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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY FOR VEGETABLES

Forty-Eighth Session
Paestum, Italy, June 23 to 27, 2014

COMMENTS CONCERNING THE DRAFT TEST GUIDELINES FOR WITLOOF, CHICORY
(DOCUMENT TG/173/4(PROJ.2))

Document prepared by an expert from France

Disclaimer: this document does not represent UPOV policies or guidance

This document contains a working draft with comments of document TG/173/4(proj.2).

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UPOV

TG/173/4 (proj 2)
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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-seventh 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.]

TABLE OF CONTENTS PAGE

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.

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

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

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 recognisable inbred plants. In addition a population standard of 3% with the same acceptance probability should be applied to clearly recognisable 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 recognisable 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 : colour (characteristic 9)
(c) Leaf : intensity of green color (characteristic 10)
~~(d) Time of flowering (characteristic 22)~~
(e) Male sterility (characteristic 28)
~~(f) Head : length (characteristic 29)~~
~~(g) Head : shape in longitudinal section (characteristic 32)~~

Caracteristics linked to the conditions of the culture of the roots

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

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

Highlighted and underlined : additions proposed

~~Highlighted and strikethrough~~ : deletions

7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTERES/MERKMALSTABELLE/TABLA DE CARACTERES

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	**VG**	**Cotyledon : shape**					
(+)							
~~**QL**~~ **PQ**		narrow elliptic				Aline, Daliva, Final	1
		medium elliptic				??	2
		broad elliptic				Bea, Flash, Magnum, Toner	3
2.	**VG**	**Cotyledon : shape of tip**					
~~**QL**~~ **PQ**		truncate				Aline, Conrad, Janus, ~~Jaz~~, Magnum	1
		rounded				Bergère, Videna	2
3. **(*)** **(+)**	**VG**	**Plant : height ~~at~~ ~~vegetative stage~~**					
		short				Carla	3
~~**QL**~~ **QN**		medium				~~Flash, Marriott~~, Ecrine, Selkis	5
		Tall				Dirv, Topmodel, Zilia	7
4. **(*)**	**VG**	**Foliage : attitude**					
	(a)	erect				Dirv	1
~~**QL**~~ **QN**		semi-erect				~~Flash, Turbo~~, Ecrine, Ombline	3
		horizontal				Perfo	5
5.	**VG**	**Leaf : attitude of tip**					
	(a)	erect				Platine	1
~~**QL**~~ **QN**		semi-erect				~~Turbo~~, Crenoline, Ecribe	3
		horizontal				??	5
6. **(*)** **(+)**	**VG**	**Leaf : length**					
	(a)	short				Carla, ~~Conrad~~	3
QN		medium				~~Elsa, Flash, Marriott~~, Ecrine, Ombline	5
		long				~~Turbo~~, Atlas, Platine	7
		very long				~~Vilmorin No 5~~, Zilia	9

Comment from NL : if no examples for 1 and 5, then delete this characteristic

Comment from FR: hard to assess. Could we have diversity with new crossing in Chicorium ?

