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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

LEAF CHICORY

UPOV Code: CICHO_INT_FOL

Cichorium intybus L. var. *foliosum* Hegi

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-seventh session, to be held in Nagasaki, Japan, from May 20 to 24, 2013

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Cichorium intybus L. var. *foliosum* Hegi	Leaf Chicory	Chicorée à feuilles	Blattzichorie	Achicoria de hoja

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. var. *foliosum* Hegi excluding *Cichorium intybus L.* Partim (Witloof Chicory).

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 :

~~25 g~~ 10 000 seeds or
120 plants of normal transplantation size in the case of vegetatively propagated varieties.

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 40 plants or parts taken from each of 40 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 For the assessment of uniformity of inbred lines and hybrids, a population standard of 3% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 100 plants, 6 off-types are allowed. In addition, the same population standard and acceptance probability should apply to clear cases of out-crossed plants in inbred lines as well as plants obviously resulting from the selfing of a parent line in hybrids.

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 In the first place, the collection should be divided according to the growth types in Table 1:

In cases of doubt to which growth sub-type a variety belongs to, it should be tested in all relevant growth sub-types.

5.4 The following have been agreed as useful grouping characteristics:

~~(a) Plant: sub type~~
(a) Leaf: main color (excluding midrib) (characteristic 7)
(b) Leaf: anthocyanin coloration (characteristic 8)
(c) Plant: head formation (characteristic 17)
(d) Head: shape in longitudinal section (characteristic 22)
~~(f) Male sterility~~

5.5 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”.

Table 1

Plant: growth type	**Plant: diameter (char. 2)**	**Leaf: length (char. 4)**	**Leaf: width (char. 5)**	**Leaf: main color (excluding midrib) (char. 7)**	**Leaf: type of anthocyanin distribution (char. 11)**	**Plant: head formation (char. 17)**	**Only varieties with: Head formation: present: Time of Head formation (char. 18)**	**Head: shape in longitudinal section (char. 22)**	**Plant: stem: formation at harvest maturity (char. 27)**
Chioggia	Medium to large (notes 5-7)	Medium (note 5)	Medium (note 5)	Dark red (note 7)	Diffused only (note 1)	Present	Very early to very late (notes 1-9)	Circular or transverse elliptic (note 3 / 4)	Absent
Verona	Small to Medium (notes 3-5)	Short to Medium (notes 3-5)	Medium to Broad (notes 5-7)	Medium red to Dark red (notes 6-7)	Diffused only (note 1)	Present	Very early to early (notes 1-3)	Ovate (note 2)	Absent
Rossa di Treviso precoce	Medium (note 7)	Long (note 7)	Narrow (note 3)	Medium red (note 6)	Diffused only (note 1)	Present	Very early to late (notes 1-7)	Elliptic (note 1)	Absent
Rossa di Treviso tardivo	Medium (note 7)	Long (note 7)	Narrow (note 3)	Medium red (note 6)	Diffused only (note 1)	Absent	Very late (notes 9)	Elliptic (note 1)	Absent
Variegata di Castelfranco	Medium to large (notes 5-7)	Medium (note 5)	Broad (note 7)	Yellowish green (note 1)	In patches only (note 1)	Present	Medium to late (notes 5-7)	Ovate (note 2)	Absent
Variegata a palla	Large (note 7)	Medium (note 5)	Broad (note 7)	Yellowish green (note 1)	Diffused and in patches (note 3)	Present	Medium to late (notes 5-7)	Transverse elliptic (note 4)	Absent
Catalogna	Medium to very large (note 5-9)	Long to very long (notes 7-9)	Broad (note 7)	Light to medium green (notes 2-3)		Absent			Absent
Catalogna Puntarelle	Small to medium (notes 3-5)	Long (note 7)	Very narrow (note 1)	Medium to dark green (notes 3-4)		Absent			Present
Pain de sucre / Pan di Zucchero	Large (note 7)	Medium (note 5)	Very broad (note 9)	Light green to medium green (notes 2-3)		Present	Medium (note 5)	Elliptic (note1)	Absent
Améliorée Blonde or Verte	Medium (note 5)	Short to medium (notes 3-5)	Medium (note 5)	Light green to dark green (notes 1-4)		Absent			Absent
Verde a grumolo	Medium (note 5)	Short (note 3)	Narrow to medium (notes 3-5)	Dark green (note 4)		Absent			Absent
Barbe de Capucin	Medium (note 5)	Long (note 7)	Verry narrow to narrow (notes 1-3)	Medium to dark green (notes 3-4)		Absent			Absent

Section 8.1 provides illustrations for the growth sub-types.

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)-(d) See Explanations on the Table of Characteristics in Chapter 8.2.

(+) See Explanations on the Table of Characteristics in Chapter 8.3.

