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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

WITLOOF CHICORY *

UPOV Code : CICHO_INT

Cichorium intybus L. partim

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from France

to be considered by the

Technical Working Party for Vegetables
at its forty-eighth session, to be held in Paestum, Italy, from June 23 to 27, 2014

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Cichorium intybus L. partim	Witloof, chicory	Endive	Zichorie	Endivia

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 *Cichorium intybus* L. partim excluding industrial chicory (TG/172/4) and leaf chicory (TG/154/3).

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 seed.

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

50 g or 30,000 seeds.

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 two independent growing cycles.

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

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.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 100 plants, which should be divided between at least 2 replicates.”

3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 60 plants or parts taken from each of 60 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

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

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

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

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

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

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

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

4.2 Uniformity

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 open-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.3 The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction. A population standard of 1% with an acceptance probability of at least 95% should be applied to off-types excluding clearly recognizable inbred plants. In addition a population standard of 3% with the same acceptance probability should be applied to clearly recognizable inbred plants in hybrids where male sterility has been used; a population standard of 5% with the same acceptance probability should be applied to clearly recognizable inbred plants in hybrids where male sterility has not been used.

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) Leaf: length (characteristic 6)
(b) Leaf: color (characteristic 9)
(c) Leaf: intensity of color (characteristic 10)
(d) Male sterility (characteristic 27)

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

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 States of Expression and Corresponding Notes

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

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

State	Note
small	3
medium	5
large	7

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

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

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

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 Legend

(*)	Asterisked characteristic	– see Chapter 6.1.2
QL	Qualitative characteristic	– see Chapter 6.3
QN	Quantitative characteristic	– see Chapter 6.3
PQ	Pseudo-qualitative characteristic	– see Chapter 6.3
MG, MS, VG, VS		– see Chapter 4.1.5
(a)-(c)	See Explanations on the Table of Characteristics in Chapter 8.1	
(+)	See Explanations on the Table of Characteristics in Chapter 8.2	