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7. **(*)** **(+)**	**VG**	**Leaf :width**					
~~**QL**~~ **QN**	**(a)**	narrow				Carla	3
		medium				Baccara, Bea, Extral, Flash, Zoom	5
		broad				Atlas, Nica, Quartz, Symphonie	7
8. **(+)**	**VG**	**Leaf :ratio length / width**					
	(a)	~~Small~~ low				Carla, Vitessa	3
QL		Medium				Baccara, Bea, Ecrine	5
		~~Large~~ high				Senator, Zilia	7
9. **(*)**	**VG**	**Leaf :colour**					
	(a)	~~only~~ green	Red colour ≠ anthocyanin coloration			Zoom	1
~~**QL**~~ **PQ**		~~only~~ red				Carla	2
		green and red				Rubina, Festive	3
10. **(*)**	**VG**	**Leaf :intensity of green colour**	It should be good to have example varieties for each level in each colour				
~~**QL**~~ **QN**	**(a)**	light				Jaz	3
		medium				~~Bea, Toner~~, Ombline	5
		dark				~~Conrad, Magic, Zoom~~, Genis	7
11.	**VG**	**Leaf :glossiness**					
~~**QL**~~ **QN**	**(a)**	absent or very weak				Quartz	1
		weak				Abellis, Flash, Rinof	3
		medium				Baccara, Fakir, Toner	5
		strong				Dirv, Magic, , Quartz, Rikita	7
12. **(*)**	**VG**	**Leaf :shape in cross section**					
~~**QL**~~ **PQ**	**(a)**	concave				Abellis, Crenoline	1
		flat				Excellence, Perfo, Zilia, Zoom	2
		convex				Dirv	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13. (*)	**VG**	**Leaf :blistering**					
QN	**(a)**	absent or very weak				Quartz, Rinof	1
		weak				Abellis, Flash, Platine, Quartz	3
		medium				Alliance, Carla, Ecrine,	5
		strong				Monitor, Rikita, Zoom	7
14.	**VG**	**Leaf :anthocyanin coloration of midrib**					
QN	**(a)**	absent or very weak				Baccara, Carla, Excellence, Dirv, ~~Jaz~~, Spectra	1
		weak				Abellis, Flash, Jocker	3
		medium				Carla, Sigma, Zoom	5
		strong				Victoria	7
15.	**VG**	**Leaf :undulation of margin**					
QN	**(a)**	weak				Venus	3
		medium				Atlas, Baccara, Platine	5
		strong				Montblanc, Sigma	7
16.	**VG**	**Leaf :incisions of basal part**					
QN	**(a)**	absent or very weak				??	1
		weak				Crenoline, Selkis,Monitor	3
		medium				Alliance, Bea, Topscore	5
		strong				Atlas, Final, Victoria, Zilia	7
17. (*)	**VG**	**Leaf :incisions of margin of upper third**					
QN	**(a)**	absent or very weak				Carla, Selkis	1
		weak				Abellis, Flash, Janus, Toner, Topscore	3
		medium				Baccara, Jocker, Symphonie, Zoom	5
		strong				Platine, Victoria	7
18.	**VG**	**Leaf :depth of incisions of margin of upper third**					
QN	**(a)**	shallow				Abellis, Desir, Flash, Zoom	3
		medium				Baccara, Ombline, Symphonie	5
		deep				Rikita	7

Depending on temperature (cold) Some conditions of observation should be define ➔ (+) ?

What about « Leaf :depth of incisions of basal part » ?

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. **(+)**	**VG**	**Leaf :shape of tip**					
~~**QL**~~ **PQ**	**(a)**	rounded				Abellis, Magnum, Rumba, Topscore	1
		weakly pointed				Atlas, Fakir, Mona, Takine	2
		strongly pointed				Magic, Platine	3
~~**20.**~~	~~**VG**~~	~~**Root : size**~~					
~~**QN**~~		~~small~~					~~3~~
		~~medium~~				~~Bea~~	~~5~~
		~~large~~				~~Focus~~	~~7~~
21. **(+)**	**VG**	**Bolting tendency (from an early sowing)**					
QN	**(c)**	absent or very weak				Carla	1
		weak				Bea, Montblanc	3
		medium				Flash, Ombline	5
		strong				Quartz, Topmodel	7
		very strong				Vilmorin No. 5	9
22.	**VG**	**Time of beginning of flowering**					
QN	**(c)**	very early				??	1
		early				Jadore, Prestance, Takine	3
		medium				Abellis, Ecrine, Hermès	5
		late				??	7
		very late				??	9
23. **(old 22)**	**MG**	**Flowering stem : height**					
QN	**(c)**	short				??	3
		medium				Samba, Désir, Perfo	5
		tall				Atlas, Festive, Final, Selkis	7
24. **(old 23)**	**VG**	**Flowering stem : branching**					
QN	**(c)**	weak				??	3
		medium				Atlas, Ecrine, ~~Jaz~~, Perfo	5
		strong				Abellis, Final	7

These 2 characteristics (21 and 22) are independent of each other

Could be correlated with the length of the axis (Head)