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**~~	~~**Plant: sub-type**~~	~~**Plante : sous-type**~~	~~**Pflanze: Untergruppe**~~	~~**Plant: subtipo**~~		
~~**QL**~~		~~Chioggia~~	~~Chioggia~~	~~Chioggia~~	~~Chioggia~~		~~1~~
		~~Trevise~~	~~Trevise~~	~~Trevise~~	~~Trevise~~		~~2~~
		~~Verone~~	~~Verone~~	~~Verone~~	~~Verone~~		~~3~~
		~~Pain de sucre~~	~~Pain de sucre~~	~~Pain de sucre~~	~~Pain de sucre~~		~~4~~
		~~Améliorée Blonde ou Verte~~	~~Améliorée Blonde ou Verte~~	~~Améliorée Blonde ou Verte~~	~~Améliorée Blonde ou Verte~~		~~5~~
		~~Barbe de capucin~~	~~Barbe de capucin~~	~~Barbe de capucin~~	~~Barbe de capucin~~		~~6~~
		~~Catalogna Puntarelle~~	~~Catalogna Puntarelle~~	~~Catalogna Puntarelle~~	~~Catalogna Puntarelle~~		~~7~~
		~~Variegata~~	~~Variegata~~	~~Variegata~~	~~Variegata~~	~~Variegata di Lusia, Variegata di Castelfranco~~	
1. (old 2) (*)	**VG**	**Young plant: anthocyanin coloration at 5-6 leaf stage**	**Plantule : pigmentation anthocyanique au stade 5 à 6 feuilles**	**Jungpflanze: Anthocyanfärbung im 5- bis 6-Blattstadium**	**Planta joven: pigmentación antociánica en estado 5 a 6 hojas**		
QL		absent	absente	fehlend	ausente	Améliorée, Pan di zucchero	1
		present	présente	vorhanden	presente	Palla rossa 2, ~~Trevise~~ Rossa di Treviso 4	9
2. (old 2) (*)	**VG/ MG**	**Plant: diameter ~~(plant fully developed)~~**	**Plante : diamètre ~~(plante entièrement développée)~~**	**Pflanze: Durchmesser ~~(Pflanze voll entwickelt)~~**	**Planta: diámetro ~~(planta totalmente desarrollada)~~**		
QN	**(a)**	very small	très petit	sehr klein	muy pequeño	Silla	1
		small	petit	klein	pequeño	~~Palla rossa 2~~ A Grumolo Verde	3
		medium	moyen	mittel	medio	~~Palla rossa 3~~ Rossa di Treviso 4	5
		large	grand	groß	grande	Pan di zucchero	7
		very large	très grand	sehr groß	muy grande	~~Catalogna puntarelle a foglia stretta~~ Catalogna a foglie frastagliate	9
3. (old 4) (*)	**VG**	**Leaf: attitude**	**Feuille : port**	**Blatt: Haltung**	**Hoja: porte**		
QN	**(b)**	erect	dressé	aufrecht	erecto	~~Vérone~~ Clio, Spadona	1
		semi-erect	demi-dressé	halbaufrecht	semierecto	Palla rossa 2	3
		horizontal	horizontal	waagerecht	horizontal	Selvatica da campo	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4. (old 5) (*) (+)	**VG/ MG**	**Leaf: length ~~(at harvest maturity)~~**	**Feuille : longueur ~~(à maturité de récolte)~~**	**Blatt: Länge ~~(zur Erntereife)~~**	**Hoja: longitud ~~(en la madurez de cosecha)~~**		
QN	**(b)**	very short	très courte	sehr kurz	muy corta	Silla, Zuccherina di Trieste	1
		short	courte	kurz	corta	Palla rossa 2, Zuccherina di Trieste	3
		medium	moyenne	mittel	media	Pan di zucchero, Palla rossa 2	5
		long	longue	lang	larga	Rossa di Treviso 2	7
		very long	très longue	sehr lang	muy larga	Catalogna a foglie frastagliate	9
5. (old 6) (*) (+)	**VG/ MG**	**Leaf: width ~~(as for 4)~~**	**Feuille : largeur ~~(comme pour 4)~~**	**Blatt: Breite ~~(wie unter 4)~~**	**Hoja: anchura ~~(como para 4)~~**		
QN	**(b)**	very narrow	très étroite	sehr schmal	muy estrecha	Catalogna puntarelle a foglia stretta	1
		narrow	étroite	schmal	estrecha	Rossa di Treviso 2	3
		medium	moyenne	mittel	media	~~Pan di zucchero,~~ Silla, Palla rossa precoce, Rossa di Treviso 4	5
		broad	large	breit	ancha	Bianca du Milano, Bianca invernale, Variegata di Chioggia	7
		very broad	très large	sehr breit	muy ancha	Pan di Zucchero	9
6. (old 7) (*) (+)	**VG/ MG**	**Leaf: shape**	**Feuille: forme**	**Blatt: Form**	**Hoja: forma**		
QN	**(b)**	narrow elliptic	elliptique étroit	schmal elliptisch	elíptica estrecha	~~Catalogna pugliese~~ Catalogna puntarelle a foglia stretta	1
		medium elliptic	elliptique moyenne	mittel elliptisch	elíptica media	~~Vérone,~~ Catalogna pugliese	2
		broad elliptic	elliptique large	breit elliptisch	elíptica ancha	Pan di zucchero, Rossa di Verona tardiva	3
		round	ronde	rund	redonda	~~Silla~~ A grumolo verde scuro	4

