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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT**KALE**

UPOV Code(s): BRASS_OLE_COS;
BRASS_OLE_GAM; BRASS_OLE_GAS;
BRASS_OLE_GAV; BRASS_OLE_PAL

Brassica oleracea L. var. *costata* DC.;
Brassica oleracea L. var. *medullosa* Thell.;
Brassica oleracea L. var. *sabellica* L.;
Brassica oleracea L. var. *viridis* L.;
Brassica oleracea L. var. *palmifolia* DC.

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

prepared by an expert from Japan

to be considered by

*the Technical Committee at its fifty-ninth session
to be held in Geneva on October 23 and 24, 2023*

Disclaimer: this document does not represent UPOV policies or guidance

* 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.]

Alternative names:*

| <i>Botanical name</i> | <i>English</i> | <i>French</i> | <i>German</i> | <i>Spanish</i> |
|---|--|---|---|--|
| <i>Brassica oleracea</i> L. var. <i>costata</i> DC., <i>Brassica oleracea</i> L. var. <i>tranchuda</i> L. H. Bailey | Bedford cabbage, Braganza, Portugese cole, Portuguese kale, Seakale cabbage, Tronchuda cabbage, Tronchuda kale | Chou tronchuda, Chou à grosses côtes | Portugiesischer Kohl, Rippenkohl, Tronchudakohl | Col de pezón grueso, Col tronchuda |
| <i>Brassica oleracea</i> L. var. <i>medullosa</i> Thell. | Marrow-stem kale | Chou moellier | Futterkohl, Markstammkohl | Col medular, Col de meollo, Col meollosa |
| <i>Brassica oleracea</i> L. var. <i>sabellica</i> L., <i>Brassica oleracea</i> L. var. <i>acephala</i> auct., <i>Brassica oleracea</i> L. var. <i>selenisia</i> L. | Borecole, Curly kale, Dwarf Siberian kale, Kitchen kale, Scotch kale | Chou d'aigrette, Chou fris  | Braunkohl, Federkohl, Gr nkohl, Krauskohl | Col crespaa, Col rizada |
| <i>Brassica oleracea</i> L. var. <i>viridis</i> L., <i>Brassica</i> <i>oleracea</i> L. var. <i>acephala</i> DC. | Collards, Cow cabbage, Fodder kale, Kale, Spring-heading cabbage, Tall kale, Tree kale | Chou cavalier, Chou commun, Chou forrager | Blattkohl, Bl tterkohl, Futterkohl, Kuhkohl | Col forrajera |
| <i>Brassica oleracea</i> L. var. <i>palmifolia</i> DC. | Giant Jersey kale, Jersey kale, Palm kale, Palm-tree kale, Tree kale | Chou palmier | Palmkohl, Italienischer Kohl | |

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.

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1. Subject of these Test Guidelines

- 1.1 These Test Guidelines apply to all varieties of *Brassica oleracea* L. var. *costata* DC., *Brassica oleracea* L. var. *medullosa* Thell., *Brassica oleracea* L. var. *sabellica* L., *Brassica oleracea* L. var. *viridis* L. and *Brassica oleracea* L. var. *palmifolia* DC.
- 1.2 Guidance on the use of Test Guidelines for inter-variant hybrids that are not explicitly covered by Test Guidelines is provided in document TGP/13 “Guidance for New Types and Species”.

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 seeds or young plants.
- 2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

seed-propagated varieties: 20g or 5000 seeds
vegetatively propagated varieties: 30 plants of normal transplantation size

In the case of seed, 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*

- 3.1.1 The minimum duration of tests should normally be two independent growing cycles.
- 3.1.2 The two independent growing cycles should be in the form of two separate plantings.
- 3.1.3 The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.

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 In the case of seed-propagated varieties, each test should be designed to result in a total of at least 40 plants which should be divided between at least 2 replicates.
- 3.4.2 In the case of vegetatively propagated varieties, each test should be designed to result in a total of at least 20 plants which should be divided between at least 2 replicates.
- 3.4.3 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 or Parts of Plants to be Examined

In the case of seed-propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observation made on all plants in the test, disregarding any off-type plants.