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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	**VG**	**Cotyledon: shape**	**Cotylédon: forme**	**Keimblatt: Form**	**Cotiledón: forma**		
(+)							
PQ		narrow elliptic	elliptique étroit	schmal elliptisch	eliptica estrecha	Aline, Daliva, Final	1
		medium elliptic	elliptique moyen	mittel elliptisch	eliptica media		2
		broad elliptic	elliptique large	breit elliptisch	eliptica ancha	Bea, Flash, Magnum, Toner	3
2.	**VG**	**Cotyledon: shape of tip**	**Cotylédon: forme de l'apex**	**Keimblatt: Form der Spitze**	**Cotiledón: forma del ápice**		
PQ		truncate	tronquée	stumpf	truncada	Aline, Conrad, Janus, Magnum	1
		rounded	arrondie	abgerundet	redondeada	Bergère, Videna	2
3. **(*)** **(+)**	**VG**	**Plant: height**	**Plante: hauteur**	**Pflanze: Höhe**	**Planta: altura**		
		short	courte	niedrig	baja	Carla	3
QN		medium	moyenne	mittel	media	Ecrine, Selkis	5
		tall	haute	hoch	alta	Dirv, Topmodel, Zilia	7
4. **(*)**	**VG**	**Foliage: attitude**	**Feuillage: port**	**Laub: Haltung**	**Follaje: porte**		
	(a)	erect	dressé	aufrecht	erecto	Dirv	1
QN		semi-erect	demi-dressé	halbaufrecht	semierecto	Ecrine, Ombline	3
		horizontal	horizontal	waagerecht	horizontal	Perfo	5
5.	**VG**	**Leaf: attitude of tip**	**Feuille: port du sommet**	**Blatt: Haltung der Spitze**	**Hoja: porte del extremo**		
	(a)	erect	dressé	aufrecht	erecto	Platine	1
QN		semi-erect	demi-dressé	halbaufrecht	semierecto	Crenoline, Ecribe	3
		horizontal	horizontal	waagerecht	horizontal		5
6. **(*)** **(+)**	**VG**	**Leaf: length**	**Feuille: longueur**	**Blatt: Länge**	**Hoja: longitud**		
	(a)	short	courte	kurz	corta	Carla,	3
QN		medium	moyenne	mittel	media	Ecrine, Ombline	5
		long	longue	lang	larga	Atlas, Platine	7
		very long	très longue	sehr lang	muy larga	Zilia	9
7. **(*)** **(+)**	**VG**	**Leaf: width**	**Feuille: largeur**	**Blatt: Breite**	**Hoja: anchura**		
QN	**(a)**	narrow	étroite	schmal	estrecha	Carla	3
		medium	moyenne	mittel	media	Baccara, Bea, Extral, Flash, Zoom	5
		broad	large	breit	ancha	Atlas, Nica, Quartz, Symphonie	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
8. **(+)**	**VG**	**Leaf: ratio length/width**	**Feuille: rapport longueur/larger**	**Blatt: Verhältnis Länge/Breite**	**Hoja: relación longitud/anchura**		
	(a)	low	faible	gering	débil	Carla, Vitessa	3
QL		medium	moyen	mittel	medio	Baccara, Bea, Ecrine	5
		high	élevé	hohe	elevado	Senator, Zilia	7
9. **(*)**	**VG**	**Leaf: color**	**Feuille: couleur**	**Blatt: Farbe**	**Hoja: color**		
	(a)	green	verte	grün	verde	Zoom	1
PQ		red	rouge	rot	rojo	Carla	2
		green and red	verte et rouge	grün und rot	Verde y rojo	Festive, Rubina	3
10. **(*)**	**VG**	**Leaf: intensity of color**	**Feuille: intensité de la couleur**	**Blatt: Intensität der Farbe**	**Hoja: intensidad del color**		
QN	**(a)**	light	claire	hell	claro	Jaz	3
		medium	moyenne	mittel	medio	Ombline	5
		dark	foncée	dunkel	oscuro	Genis	7
11.	**VG**	**Leaf: glossiness**	**Feuille: brillance**	**Blatt: Glanz**	**Hoja: brillo**		
QN	**(a)**	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Quartz	1
		weak	faible	gering	débil	Abellis, Flash, Rinof	3
		medium	moyenne	mittel	medio	Baccara, Fakir, Toner	5
		strong	forte	stark	fuerte	Dirv, Magic, Quartz, Rikita	7
12. **(*)**	**VG**	**Leaf: shape in cross section**	**Feuille: forme en section transversale**	**Blatt: Form im Querschnitt**	**Hoja: forma en sección transversal**		