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7. (old 8) (*) (+)	**VG**	**Leaf: main color (excluding midrib)**	**Feuille : couleur (à l'exclusion de la nervure médiane)**	**Blatt: Farbe (Mittelrippe ausgenommen)**	**Hoja: color (excluyendo el nervio central)**		
~~QL~~ PQ	(b)	yellowish green	vert jaunâtre	gelblichgrün	verde amarillento	Bianca di Milano, Variegato di Castelfranco 2	1
		light green	vert clair	hellgrün	verde claro	Pan di Zucchero	2
		medium green	vert moyen	mittelgrün	verde medio	Bravo, Cicoria della Catalogna	3
		dark green	vert foncé	dunkelgrün	verde oscuro	Catalogna puntarelle a foglia frastagliata, Grumolo Nero	4
		light red	rouge clair	hellrot	rojo claro	??	5
		medium red	rouge moyen	mittelrot	rojo medio	Red Devil, Rossa di Treviso 4	6
		dark red	rouge foncé	dunkelrot	rojo oscuro	Nerone, Palla Rossa Zorzi	7
~~7 (old 8) (*) (+)~~	~~VG~~	~~**Leaf: color (excluding midrib)**~~	~~**Feuille : couleur (à l'exclusion de la nervure médiane)**~~	~~**Blatt: Farbe (Mittelrippe ausgenommen)**~~	~~**Hoja: color (excluyendo el nervio central)**~~		
		~~yellow~~	~~jaune~~	~~gelb~~	~~amarillo~~	~~Bianca invernale~~	~~1~~
		~~green~~	~~vert~~	~~grün~~	~~verde~~	~~Pan di zucchero~~	~~2~~
		~~red~~	~~rouge~~	~~rot~~	~~rojo~~	~~Red Devil~~	~~3~~
~~8 (old 9) (*)~~	~~VG~~	~~**Leaf: intensity of color (as for 7)**~~	~~**Feuille : intensité de la couleur (comme pour 7)**~~	~~**Blatt: Intensität der Farbe (wie unter 7)**~~	~~**Hoja: intensidad del color (como para 7)**~~		
~~QN~~	~~(b)~~	~~light~~	~~claire~~	~~hell~~	~~claro~~	~~Variegata di Castelfranco~~	~~3~~
		~~medium~~	~~moyenne~~	~~mittel~~	~~medio~~	~~Poncho, Rubro~~	~~5~~
		~~dark~~	~~foncée~~	~~dunkel~~	~~oscuro~~	~~Fidelio, Grumolo Nero~~	~~7~~
8. (old 10) (*) (+)	**VG**	**Leaf: anthocyanin coloration ~~at harvest maturity~~**	**Feuille : pigmentation anthocyanique ~~à maturité de récolte~~**	**Blatt: Anthocyanfärbung ~~zur Erntereife~~**	**Hoja: pigmentación antociánica ~~en la madurez de cosecha~~**		
QL	(b)	absent	absente	fehlend	ausente	Pan di zucchero	1
		present	présente	vorhanden	presente	Red Devil	9
9. (old 11) (*) (+)	**VG**	**Leaf: type of anthocyanin distribution (as for 4)**	**Feuille : type de distribution de l'anthocyane (comme pour 4)**	**Blatt: Art der Verteilung des Anthocyans (wie unter 4)**	**Hoja: tipo de distribución de la antocianina (como para 4)**		
~~QL~~ PQ	(b)	diffused only	seulement diffuse	nur diffus	sólamente difusa	Palla rossa 2, Red Devil	1
		in ~~spots~~ patches only				Variegata ~~di Lusia~~ di Castelfranco	2
		diffused and in ~~spots~~ patches				Variegata di Chioggia	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10. (old 12)	**VG**	**Leaf: profile of upper surface**	**Feuille : profil de la face supérieure**	**Blatt: Profil der Oberseite**	**Hoja: perfil del haz**		
(+)							
QN	**(b)**	strongly concave	fortement concave	stark konkav	fuertemente cóncavo	~~Palla rosa 2~~ Grumolo Nero	1
		weakly concave	faiblement concave	schwach konkav	débilmente cóncavo	Améliorée verte, Spadona	2
		flat	plane	eben	plano	Di Soncino, Rossa di Treviso 2	3
		weakly convex	faiblement convexe	schwach konvex	débilmente convexo	Autunale rosso	4
		strongly convex	fortement convexe	stark konvex	fuertemente convexo	~~Bianca di Lusia,~~ Granato	5
11. (old 9) (*) (+)	**VG**	**Leaf: color of midrib**	**Feuille : couleur de la nervure médiane**	**Blatt: Farbe der Mittelrippe**	**Hoja: color del nervio central**		
QL PQ	**(b)**	whitish	blanchâtre	weißlich	blancuzco	Bianca invernale, Bianca di Milano, Pan di Zucchero	1
		green	verte	grün	verde	~~Pan di zucchero~~ A grumolo verde, Katrina	2
		red	rouge	rot	rojo	Medusa, Silla	3
12. (old 8)	**VG**	**Leaf: glossiness**	**Feuille : brillance**	**Blatt: Glanz**	**Hoja: brillo**		
QN	**(b)**	weak	faible	gering	débil	Jupiter, Scarpia	3
		medium	moyenne	mittel	medio	Chioggia, Vérone	5
		strong	forte	stark	fuerte	Vulcano	7
~~**11 (old 10) (*) (+)**~~	~~**VG**~~	~~**Leaf: color of midrib**~~	~~**Feuille : couleur de la nervure médiane**~~	~~**Blatt: Farbe der Mittelrippe**~~	~~**Hoja: color del nervio central**~~		
~~**QL**~~	~~**(b)**~~	~~whitish~~	~~blanchâtre~~	~~weißlich~~	~~blancuzco~~	~~Bianca invernale, Bianca di Milano, Pan di Zucchero~~	~~1~~
~~**PQ**~~		~~green~~	~~verte~~	~~grün~~	~~verde~~	~~Pan di zucchero A grumolo verde, Katrina~~	~~2~~
		~~red~~	~~rouge~~	~~rot~~	~~rojo~~	~~Medusa, Silla~~	~~3~~
~~**10 (old 11) (*) (+)**~~	~~**VG**~~	~~**Leaf: anthocyanin coloration at harvest maturity**~~	~~**Feuille : pigmentation anthocyanique à maturité de récolte**~~	~~**Blatt: Anthocyanfärbung zur Erntereife**~~	~~**Hoja: pigmentación antociánica en la madurez de cosecha**~~		
~~**QL**~~	~~**(b)**~~	~~absent~~	~~absente~~	~~fehlend~~	~~ausente~~	~~Pan di zucchero~~	~~1~~
		~~present~~	~~présente~~	~~vorhanden~~	~~presente~~	~~Red Devil~~	~~9~~
~~**9. (old 13) (+)**~~	~~**VG**~~	~~**Leaf: anthocyanin distribution (as for 4)**~~	~~**Feuille : distribution de l'anthocyane (comme pour 4)**~~	~~**Blatt: Verteilung des Anthocyans (wie unter 4)**~~	~~**Hoja: distribución de la antocianina (como para 4)**~~		
~~**QL**~~	~~**(b)**~~	~~localized~~	~~localisée~~	~~lokal begrenzt~~	~~localizada~~	~~Variegata di Lusia~~	~~1~~
		~~entire~~	~~répartie sur toute la surface~~	~~auf der gesamten Blattfläche~~	~~esparcida~~	~~Palla rossa 2~~	~~9~~