In the case of vegetatively propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observation 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 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 These Test Guidelines have been developed for the examination of cross-pollinated, self-pollinated (inbred line), hybrid varieties and vegetatively propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.
- 4.2.3 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.
- 4.2.4 For the assessment of uniformity of single cross hybrids and self-pollinated varieties (inbred lines), a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 40 plants, 2 off-types are allowed. In addition, for single cross hybrids, a population standard of 3% and an acceptance probability of at least 95% should be applied for inbred plants obviously resulting from the selfing of a parent line. In the case of a sample size of 40 plants, 3 inbred plants are allowed.
- 4.2.5 For the assessment of uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 plants, 1 off-type is allowed.

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 or plant 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) Plant: position of growing point (characteristic 3)
 - (b) Leaf: color (characteristic 9)
 - (c) Leaf: variegation (characteristic 11)
- 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 All relevant states of expression are presented in the characteristic.
- 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*

| | | English | français | deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|---|---|------------------------------------|------------------------------|-------------------------------|--------------------------------|--|---------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | Name of characteristics in English | Nom du caractère en français | Name des Merkmals auf Deutsch | Nombre del carácter en español | | |
| | | states of expression | types d'expression | Ausprägungsstufen | tipos de expresión | | |

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

3 Type of expression
 QL Qualitative characteristic – see Chapter 6.3
 QN Quantitative characteristic – see Chapter 6.3
 PQ Pseudo-qualitative characteristic – see Chapter 6.3

4 Method of observation (and type of plot, if applicable)
 MG, MS, VG, VS – see Chapter 4.1.5

5 (+) See Explanations on the Table of Characteristics in Chapter 8.2

6 (a)-(d) See Explanations on the Table of Characteristics in Chapter 8.1

7 Not applicable

7. Table of Characteristics/Tableau des caract res/Merkmalstabelle/Tabla de caracteres

| | English | | fran ais | | deutsch | espa ol | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|---------------|---|---|--|--|---|---------|--|---------------|
| 1. (*) | QN | MG/MS/VG | (+) | (a) | | | | |
| | Plant: height | Plante : hauteur | Pflanze: H he | Planta: altura | | | | |
| | very short | tr s courte | sehr niedrig | muy baja | | | | 1 |
| | very short to short | tr s courte   courte | sehr niedrig bis niedrig | muy baja a baja | | | | 2 |
| | short | courte | niedrig | baja | Lage Moskrul, Starbor | | | 3 |
| | short to medium | courte   moyenne | niedrig bis mittel | baja a media | | | | 4 |
| | medium | moyenne | mittel | media | Darkibor, Marriot, Rossignol | | | 5 |
| | medium to tall | moyenne   haute | mittel bis hoch | media a alta | | | | 6 |
| | tall | haute | hoch | alta | Esthe, Fizz, Nero di Toscana, Redbor | | | 7 |
| | tall to very tall | haute   tr s haute | hoch bis sehr hoch | alta a muy alta | | | | 8 |
| | very tall | tr s haute | sehr hoch | muy alta | Ostfriesische Palme | | | 9 |
| 2. | QN | MS/VG | (+) | (a) | | | | |
| | Plant: diameter | Plante : diam tre | Pflanze: Durchmesser | Planta: di metro | | | | |
| | very small | tr s petit | sehr klein | muy peque o | | | | 1 |
| | very small to small | tr s petit   petit | sehr klein bis klein | muy peque o a peque o | | | | 2 |
| | small | petit | klein | peque o | Tintoreto | | | 3 |
| | small to medium | petit   moyen | klein bis mittel | peque o a medio | | | | 4 |
| | medium | moyen | mittel | medio | Darkibor, Dwarf Green Curled | | | 5 |
| | medium to large | moyen   grand | mittel bis gro  | medio a grande | | | | 6 |
| | large | grand | gro  | grande | Cottagers, Esthe, Nero di Toscana | | | 7 |
| | large to very large | grand   tr s grand | gro  bis sehr gro  | grande a muy grande | | | | 8 |
| | very large | tr s grand | sehr gro  | muy grande | | | | 9 |
| 3. (*) | QN | VG | (+) | (a) | | | | |
| | Plant: position of growing point | Plante : position du point v g tatif | Pflanze: Position des Vegetationspunkts | Planta: posici n del punto vegetativo | | | | |
| | lower part | partie inf rieure | unterer Teil | parte inferior | Esthe, Fizz | | | 1 |
| | lower to middle part | partie inf rieure   partie centrale | unterer bis mittlerer Teil | parte inferior a parte central | Halbhoher gr ner krauser | | | 2 |
| | middle part | partie centrale | mittlerer Teil | parte central | Black Magic, Kobolt | | | 3 |
| | middle to upper part | partie centrale   partie sup rieure | mittlerer bis oberer Teil | parte central a parte superior | | | | 4 |
| | upper part | partie sup rieure | oberer Teil | parte superior | Dwarf Green Curled, Kadet, Westlandse Herfst | | | 5 |