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25. **(old 24)** **(+)**	**~~MS~~ VG**	**Flowering stem : size of stipule**					
QN	**(c)**	small				Crenoline, Excellence, Magnum	3
		medium				Bea, Desir, Festive, Topmodel	5
		large				Isatis, Maraichere	7
26. **(old 25)**	**VG**	**Flowering stem : dentation of stipule**					
QN	**(c)**	small				Alliance, Elegance, Flash, Jadore	3
		medium				Abellis, Platine, Terosa	5
		large				??	7
27. **(old 26)**	**VG**	**Flower : colour**					
~~QL~~ PQ	**(c)**	white				??	1
		pink				Isatis, Selkis	2
		blue				Bea, Flash	3
28.	**VG**	**Male sterility**					
(*)							
QL		absent				Flash	1
		present				Ombline	9
29. **(old 27)** **(*)**	**MS**	**Head : length**					
QN	**(b)**	very short				Carla	1
		short				Mona	3
		medium				Bea, Monitor, Ombline	5
		long				Faro, Focus, Revor, Perfo, Prestance	7
		very long				Normale	9
30. **(old 28)** **(*)**	**MS**	**Head :maximum diameter**					
QN	**(b)**	small				Carla	3
		medium				Bea, Ecrine	5
		large				Mona, Zilia	7
31. **(old 29)**	**MS**	**Head :ratio length / diameter**					
QL	**(b)**	small				Isatis, Opale, Mona	3
		medium				Bea, Désir, Panache	5
		large				Atlas, Final, Focus	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
32. **(old 30)** **(*)** **(+)**	**VG**	**Head :shape in longitudinal section**					
~~**QL**~~ **PQ**	**(b)**	narrow elliptic				Symphonie	1
		elliptic				Dirv,Excellence, Jocker, Rinof	2
		broad elliptic				Crenoline, Topmodel	3
		ovate				Abellis, ~~Histerra~~, Selkis, ~~Zoom~~	4
33. **(old 31)** **(*)**	**VG**	**Head :shape of apex**					
~~**QL**~~ **PQ**	**(b)**	rounded				Abellis, Crenoline, Mona	1
		weakly pointed				Baccara, Elegance, Toner	2
		strongly pointed				Fakir, Symphonie, Zoom	3
~~**34.**~~ ~~**(old 32)**~~	~~**VG**~~	~~**Head :creamish hue of midrib**~~					
~~**QL**~~		~~absent~~				~~Zoom~~	~~1~~
		~~present~~				~~Caressa~~	~~9~~
35. **(old 33)** **(*)**	**VG**	**Head :colour of leaf blade (<u>outer</u> side)**					
PQ	**(b)**	~~only~~ yellow				Flexine	1
		~~only~~ red				Carla	2
		yellow and red					3
36. **(old 34)** **(*)**	**VG**	**Head :intensity of colour of leaf blade**					
~~**QL**~~ **QN**	**(b)**	light				Elegance, Perfo	3
		medium				Baccara, Ombline	5
		dark				Abellis, Ecrine	7
37. **(old 35)**	**VG**	**Head :blistering of leaf blade**					
QN	**(b)**	absent or very weak				Hermès, Topmodel	1
		weak				Tabor	3
		medium				Baccara, Festive, Ivora, Zoom	5
		strong				Roelof	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
38. **(old 36)** **(+)**	**VG**	**Head :closure of apex**					
QN	**(b)**	fully open					1
		half open				Abellis, Zilia	2
		closed				Baccara, Hermès	3
39. **(old 37)**	**VG**	**Head : firmness**					
~~QN~~ **PQ**	**(b)**	loose				Abellis, Zilia	3
		medium				Bea, Crenoline, Jadore	5
		firm				Baccara, Ecrine, Zoom	7
40.	**VG**		**Chicon : longueur de l'axe (pour une période de forçage classique)**				
QN	**(b)**		très courte				1
			courte				3
			moyenne				5
			longue				7
			très longue				9
41.	**VG**		**Chicon : pourcentage d'axe brun (pour un forçage sans $CaCl_2$)**				
QN	**(b)**		< 10 %				1
			[20-30 %[				3
			[45-55 %[				5
			[70-80 %[				7
			≥ 90 %				9
42. **(old 38)**	**VG**	**Seed : colour**					
~~QL~~ **PQ**		white				Atlas, Opale	1
		brown				Abellis, Isatis	2
		black				Carla, Festive	3

Seeds could be separated on colour or size.
Proposition of deletion?

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.