PQ	**(a)**	concave	concave	konkav	cóncava	Abellis, Crenoline	1
		flat	plane	eben	plana	Excellence, Perfo, Zilia, Zoom	2
		convex	convexe	konvex	convexa	Dirv	3
13. **(*)**	**VG**	**Leaf: blistering**	**Feuille: cloqûre**	**Blatt: Blasigkeit**	**Hoja: abullonado**		
QN	**(a)**	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Quartz, Rinof	1
		weak	faible	gering	débil	Abellis, Flash, Platine, Quartz	3
		medium	moyenne	mittel	medio	Alliance, Carla, Ecrine	5
		strong	forte	stark	fuerte	Monitor, Rikita, Zoom	7
14.	**VG**	**Leaf: anthocyanin coloration of midrib**	**Feuille: pigmentation anthocyanique de la nervure médiane**	**Blatt: Anthocyanfärbung der Mittelrippe**	**Hoja: pigmentación antociánica del nervio central**		
QN	**(a)**	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Baccara, Carla, Dirv, Excellence, Spectra	1
		weak	faible	gering	débil	Abellis, Flash, Jocker	3
		medium	moyenne	mittel	media	Carla, Sigma, Zoom	5
		strong	forte	stark	fuerte	Victoria	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15.	**VG**	**Leaf: undulation of margin**	**Feuille: ondulation du bord**	**Blatt: Wellung des Randes**	**Hoja: ondulación del borde**		
QN	**(a)**	weak	faible	gering	débil	Venus	3
		medium	moyenne	mittel	media	Atlas, Baccara, Platine	5
		strong	forte	stark	fuerte	Montblanc, Sigma	7
16.	**VG**	**Leaf: incisions of basal part**	**Feuille : incisions de la partie basale**	**Blatt: Randeinschnitte des basalen Teiles**	**Hoja: incisiones de la parte basal**		
QN	**(a)**	absent or very weak	absentes ou très faibles	fehlend oder sehr gering	ausente o muy débil		1
		weak	faibles	gering	débil	Crenoline, Selkis,Monitor	3
		medium	moyennes	mittel	media	Alliance, Bea, Topscore	5
		strong	fortes	stark	fuerte	Atlas, Final, Victoria, Zilia	7
17. **(*)**	**VG**	**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**		
QN	**(a)**	absent or very weak	nulles ou très faibles	fehlend oder sehr gering	ausente o muy débil	Carla, Selkis	1
		weak	faibles	gering	débil	Abellis, Flash, Janus, Toner, Topscore	3
		medium	moyennes	mittel	media	Baccara, Jocker, Symphonie, Zoom	5
		strong	fortes	stark	fuerte	Platine, Victoria	7
18.	**VG**	**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**		
QN	**(a)**	shallow	peu profondes	flach	poco profunda	Abellis, Desir, Flash, Zoom	3
		medium	moyennes	mittel	media	Baccara, Ombline, Symphonie	5
		deep	profondes	tief	profunda	Rikita	7
19. **(+)**	**VG**	**Leaf: shape of tip**	**Feuille: forme du sommet**	**Blatt: Form der Spitze**	**Hoja: forma del extremo**		
PQ	**(a)**	rounded	arrondi	abgerundet	redondeada	Abellis, Magnum, Rumba, Topscore	1
		weakly pointed	légèrement pointu	leicht spitz	ligeramente puntiaguda	Atlas, Fakir, Mona, Takine	2
		strongly pointed	fortement pointu	sehr spitz	muy puntiaguda	Magic, Platine	3
20. **(+)**	**VG**	**Bolting tendency**	**Tendance à la montaison**	**Neigung zum Schossen**	**Tendencia a la floración**		
QN	**(c)**	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Carla	1
		weak	faible	gering	débil	Bea, Montblanc	3
		medium	moyenne	mittel	media	Flash, Ombline	5
		strong	forte	stark	fuerte	Quartz, Topmodel	7
		very strong	très forte	sehr stark	muy fuerte	Vilmorin No. 5	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
