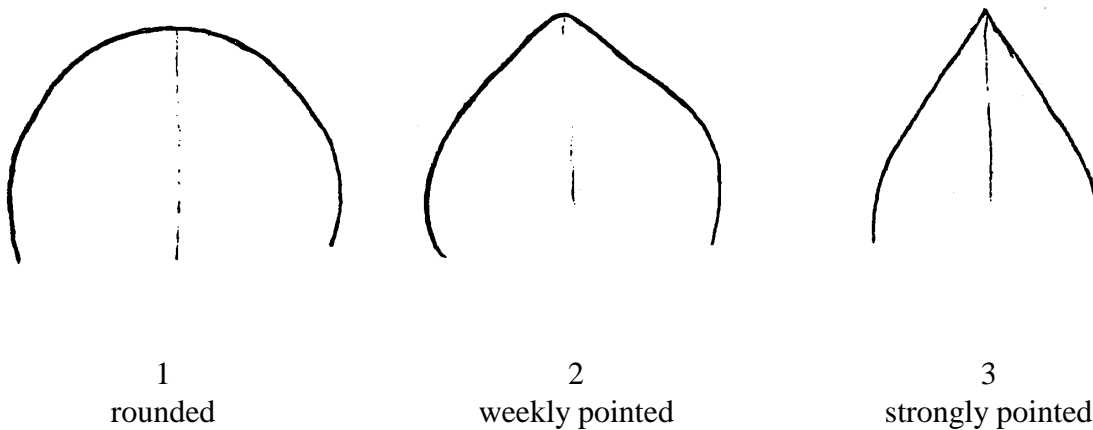
Ad. 3: Plant: height at vegetative stage



Ad. 6 and 7: Leaf: length (6) and width (7)



Ad. 19: Leaf: shape of tip



IX. Literature

Ryder, E. J., 1979: Leafy Salad Vegetables, AVI Publishing Company, Westport, Connecticut

Leteinturier, J. E. A., 1983 :“L'endive (chicorée witloof),” 3e ed., CTIEF, Paris, France

Annon, C. R., 1970: “La chicorée de Bruxelles,” Symposium International à Gembloux (B), 17 et 18 février (Eucarpia), Ed. Min. de l’Agriculture, Recherche Agronomique, Bruxelles

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>Cichorium intybus</i> L. partim WITLOOF, CHICORY	
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 and breeding method		
(a) Population		[]
(b) Hybrid		[]
(c) Other (please indicate)		
.....		[]

4.2 Other information

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

Characteristics	Example Varieties	Note
5.1 Leaf: length (6)		
short	Carla, Conrad	3[]
medium	Elsa, Flash, Marriott	5[]
long	Turbo	7[]
very long	Vilmorin No. 5	9[]
5.2 Leaf: intensity of green color (10)		
light	Jaz	3[]
medium	Bea, Toner	5[]
dark	Conrad, Magic, Zoom	7[]
5.3 Head: length (27)		
very short	Carla	1[]
short	Mona	3[]
medium	Bea, Monitor	5[]
long	Faro, Focus, Revor	7[]
very long	Normale	9[]

Characteristics	Example Varieties	Note
5.4 Head: shape in longitudinal section (30)		
narrow elliptic		1[]
elliptic	Dirv, Rinof	2[]
broad elliptic		3[]
ovate	Histerra, Zoom	4[]

6. Similar varieties and differences between 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

- Period of forcing (please state month)

.....

7.3 Other information

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.