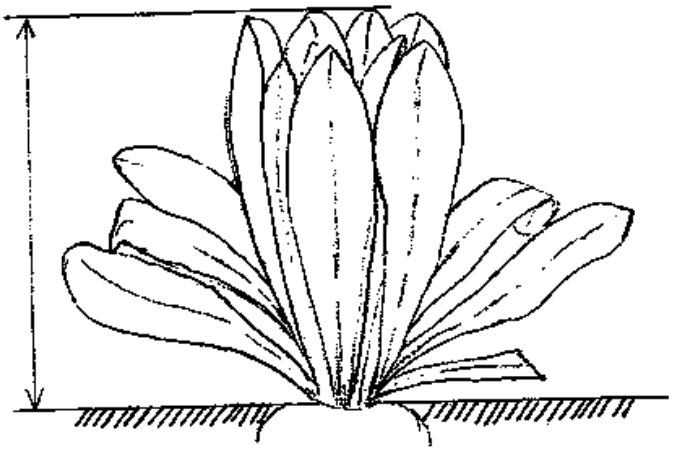
8.1 Explanations for individual characteristics

Ad. 1 : Cotyledon : shape

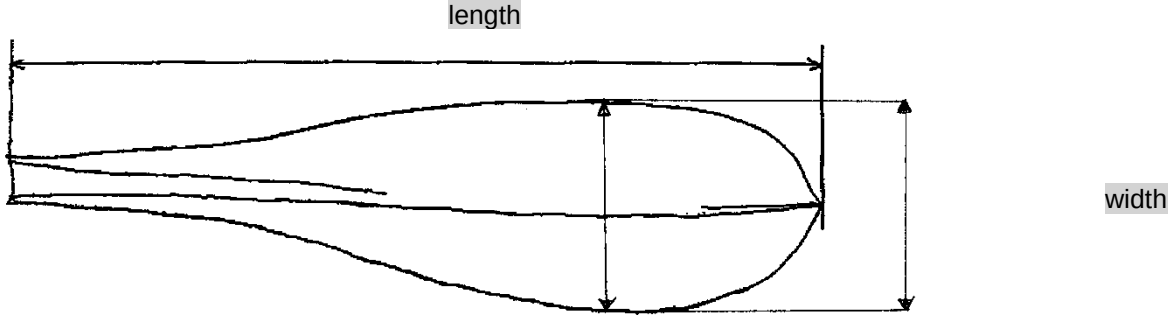
Picture will be added

1	2	3
Narrow elliptic	Medium elliptic	Broad elliptic

Ad. 3: Plant: height at vegetative stage



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

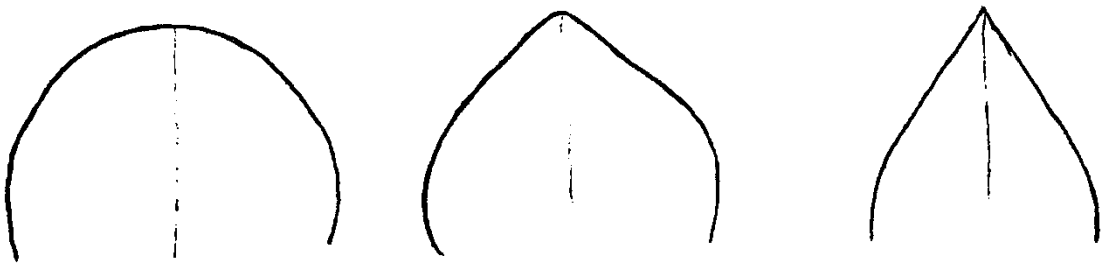


Ad. 8 : Leaf : ratio length / width

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. 21 : Bolting tendency

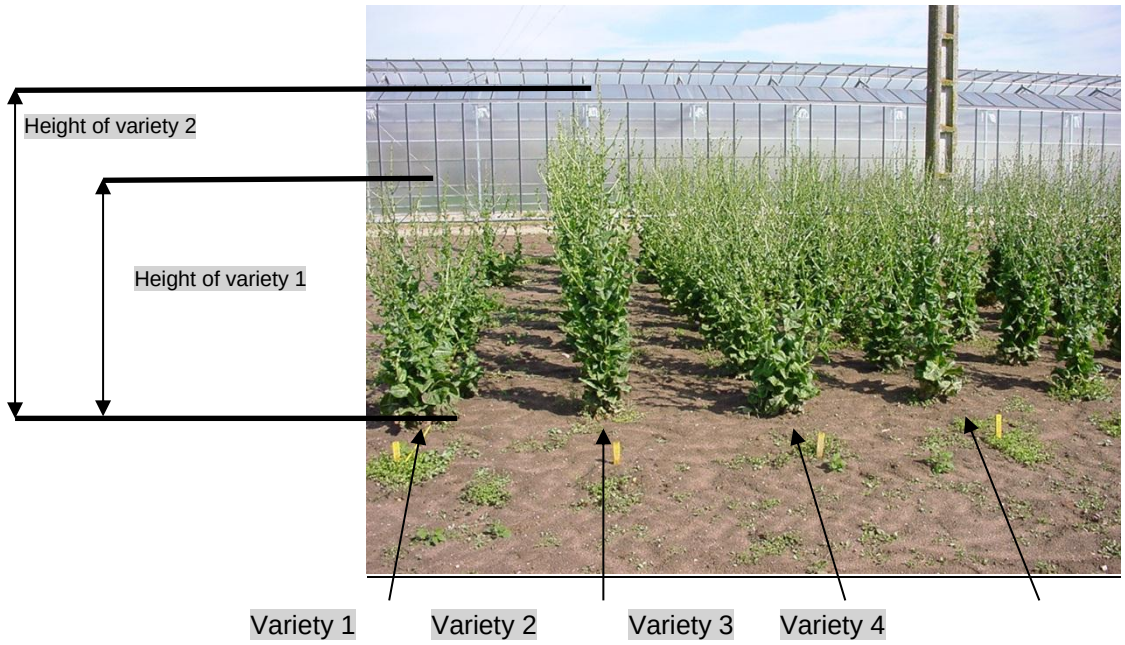
This caracteristic should be observed in early sowing conditions with reference to of the example varieties.
The variety with an abscence of bolting tendancy or a very weak bolting tendancy (note1) shows a hight tolerance to bolting (Resistance).
In the opposite, a variety with a very strong bolting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

Ad. 22: Time of beginning of flowering

~~Observations are made on flowering at the first open flower.~~
~~Based on such method, the time of beginning of flowering of a variety is the average of the dates recorded on the plants.~~
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. 23: Flowering stem : height

~~To be observed for each variety individually when the first flowers are open.~~
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. 3~~2~~1 : Head : shape in longitudonal section