21. **(+)**	**VS**	**Time of beginning of flowering**	**Epoque de début de floraison**	**Zeitppunkt dem Beginn der Blüte**	**Epoca de principio de floración**		
QN	**(c)**	very early	très précoce	sehr früh	muy temprana		1
		early	précoce	früh	temprana	Jadore, Prestance, Takine	3
		medium	moyenne	mittel	media	Abellis, Ecrine, Hermès	5
		late	tardive	spät	tarda		7
		very late	très tardive	sehr spät	muy tarda		9
22. **(+)**	**MG**	**Flowering stem: height**	**Tige florale: hauteur**	**Blütenstandstiel: Höhe**	**Tallo floral: altura**		
QN	**(c)**	short	basse	niedrig	baja		3
		medium	moyenne	mittel	media	Désir, Perfo, Samba	5
		tall	haute	hoch	alta	Atlas, Festive, Final, Selkis	7
23.	**VG**	**Flowering stem: branching**	**Tige florale: ramification**	**Blütenstandstiel: Verzweigung**	**Tallo floral: ramificación**		
QN	**(c)**	weak	faible	gering	débil		3
		medium	moyenne	mittel	media	Atlas, Ecrine, Perfo	5
		strong	forte	stark	fuerte	Abellis, Final	7
24. **(+)**	**VG**	**Flowering stem: size of stipule**	**Tige florale: taille de la stipule**	**Blütenstandstiel: Größe des Nebenblattes**	**Tallo floral: tamaño de la estípula**		
QN	**(c)**	small	petite	klein	pequeño	Crenoline, Excellence, Magnum	3
		medium	moyenne	mittel	mediano	Bea, Desir, Festive, Topmodel	5
		large	grande	groß	grande	Isatis, Maraichere	7
25. **(+)**	**VG**	**Flowering stem: dentation of stipule**	**Tige florale: denticulation de la stipule**	**Blütenstandstiel: Zähnung des Nebenblattes**	**Tallo floral: dentado de la estípula**		
QN	**(c)**	small	petite	klein	pequeño	Alliance, Elegance, Flash, Jadore	3
		medium	moyenne	mittel	mediano	Abellis, Platine, Terosa	5
		large	grande	groß	grande		7
26.	**VG**	**Flower: color**	**Fleur: couleur**	**Blüte: Farbe**	**Flor: color**		
PQ	**(c)**	white	blanche	weiß	blanco		1
		pink	rose	rosa	rosa	Isatis, Selkis	2
		blue	bleue	blau	azul	Bea, Flash	3
27. **(*)**	**VG**	**Male sterility**	**Stérilité mâle**	**Männliche Sterilität**	**Androesterilidad**		
QL		absent	absente	fehlend	ausente	Flash	1
		present	présente	vorhanden	presente	Ombline	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
28. (*)	**MS/ VG**	**Head: length**	**Chicon: longueur**	**Kopf: Länge**	**Cogollo: longitud**		
QN	**(b)**	very short	très court	sehr kurz	muy corta	Carla	1
		short	court	kurz	corta	Mona	3
		medium	moyen	mittel	media	Bea, Monitor, Ombline	5
		long	long	lang	larga	Faro, Focus, Perfo, Prestance, Revor	7
		very long	très long	sehr lang	muy larga	Normale	9
29. (*)	**MS/ VG**	**Head: maximum diameter**	**Chicon: diamètre maximal**	**Kopf: maximaler Durchmesser**	**Cogollo: diámetro máximo**		
QN	**(b)**	small	petit	klein	pequeño	Carla	3
		medium	moyen	mittel	medio	Bea, Ecrine	5
		large	grand	groß	grande	Mona, Zilia	7
30.	**MS/ VG**	**Head: ratio length/diameter**	**Chicon: rapport longueur/diamètre**	**Kopf: Verhältnis Länge/Durchmesser**	**Cogollo: relación longitud/diámetro**		
QL	**(b)**	small	petit	klein	pequeño	Isatis, Mona, Opale,	3
		medium	moyen	mittel	medio	Bea, Désir, Panache	5
		large	grand	groß	grande	Atlas, Final, Focus	7
31. (*) (+)	**VG**	**Head: shape in longitudinal section**	**Chicon: forme en section longitudinale**	**Kopf: Form im Längsschnitt**	**Cogollo: forma en sección longitudinal**		
PQ	**(b)**	narrow elliptic	elliptique étroite	schmal elliptisch	elíptica estrecha	Symphonie	1