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
~~**11 (old 12) (*) (+)**~~	~~**VG**~~	~~**Leaf: type of anthocyanin distribution (as for 4)**~~	~~**Feuille : type de distribution de l'anthocyane (comme pour 4)**~~	~~**Blatt: Art der Verteilung des Anthocyans (wie unter 4)**~~	~~**Hoja: tipo de distribución de la antocianina (como para 4)**~~		
~~**QL PQ**~~	~~**(b)**~~	~~diffused only~~	~~seulement diffuse~~	~~nur diffus~~	~~sólamente difusa~~	~~Red Devil, Palla rossa 2~~	~~1~~
		~~in spots patches only~~	~~seulement en taches~~	~~nur in Flecken~~	~~sólamente en manchas~~	~~Variegata di Lusia di Castelfranco~~	~~2~~
		~~diffused and in spots patches~~	~~diffuse et en taches~~	~~diffus und in Flecken~~	~~difusa y en manchas~~	~~Variegata di Chioggia~~	~~3~~
~~**12 (old 13) (+)**~~	~~**VG**~~	~~**Leaf: profile of upper surface**~~	~~**Feuille : profil de la face supérieure**~~	~~**Blatt: Profil der Oberseite**~~	~~**Hoja: perfil del haz**~~		
~~**QN**~~	~~**(b)**~~	~~strongly concave~~	~~fortement concave~~	~~stark konkav~~	~~fuertemente cóncavo~~	~~Palla rosa 2 Grumolo Nero~~	~~1~~
		~~weakly concave~~	~~faiblement concave~~	~~schwach konkav~~	~~débilmente cóncavo~~	~~Améliorée verte, Spadona~~	~~2~~
		~~flat~~	~~plane~~	~~eben~~	~~plano~~	~~Di Soncino, Rossa di Treviso 2~~	~~3~~
		~~weakly convex~~	~~faiblement convexe~~	~~schwach konvex~~	~~débilmente convexo~~	~~Autunale rosso~~	~~4~~
		~~strongly convex~~	~~fortement convexe~~	~~stark konvex~~	~~fuertemente convexo~~	~~Bianca di Lusia, Granato~~	~~5~~
13. (*)	**VG**	**Leaf: blistering**	**Feuille : cloqûre**	**Blatt: Blasigkeit**	**Hoja: abullonado**		
QN	**(b)**	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	~~Vérone~~ Catalogna pugliese	1
		weak	faible	gering	débil	Adria, Pan di zucchero, Rosso di Verona precoce, Villa	2
		medium	moyenne	mittel	media	Bianca di Milano, Uranus	3
		strong	forte	stark	fuerte	Jupiter	4
		very strong	très forte	sehr stark	muy fuerte	Bianca di Lusia, Mantovana	5
14. (+)	**VG**	**Leaf: undulation of margin**	**Feuille : ondulation du bord**	**Blatt: Randwellung**	**Hoja: ondulación del margen**		
QN	**(b)**	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Grumolo Nero, Rossa di Treviso 2	1
		weak	faible	gering	débil	~~Variegata di Chioggia~~ Zuccherina di Trieste	2
		medium	moyenne	mittel	media	Barba di cappuccino, Pan di Zucchero, 24 Ore	3
		strong	forte	stark	fuerte	Lusia Precocissima	4
		very strong	très forte	sehr stark	muy fuerte		5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15.	**VG**	**Leaf: ~~depth of~~ incision~~s~~ of margin**	**Feuille : ~~profondeur~~ des incision~~s~~ du bord**	**Blatt: ~~Tiefe der~~ Randeinschnitte**	**Hoja: ~~profundidad de las i~~ncisiones del margen**		
QN	**(b)**	absent or very ~~weak~~ shallow				~~Palla rossa 2~~ Rossa di Treviso 2	1
		~~weak~~ shallow				A Grumolo Bionda, Variegata di Castelfranco	3
		medium				24 Ore	5
		~~strong~~ deep				~~Catalogna puntarelle di Galatina~~ Catalogna di Chioggia, Katrina	7
		very ~~strong~~ deep				Catalogna puntarelle di Gaeta, Catalogna puntarelle di Galatina	9
16.	**VG**	**Leaf: type of incision of margin**	**Feuille : type d'incision du bord**	**Blatt: Art der Randeinschnitte**	**Hoja: tipo de incisión del margen**		
(+)							
PQ	**(b)**	sinuate	sinué	gebuchtet	sinuosa	Variegata di Lusia, Zuccherina di Trieste	1
		dentate	denté	gezähnt	dentada	Bravo, Catalogna gigante di Chioggia, Karyvos, Pan di Zucchero, Variegata di Castelfranco,	2
		serrate	dentelé	gesägt	serrada	Barbe de Capucin, Catalogna a foglie frastagliate	3
17.	**VG**	**Plant: head formation**	**Plante : formation de la pomme**	**Pflanze: Kopfbildung**	**Planta: formación del repollo**		
(*)							
QL	**(a)**	absent	absente	fehlend	ausente	Catalogna gigante di Chioggia	1
		present	présente	vorhanden	presente	Palla rossa 2	9
18.	**VG**	**Only varieties with: Head formation: present: Time of Head formation**					
		very early				Palla rossa precoce, Rossa di Verona precoce	1
		early				Palla rossa 3	3
		medium				Palla rossa 4, Pan di Zucchero, TT506	5
		late				Rossa di Verona Tardiva, Variegata di Chioggia	7
		very late				Palla rossa 6, Rossa di Treviso 2	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. (*)	**VG**	**Plant: intensity of head formation**	**Plante : intensité de la formation de la pomme**	**Pflanze: Stärke der Kopfbildung**	**Planta: intensidad de la formación del repollo**		
QN	**(a)**	weak	faible	gering	débil	Améliorée blonde, Grumolo verde scuro	3