| | English | fran ais | deutsch | espa ol | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|-----------|--------------------------------|------------------------------------|--------------------------------|--------------------------------|--|---------------|
| 4. | QN | MG/MS/VG | (+) | (a) | | |
| | Plant: number of leaves | Plante : nombre de feuilles | Pflanze: Anzahl Bl tter | Planta: n mero de hojas | | |
| | few | petit | gering | bajo | Fizz, Pentland Brig | 1 |
| | few to medium | petit   moyen | gering bis mittel | bajo a medio | | 2 |
| | medium | moyen | mittel | medio | Redbor, Westlandse Herfst | 3 |
| | medium to many | moyen    lev  | mittel bis hoch | medio a alto | | 4 |
| | many |  lev  | hoch | alto | Esthe, Winnetou | 5 |
| 5. | QN | MG/MS/VG | (+) | (a) | | |
| | Stem: length | Tige : longueur | Stiel: L nge | Tallo: longitud | | |
| | very short | tr s courte | sehr kurz | muy corta | | 1 |
| | very short to short | tr s courte   courte | sehr kurz bis kurz | muy corta a corta | | 2 |
| | short | courte | kurz | corta | Rednex | 3 |
| | short to medium | courte   moyenne | kurz bis mittel | corta a media | | 4 |
| | medium | moyenne | mittel | media | Dwarf Green Curled, Fizz | 5 |
| | medium to long | moyenne   longue | mittel bis lang | media a larga | | 6 |
| | long | longue | lang | larga | | 7 |
| | long to very long | longue   tr s longue | lang bis sehr lang | larga a muy larga | | 8 |
| | very long | tr s longue | sehr lang | muy larga | | 9 |
| 6. | QN | MS/VG | (+) | (a), (d) | | |
| | Stem: diameter | Tige : diam tre | Stiel: Durchmesser | Tallo: di metro | | |
| | very small | tr s petit | sehr klein | muy peque o | | 1 |
| | very small to small | tr s petit   petit | sehr klein bis klein | muy peque o a peque o | | 2 |
| | small | petit | klein | peque o | Thousand Head | 3 |
| | small to medium | petit   moyen | klein bis mittel | peque o a medio | | 4 |
| | medium | moyen | mittel | medio | Goldeneye | 5 |
| | medium to large | moyen   grand | mittel bis gro  | medio a grande | | 6 |
| | large | grand | gro  | grande | Camaro | 7 |
| | large to very large | grand   tr s grand | gro  bis sehr gro  | grande a muy grande | | 8 |
| | very large | tr s grand | sehr gro  | muy grande | | 9 |