		elliptic	elliptique	elliptisch	elíptic	Dirv, Excellence, Jocker, Rinof	2
		broad elliptic	elliptique large	breit elliptisch	elíptica ancha	Crenoline, Topmodel	3
		ovate	ovale	eiförmig	oval	Abellis, Selkis	4
32. (*)	**VG**	**Head: shape of apex**	**Chicon: forme du sommet**	**Kopf: Form der Spitze**	**Cogollo: forma del ápice**		
PQ	**(b)**	rounded	arrondi	abgerundet	redondeada	Abellis, Crenoline, Mona	1
		weakly pointed	légèrement pointu	leicht spitz	Ligeramente puntiaguda	Baccara, Elegance, Toner	2
		strongly pointed	fortement pointu	sehr spitz	muy puntiaguda	Fakir, Symphonie, Zoom	3
33. (*)	**VG**	**Head: color of leaf blade (<u>outer</u> side)**	**Chicon: couleur de du limbe (face <u>externe</u>)**	**Kopf: Farbe der Blattspreite (<u>Außen</u>seite)**	**Cogollo: color del limbo (cara <u>externa</u>)**		
PQ	**(b)**	yellow	jaune	gelb	amarillo	Flexine	1
		red	rouge	rot	rojo	Carla	2
		yellow and red	aune et rouge	gelb und rot	amarillo y rojo		3
34. (*)	**VG**	**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**		
QN	**(b)**	light	claire	hell	clara	Elegance, Perfo	3
		medium	moyenne	mittel	media	Baccara, Ombline	5
		dark	foncée	dunkel	oscura	Abellis, Ecrine	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35.	**VG**	**Head: blistering of leaf blade**	**Chicon: cloqûre du limbe**	**Kopf: Blasigkeit der Blattspreite**	**Cogollo: abullonado del limbo**		
QN	**(b)**	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Hermès, Topmodel	1
		weak	faible	gering	débil	Tabor	3
		medium	moyenne	mittel	media	Baccara, Festive, Ivora, Zoom	5
		strong	forte	stark	fuerte	Roelof	7
36.	**VG**	**Head: closure of apex**	**Chicon: fermeture du sommet**	**Kopf: Schließen der Spitze**	**Cogollo: cierre del ápice**		
(+)							
QN	**(b)**	fully open	complètement ouvert	vollkommen offen	completamente abierto		1
		half open	demi-ouvert	halb offen	semi-abierto	Abellis, Zilia	2
		closed	fermé	geschlossen	cerrado	Baccara, Hermès	3
37.	**VG**	**Head: firmness**	**Chicon: fermeté**	**Kopf: Festigkeit**	**Cogollo: firmeza**		
PQ	**(b)**	loose	lâche	locker	blanda	Abellis, Zilia	3
		medium	moyenne	mittel	media	Bea, Crenoline, Jadore	5
		firm	ferme	fest	firme	Baccara, Ecrine, Zoom	7
38.	**VG**	**Head: length of the axis (for a classical forcing period)**	**Chicon : longueur de l'axe (pour une période de forçage classique)**	**Kopf : Länge der Achse (für eine klassische Phase des Aufbrechens)**	**Cogollo : Longitud del eje (por un clásico periodo de forzado)**		
QN	**(b)**	very short	très courte	sehr kurz	muy corta		1
		short	courte	kurz	corta		3
		medium	moyenne	mittel	media		5
		long	longue	lang	larga		7
		very long	très longue	sehr lang	muy larga		9
39.	**VG**	**Head: percentage of brown axis**	**Chicon : pourcentage d'axe brun (pour un forçage sans $CaCl_2$)**	**Kopf : Prozentanteil den braun Achses (für ein Auf brechen mit ohne $CaCl_2$)**	**Cogollo : porcentaje de marrón eje (por un forzado sin $CaCl_2$)**		
QN	**(b)**	< 10 %	< 10 %	< 10 %	< 10 %		1
		[20-30 %[	[20-30 %[	[20-30 %[	[20-30 %[		3
		[45-55 %[	[45-55 %[	[45-55 %[	[45-55 %[		5
		[70-80 %[	[70-80 %[	[70-80 %[	[70-80 %[		7
		≥ 90 %	≥ 90 %	≥ 90 %	≥ 90 %		9
40.	**VG**	**Seed: color**	**Semence: couleur**	**Samen: Farbe**	**Semilla: color**		
PQ		white	blanche	weiß	blanca	Atlas, Opale	1
		brown	brune	braun	marrón	Abellis, Isatis	2
		black	noire	schwarz	negra	Carla, Festive	3