		medium	moyenne	mittel	media	A Grumolo Bionda, Bianca di Bergamo, Pan di zucchero, Variegata di Chioggia	5
		strong	forte	stark	fuerte	Palla rossa 2	7
20. (*) (+)	**VG**	**Head: length**	**Pomme : longueur**	**Kopf: Länge**	**Repollo: longitud**		
QN	**(c)**	short	courte	kurz	corta	~~Palla rossa 2~~ A Grumolo Verde	3
		medium	moyenne	mittel	media	Bianca di Milano, Jupiter, Palla rossa 2	5
		long	longue	lang	larga	Pan di zucchero	7
21. (*)	**VG**	**Head: diameter**	**Pomme: diamètre**	**Kopf : Durchmesser**	**Repollo: diámetro**		
QN	**(c)**	very small	très petit	sehr klein	muy pequeño	Giulio, ~~Silla,~~ A Grumolo Verde Scu	1
		small	petit	klein	pequeño	Silla	3
		medium	moyen	mittel	medio	~~Palla rossa 2~~ Mantovana, Palla rossa precoce	5
		large	grand	groß	grande	~~Palla rossa 5~~ Bianca di Milano, Variegata di Chioggia	7
		very large	très grand	sehr groß	muy grande	Averto, Gloria	9
22. (*) (+)	**VG**	**Head: shape in longitudinal section**	**Pomme : forme en section longitudinale**	**Kopf: Form im Längsschnitt**	**Repollo: forma en sección longitudinal**		
PQ	**(c)**	elliptic	elliptique	elliptisch	elíptico	~~Nerone, Vulcane~~ Rossa di Treviso 4	1
		ovate	ovale	eiförmig	ovalado	Bianca di Milano, Da taglio bionda a foglia larga	2
		circular	arrondie	rund	circular	~~Silla~~ Palla rossa precoce	3
		transverse elliptic	elliptique transverse	quer elliptisch	elíptico transverso	Palla rossa 2, Variegata di Lusia	4
23. (*) (+)	**VG**	**Head: shape of top**	**Pomme : forme du sommet**				
QL	**(c)**	flattened	aplatie			Palla rossa 2, Variegata di Lusia	1
		rounded	arrondie			Lava, Palla rossa 5	2
		pointed	pointue			Bravo, Castelfranco 5, Granato, Pan di Zucchero, Rossa Verona precoce	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
Following new character 24 "Head: main color of outer leaves" from the merge of the previous char 25 "Head: main color of outer leaves" and char. 26 " Head: intensity of color of outer leaves"							
24. (*) (+)	**VG**	**Head: main color of outer leaves**	**Pomme : couleur principale des feuilles externes**	**Kopf: Hauptfarbe der Außenblätter**	**Repollo: color principal de las hojas exteriores**		
QL PQ	**(c)**	yellowish green	vert jaunâtre	gelblichgrün	verde amarillento	Bianca invernale, Variegata di Lusia	1
		light green	vert clair	hellgrün	verde claro	Pan di zucchero	2
		medium green	vert moyen	mittelgrün	verde medio	A grumolo verde, Bravo	3
		dark green	vert foncé	dunkelgrün	verde oscuro	Catalogna puntarelle a foglia frastagliata, Grumolo Nero	4
		light red	rouge clair	hellrot	rojo claro	??	5
		medium red	rouge moyen	mittelrot	rojo medio	??	6
		dark red	rouge foncé	dunkelrot	rojo oscuro	Palla rossa 2	7
~~**25 (old 26) (*)**~~	~~**VG**~~	~~**Head: main color of outer leaves**~~	~~**Pomme : couleur principale des feuilles externes**~~	~~**Kopf: Hauptfarbe der Außenblätter**~~	~~**Repollo: color principal de las hojas exteriores**~~		
~~**QL PQ**~~	~~**(c)**~~	~~yellow~~	~~jaunes~~	~~gelb~~	~~amarillas~~	~~Bianca invernale~~	~~1~~
		~~green~~	~~vertes~~	~~grün~~	~~verdes~~	~~Pan di zucchero~~	~~2~~
		~~red~~	~~rouges~~	~~rot~~	~~rojas~~	~~Red Devil~~	~~3~~
~~**26 (old 27)**~~	~~**VG**~~	~~**Head: intensity of color of outer leaves**~~	~~**Pomme : intensité de la couleur des feuilles externes**~~	~~**Kopf: Intensität der Farbe der Außenblätter**~~	~~**Repollo: intensidad del color en las hojas exteriores**~~		
~~**QN**~~	~~**(c)**~~	~~light~~	~~claire~~	~~hell~~	~~claro~~	~~Variegata di Castelfranco~~	~~3~~
		~~medium~~	~~moyenne~~	~~mittel~~	~~medio~~	~~Granato~~	~~5~~
		~~dark~~	~~foncée~~	~~dunkel~~	~~oscuro~~	~~Grumolo Nero~~	~~7~~
25. (old 26) (*)	**VG**	**Head: anthocyanin coloration of outer leaves**	**Pomme : pigmentation anthocyanique des feuilles externes**	**Kopf: Anthocyan-färbung der Außenblätter**	**Repollo: pigmentación antociánica de las hojas exteriores**		
QL	**(c)**	absent	absente	fehlend	ausente	Pan di zucchero	1
		present	présente	vorhanden	presente	~~Red Devil,~~ ~~Variegata di Lusia~~ Rossa di Verona precoce	9
~~**10. (old 29) (*)**~~	~~**VG**~~	~~**Head: anthocyanin distribution in outer leaves**~~	~~**Pomme : distribution de l'anthocyane sur les feuilles externes**~~	~~**Kopf: Anthocyan-verteilung in den Außenblättern**~~	~~**Repollo: distribución de la antocianina en las hojas exteriores**~~		
~~**QL**~~	~~**(c)**~~	~~localized~~	~~localisée~~	~~lokal begrenzt~~	~~localizada~~	~~Variegata di Lusia~~	~~1~~
		~~entire~~	~~répartie sur toute la surface~~	~~auf der gesamten Blattfläche~~	~~esparcida~~	~~Red Devil~~	~~2~~