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	**Leaf : length**		
(6)	short	Carla, ~~Conrad~~	3
	medium	~~Elsa, Flash, Marriott~~, Ecrine, Ombline	5
	long	~~Turbo~~, Atlas, Platine	7
	very long	~~Vilmorin No 5~~, Zilia	9
5.2	**Leaf : colour**		
(9)	~~only~~ green	Zoom	1
	~~only~~ red	Carla	2
	green and red	Festive, Rubina	3
5.3	**Leaf : intensity of ~~green~~ colour**		
(10)	light	Jaz	3
	medium	~~Bea, Toner,~~ Ombline	5
	dark	~~Conrad, Magic, Zoom,~~ Genis	7
~~**5.4**~~	~~**Time of flowering**~~		
~~**(22)**~~	~~very early~~		~~1~~
	~~early~~		~~3~~
	~~medium~~		~~5~~
	~~late~~		~~7~~
	~~very late~~		~~9~~
5.~~5~~ 4	**Male sterility**		
(2~~8~~7)	absent	Flash	1
	present	Ombline	9
5.~~ 6~~ 5	**Head length**		
(2~~9~~8)	very short	Carla	1
	short	Mona	3
	medium	Bea, Monitor, Ombline	5
	long	Faro, Focus, Perfo, Prestance, Revor	7

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

	very long	Normale	9
5. ~~7~~ 6	**Head : shape in longitudinal section**		
(3~~2~~1)	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

Comments from the Netherlands

Add to all MS characteristics also VG

if no examples for 1 and 5, then delete this characteristic **Char 5:** .

Furthermore some explanations concerning the individual shape characteristics could be added

[End of document]