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

(a) Leaf : observations on the leaf should be done in the vegetative stage in the field on the full-grown leaf.

(b) Head : observations on the head should be done after a forcing period in a complete dark environment and before exposure to daylight.

(c) Bolting and flowering characteristics : ~~all~~ observations on these characteristics should be done in a special bolting trial in which a flowering stem is formed.

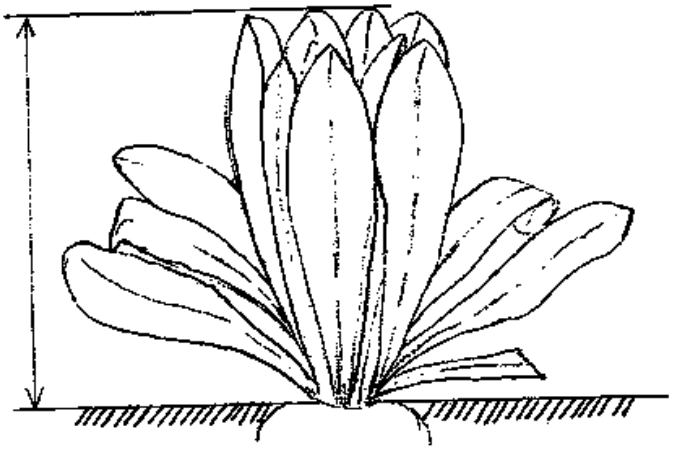
8.2 Explanations for individual characteristics