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26. (old 28) (*)	**VG**	**Head: type of anthocyanin distribution of outer leaves**	**Pomme : type de distribution de l'anthocyane sur les feuilles externes**	**Kopf : Art der Anthocyan-verteilung der äußeren Blätter**	**Repollo : tipo de distribución de la antocianina de las hojas externas**		
~~QL~~ PQ	**(c)**	entire	répartie sur toute la surface			Red Devil	1
		diffused only	diffusée seulement			??	2
		in patches only	en taches seulement			Variegata di Lusia	3
		diffused and in patches	diffusées et en taches			Variegata di Castelfranco	4
		densely speckled	densément mouchetée			Tauro	5
27. (old 29) (*) (+)	**VG**	**Plant: stem: formation at harvest maturity**	**Plante : formation d'une tige à l'époque de maturité de récolte**	**Pflanze : Stengelbildung zum Zeitpunkt der Ernte**	**Planta : formación de tallo en la fecha de madurez de cosecha**		
QL		absent	absente	fehlend	ausente	Palla rossa 2	1
		present	présente	vorhanden	presente	Catalogna puntarelle a foglia frastagliata	9
28. (old 30)	**VG**	**Stem forming types only: Stem: degree of fasciation**	**Seulement les variétés formant une tige : Tige: intensité de la fasciation**	**Nur Sorten mit Stengelbildung: Stengel: Stärke der Verbänderung**	**Solo variedades que formen tallo: Tallo: grado de fasciación**		
QN	**(d)**	weak	faible	gering	baja	~~Clio, Koryvos~~ Catalogna puntarelle a foglia stretta	3
		medium	moyenne	mittel	media	Catalogna ~~pugliese~~ puntarelle a foglia frastagliata	5
		strong	forte	stark	alta	Catalogna puntarelle di ~~Gaeta~~ Galatina	7
29. (old 31)	**VG**	**Flower: color**	**Fleur : couleur**	**Blüte: Farbe**	**Flor: color**		
QL		white	blanche	weiß	blanco	Koryvos	1
		blue	bleue	blau	azul	Barba di cappuccino	9
		~~pink~~	~~rose~~	~~rosa~~	~~rosa~~		
~~11. (old 34) (*)~~	**~~MS~~**	**~~Time of harvest maturity~~**	**~~Époque de maturité de récolte~~**	**~~Zeitpunkt der Erntereife~~**	**~~Fecha de madurez de cosecha~~**		
~~QN~~		~~early~~	~~précoce~~	~~früh~~	~~temprana~~	~~Palla rossa 2~~	~~3~~
		~~medium~~	~~moyenne~~	~~mittel~~	~~media~~	~~Pan di zucchero~~	~~5~~
		~~late~~	~~tardive~~	~~spät~~	~~tardía~~	~~A grumola verde, Barba di cappuccino~~	~~7~~
30. (old 32)	**MS**	**Time of beginning of bolting**	**Époque de début de montaison**	**Zeitpunkt des Schoßbeginns**	**Fecha del comienzo de la salida a flor**		
QN		very early	très précoce	sehr früh	muy temprana	Catalogna pugliese, Koryvos	1
		early	précoce	früh	temprana	Poncho	3
		medium	moyen	mittel	media	Verone	5
		late	tardif	spät	tardía	Giulio	7
		very late	très tardif	sehr spät	muy tardía	Lady	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12. **(old 36)** **(*)**	**VG**	**Male sterility**	**Stérilité mâle**				
QL		absent	absente				1
		partial	partielle				3
		full present	totale				5
13. **(old 37)**	**VG**	**Production of an edible root**	**Production d'une racine consommable**				
QL		absent	absente				1
		present	présente			Tête d'anguille	9