Ad. 1: Cotyledon: shape

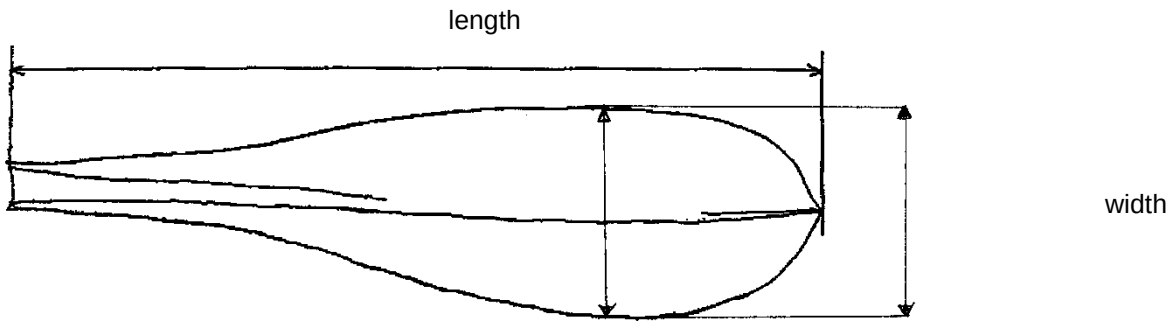
Picture will be added

1	2	3
narrow elliptic	medium elliptic	broad elliptic

Ad. 3: Plant: height



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

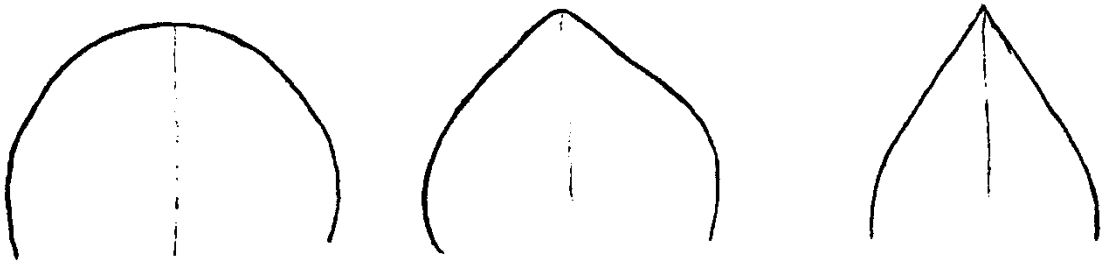


Ad. 8: Leaf: ratio length/width

Picture will be added

3	5	7
low	medium	high

Ad. 19: Leaf: shape of tip



1	2	3
rounded	weekly pointed	strongly pointed

Ad. 20: Bolting tendency

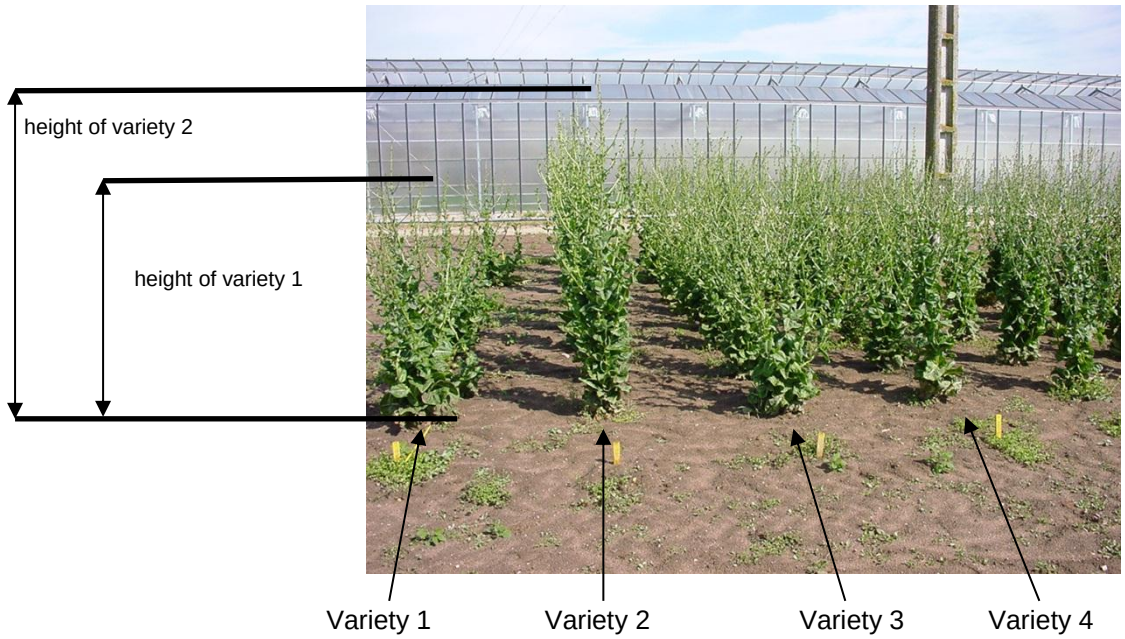
This caracteristic should be observed in early sowing conditions with reference to of the example varieties.
The variety with an abscence of bolting tendancy or a very weak bolting tendancy (note1) shows a hight tolerance to bolting (Resistance).
In the opposite, a variety with a very strong bolting tendancy (note 9) shows a very weak tolerance to bolting (Susceptible)

Ad. 21: Time of beginning of flowering

Observations are made when the first flower opens. The time of beginning of flowering of a variety is the average of the dates recorded on the plants.

Ad. 22: Flowering stem: height

The height of the stem is measured on plant when the first flower opens.



Better picture will be added

Ad. 24: Flowering stem: size of stipule

The observations should be done on the stipules of the upper third

Picture will be added

3	5	7
small	medium	large

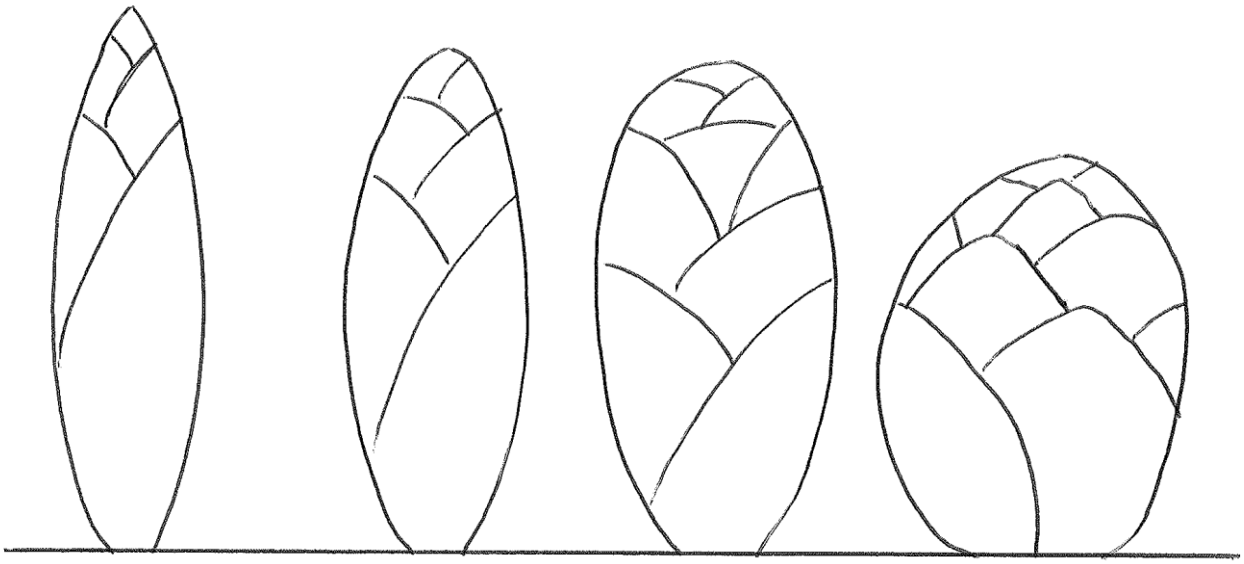
Ad. 25: Flowering stem: dentation of stipule

The observations should be done on the stipules of the upper third

Picture will be added

3	5	7
small	medium	large

Ad. 31: Head: shape in longitudonal section



1	2	3	4
narrow elliptic	elliptic	broad elliptic	ovate

Ad. 36: Head: closure of apex

Picture will be added

1	2	3
fully open	half open	closed

9. 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

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	*Cichorium intybus* L. partim.
1.2 Common name	Witloof, chicory

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 [ ]

(b) partially known cross [ ]

(c) unknown cross [ ]

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

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

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 (6)	**Leaf: length**		
	very short		1[ ]
	very short to short		2[ ]
	short	Carla,	3[ ]
	short to medium		4[ ]
	medium	Ecrine, Ombline	5[ ]
	medium to long		6[ ]
	long	Atlas, Platine	7[ ]
	long to very long		8[ ]
	very long	Zilia	9[ ]
5.2 (9)	**Leaf: color**		
	green	Zoom	1[ ]
	red	Carla	2[ ]
	green and red	Festive, Rubina	3[ ]
5.3 (10)	**Leaf: intensity of color**		
	very light		1[ ]
	very light to light		2[ ]
	light	Jaz	3[ ]
	light to medium		4[ ]
	medium	Ombline	5[ ]
	medium to dark		6[ ]
	dark	Genis	7[ ]
	dark to very dark		8[ ]
	very dark		9[ ]
5.4 (27)	**Male sterility**		
	absent	Flash	1[ ]
	present	Ombline	9[ ]

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

	Characteristics	Example Varieties	Note
5.5 (28)	**Head: length**		
	very short	Carla	1[ ]
	very short to short		2[ ]
	short	Mona	3[ ]
	short to medium		4[ ]
	medium	Bea, Monitor, Ombline	5[ ]
	medium to long		6[ ]
	long	Faro, Focus, Perfo, Prestance, Revor	7[ ]
	long to very long		8[ ]
	very long	Normale	9[ ]
5.6 (31)	**Head: shape in longitudinal section**		
	narrow elliptic		1[ ]
	elliptic	Dirv, Rinof	2[ ]
	broad elliptic		3[ ]
	ovate	Histerra, Zoom	4[ ]

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	*Leaf: length*	*short*	*medium*

Comments:

[#]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

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]