8. Explanations on the Table of Characteristics

8.1 Key to Plant Sub-Types (under Section 5.3)

(1) Chioggia

~~Leaf chicory type characterized by a prostrated attitude of the outer leaves which are rounded and short; leaves are intensively red with, among varieties, presence of green color more or less distributed; the midrib is white and divided; the head formation is strong and with a dark red color.~~

(2) Verone

~~Leaf chicory characterized by a red limb and a distribution on the limb of red and green colors different among varieties, by elliptic and mid size leaves and a more erected leaves attitude than this of the Trevise type.~~

(3) Trevise

~~Leaf chicory characterized by an elliptic plant shape with red, narrow and long leaves and with a large white midrib, by a long and pointed head whose density is weak to medium. This type is eaten after a forcing period (like witloof).~~

Sub-type of Treviso:
- Rossa di Treviso precoce: early type are varieties with head formation suitable for field harvesting
- Rossa di Treviso tardivo: late type are varieties without head formation in the field but suitable for forcing.

Rossa di Treviso precoce


Rossa di Treviso tardivo

Plants with outer leaves discarded

(4) Variegata Castelfranco


Variegata di Castelfranco 2

(5) Variegata a palla

~~Leaf chicory characterized by an elliptic plant shape with green or yellowish, large and long leaves, with anthocyanin distribution in spots on the leaves and with a large white midrib, by a medium size and round head whose density is weak to medium.~~

Varieties of Variegata a palla type:

Variegata di Chioggia

Chioggia di Lusia

(6) Pain de sucre / Pan di Zucchero

~~Leaf chicory characterized by the absence of anthocyanin, an ovate head and by prostrated outer leaves.~~

Varieties of Pain de sucre / Pan di Zucchero type:

Pan di Zucchero

Bianca di Milano

Mantovana

(7) Améliorée Verte / Améliorée Blonde

~~Leaf chicory characterized by very strong head, by the absence of anthocyanin, by oboval, short and large leaves and by different degree of blistering.~~

Améliorée Verte

Améliorée Blonde

(8) Verde a grumolo

(9) Catalogna

~~Leaf chicory characterized by narrow, lanceolate, green and very long leaves. Part of this type which is eaten is the flowering stem at a non maturity stage.~~

Varieties of Catalogna type:

Catalogna del Veneto

Spadona

Clio

(10) Catalogna puntarelle

Varieties of Catalogna puntarelle Type:

Catalogna puntarelle a foglia frastagliata

Catalogna puntarele di Galatina

(11) Barbe de Capucin

~~Leaf chicory characterized by the absence of head, by long, narrow and dentate leaves and by a dark green foliage; this type is eaten after a forcing period.~~

8.2 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) Plant: All observations on the plant should be made just at harvest maturity.

(b) Leaf: All observations on the leaf should be made just at harvest maturity on leaves excluding the outer and center leaves.

(c) Head: All observations on the head should be made just at harvest maturity.

(d) Stem: All observations on the stem should be made on a flowering stem.

Harvest maturity stage is specific to the plant growth types:

- Chioggia, Verone, Pain de sucre / Pan di Zucchero, Variegata and Rossa di Treviso (early type) are harvested when a head has been formed;
- “Catalogna puntarelle” is harvested when stems (puntarelle shoots) are formed and the leaves development is complete;
- All other types: when the leaves are at the stage of complete growth.

8.3 Explanations for individual characteristics

Ad. 4: Leaf: length

Other photos could be provided

1
very short

3
short

5
medium

7
long

9
very long

Ad. 5: Leaf: width

Other photos could be provided.

1
very narrow

3
narrow

5
medium

7
broad

9
very broad

Ad. 6: Leaf: shape

Other photos could be provided.

1
narrow elliptic

2
medium elliptic

3
broad elliptic

4
round

Ad. 7: Leaf: main color (excluding midrib)

The main color of the observed leaves is the one which represents more than 50% of the surface of the leaves.

Ad. 8 (old 10): Leaf: anthocyanin coloration

Explanations for harvest maturity could be seen at chapter 8.2.

Ad. 9 (old 11): Leaf: type of anthocyanin distribution

Other photos could be provided.

1
diffused only

2
in patches only

3
diffused and in patches

Ad. 10 (old 12): Leaf: profile of upper surface

Other photos could be provided.

1
strongly concave

2
weakly concave

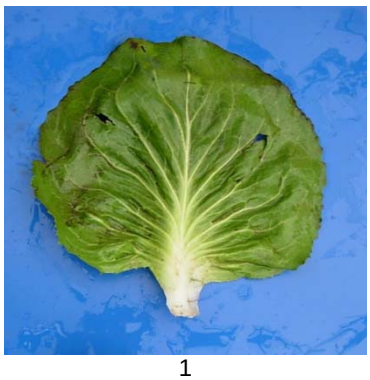
3
flat

4
weakly convex

5
strongy convex

Ad. 11 (old 9) : Leaf: color of midrib

Other photos could be provided.



1
whitish

2
green

3
red

~~Ad. 12: Leaf: anthocyanin distribution~~

~~One photo to be provided~~

~~1~~
~~localized~~

~~9~~
~~entire~~

Ad. 14 (old 15): Leaf: undulation of margin

Other photos could be provided.

1
absent or very weak

3
weak

5
medium

7
strong

??

9
very strong

Ad. 16 (old 17): Leaf: type of incision of margin

Other photos could be provided.

1
sinuate

2
dentate

3
serrate

Ad. 20 (old 21): Head: length

Other photos could be provided.

3
short

5
medium

7
long

Ad. 22 (old 23): Head: shape in longitudinal section

Other photos could be provided.

1
elliptic

2
ovate

3
circular

4
transverse elliptic

Ad. 23 (old 24): Head: shape of top

Other photos could be provided.

1
flattened

2
rounded

or

3
pointed

Ad. 24: Head: main color of outer leaves

The main color of the observed outer leaves is the one which represents more than 50% of the surface of the leaves.

Ad. 27 (old 29): Plant: stem: formation at harvest maturity

For explanations on harvest maturity, see explanations exposed in chapter 8.2

9. Literature

Adinolfi, A., Bianchi, M. & Frusciante, E., 1995: Caratterizzazione Morfo-Fisiologica Delle Varietà di Cicoria a Foglia Verde Iscritte al Registro Nazionale. Ente Nazionale Sementi Elette (E.N.S.E.), Milan, Quaderno n. Dell' E.N.S.E., No. 45.

Ryder, E., 1979: "Leafy Salad Vegetable," AVI Publishing Company, Westport, Connecticut.

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. var. *foliosum* Hegi
1.2	Common name	Leaf 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 Method of propagating the variety

4.1.1 Seed-propagated varieties

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

[#] Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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

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 (4)	**Leaf: length**		
	very short	Silla, Zuccherina di Trieste	1[ ]
	very short to short		2[ ]
	short	Palla rossa 2, Zuccherina di Triesta	3[ ]
	short to medium		4[ ]
	medium	Pan di zucchero, Palla rossa 2	5[ ]
	medium to long		6[ ]
	long	Rossa di Treviso 2	7[ ]
	long to very long		8[ ]
	very long	Catalogna a foglie frastagliate	9[ ]
5.2 (7)	**Leaf: main color (excluding midrib)**		
	yellowish green	Bianca di Milano, Variegato di Castelfranco 2	1[ ]
	light green	Pan di Zucchero	2[ ]
	medium green	Bravo, Cicoria della Catalogna	3[ ]
	dark green	Catalogna puntarelle a foglia frastagliata, Grumolo Nero	4[ ]
	light red	??	5[ ]
	medium red	Red Devil, Rossa di Treviso 4	6[ ]
	dark red	Nerone, Palla Rossa Zorzi	7[ ]
5.3 (8)	**Leaf: anthocyanin coloration**		
	absent	Pan di zucchero	1[ ]
	present	Red Devil	2[ ]
5.4 (11)	**Leaf: color of midrib**		
	whitish	Bianca invernale, Bianca di Milano, Pan di Zucchero	1[ ]
	green	A grumolo verde, Katrina	2[ ]
	red	Medusa, Silla	3[ ]

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

	Characteristics	Example Varieties	Note
5.5 (17)	**Plant: head formation**		
	absent	Catalogna gigante di Chioggia	1[ ]
	present	Palla rossa 2	9[ ]
5.6 (22)	**Head: shape in longitudinal section**		
	elliptic	Rossa di Treviso 4	1[ ]
	ovate	Bianca di Milano, Da taglio bionda a foglia larga	2[ ]
	circular	Palla rossa precoce	3[ ]
	transverse elliptic	Palla rossa 2, Variegata di Lusia	4[ ]
5.7 (24)	**Head: main color of outer leaves**		
	yellowish green	Bianca invernale, Variegata di Lusia	1[ ]
	light green	Pan di zucchero	2[ ]
	medium green	A grumolo verde, Bravo	3[ ]
	dark green	Catalogna puntarelle a foglia frastagliata, Grumolo Nero	4[ ]
	light red	??	5[ ]
	medium red	??	6[ ]
	dark red	Palla rossa 2	7[ ]
~~**5.8 (27)**~~	~~**Head: intensity of color of outer leaves**~~		
	~~very light~~		~~1[ ]~~
	~~very light to light~~		~~2[ ]~~
	~~light~~		~~3[ ]~~
	~~light to medium~~		~~4[ ]~~
	~~medium~~		~~5[ ]~~
	~~medium to dark~~		~~6[ ]~~
	~~dark~~		~~7[ ]~~
	~~dark to very dark~~		~~8[ ]~~
	~~very dark~~		~~9[ ]~~

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

	Characteristics	Example Varieties	Note
5.8 (25)	**Head: anthocyanin coloration of outer leaves**		
	absent	Pan di zucchero	1[ ]
	present	Rossa di Verona precoce	9[ ]
5.9 (27)	**Plant: stem: formation at harvest maturity**		
	absent	Palla rossa 2	1[ ]
	present	Catalogna puntarelle a foglia frastagliata	9[ ]
~~**5.11 (36)**~~	~~**Male sterility**~~		
	~~absent~~		~~1[ ]~~
	~~partial~~		~~3[ ]~~
	~~full present~~		~~5[ ]~~

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: color*	*yellow*	*green*

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?

Sub-type Chioggia	[…]
Sub-type Verona	[…]
Sub-type Rossa di Treviso precoce	[…]
Sub-type Rossa di Treviso tardivo	[…]
Sub-type Variegata di Castelfranco	[…]
Sub-type Variegata a palla	[…]
Sub-type Catalogna	[…]
Sub-type Catalogna puntarelle	[…]
Sub-type Pain de sucre / Pan di Zucchero	[…]
Sub-type Améliorée Verte / Améliorée Verte	[…]
Sub-type Verde a grumolo	[…]
Sub-type Barbe de Capucin	[…]

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

~~A representative color image 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

[Annex follows]

ANNEX

Comments by the Netherlands

Ad. 14 (old 15): Leaf: undulation of margin

The photo's show sinuate margins instead of undulating margin. Better photos are required.

[End of Annex and of document]