| | English | | fran ais | | deutsch | espa ol | Example Varieties Exemples Beispielsorten Variedades ejemplo | Note/ Nota |
|---------------|---|--|---|---|-------------------------------|---------|---|---------------|
| 7. | QN | VG | (+) | (d) | | | | |
| | Stem: tendency to branch | Tige : tendance   se ramifier | Stiel: Neigung zur Verzweigung | Tallo: tendencia a ramificar | | | | |
| | weak | faible | gering | d bil | Bombardier | | 1 | |
| | weak to medium | faible   moyenne | gering bis mittel | d bil a media | | | 2 | |
| | medium | moyenne | mittel | media | Thousand Head | | 3 | |
| | medium to strong | moyenne   forte | mittel bis stark | media a fuerte | | | 4 | |
| | strong | forte | stark | fuerte | Anglian Gold | | 5 | |
| 8. (*) | QN | VG | (+) | (a), (b) | | | | |
| | Leaf: attitude | Feuille : port | Blatt: Haltung | Hoja: porte | | | | |
| | erect | dress  | aufrecht | erecto | Esthe, Nero di Toscana | | 1 | |
| | erect to semi-erect | dress    demi-dress  | aufrecht bis halbaufrecht | erecto a semierecto | | | 2 | |
| | semi-erect | demi-dress  | halbaufrecht | semierecto | Cottagers, Redbor | | 3 | |
| | semi-erect to horizontal | demi-dress    horizontal | halbaufrecht bis waagrecht | semierecto a horizontal | | | 4 | |
| | horizontal | horizontal | waagrecht | horizontal | Marriot | | 5 | |
| 9. (*) | PQ | VG | | (a), (b) | | | | |
| | Leaf: color | Feuille : couleur | Blatt: Farbe | Hoja: color | | | | |
| | light green | vert clair | hellgr n | verde clara | Tintoreto | | 1 | |
| | medium green | vert moyen | mittelgr n | verde medio | Dwarf Green Curled, Esthe | | 2 | |
| | dark green | vert fonc  | dunkelgr n | verde oscuro | Kapitan | | 3 | |
| | grey green | vert-gris | graugr n | verde gris ceo | Fizz | | 4 | |
| | blue green | vert-bleu | blaugr n | verde azulado | Black Magic, Nero di Toscana | | 5 | |
| | reddish green | vert rouge tre | r tlichgr n | verde rojizo | Redbor | | 6 | |
| | purple | pourpre | purpurn | p rpura | Rednex | | 7 | |
| 10. | QN | VG | (+) | (a), (b) | | | | |
| | Leaf: intensity of anthocyanin coloration of main vein | Feuille : intensit  de la pigmentation anthocyanique de la nervure principale | Blatt: Intensit t der Anthocyanf rbung der Mittelrippe | Hoja: intensidad de la pigmentaci n antocianica del nervio principal | | | | |
| | absent or very weak | absente ou tr s faible | fehlend oder sehr gering | ausente o muy d bil | Darkibor, Ostfriesische Palme | | 1 | |
| | weak | faible | gering | d bil | | | 2 | |
| | medium | moyenne | mittel | media | Midnight Sun | | 3 | |
| | strong | forte | stark | fuerte | Redbor, Rednex | | 4 | |
| | very strong | tr s forte | sehr stark | muy fuerte | | | 5 | |

| | English | fran ais | deutsch | espa ol | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|----------------|-------------------------------------|--|---|---|--|---------------|
| 11. (*) | QL | VG | (a), (b), (c) | | | |
| | Leaf: variegation | Feuille : panachure | Blatt: Panaschierung | Hoja: variegaci n | | |
| | absent | absente | fehlend | ausente | Esthe | 1 |
| | present | pr sente | vorhanden | presente | Frost Byte, Purple Varie | 9 |
| 12. (*) | QN | MS/VG | (+) | (a), (b) | | |
| | Leaf: number of lobes | Feuille : nombre de lobes | Blatt: Anzahl Lappen | Hoja: n mero de l bulos | | |
| | absent or very few | absent ou tr s petit | fehlend oder sehr gering | ausente o muy bajo | Esthe, Nero di Toscana | 1 |
| | few | petit | gering | bajo | Cottagers | 2 |
| | medium | moyen | mittel | medio | Pentland Brig | 3 |
| | many |  lev  | hoch | alto | Darkibor | 4 |
| | very many | tr s  lev  | sehr hoch | muy alto | Lerchenzungen | 5 |
| 13. | QN | VG | (+) | (a), (d) | | |
| | Leaf: length of petiole wing | Feuille : longueur de l'aile du p tiole | Blatt: L nge des Blattstielfl gels | Hoja: longitud del ala del peciolo | | |
| | absent or very short | absente ou tr s courte | fehlend oder sehr kurz | ausente o muy corta | Harrier | 1 |
| | very short to short | tr s courte   courte | sehr kurz bis kurz | muy corta a corta | | 2 |
| | short | courte | kurz | corta | Coleor | 3 |
| | short to medium | courte   moyenne | kurz bis mittel | corta a media | | 4 |
| | medium | moyenne | mittel | media | Camaro | 5 |
| | medium to long | moyenne   longue | mittel bis lang | media a larga | | 6 |
| | long | longue | lang | larga | Gr ner Angeliter | 7 |
| | long to very long | longue   tr s longue | lang bis sehr lang | larga a muy larga | | 8 |
| | very long | tr s longue | sehr lang | muy larga | Pavla | 9 |
| 14. (*) | QN | MS/VG | (+) | (a), (b), (c) | | |
| | Leaf blade: length | Limbe : longueur | Blattspreite: L nge | Limbo: longitud | | |
| | very short | tr s courte | sehr kurz | muy corta | | 1 |
| | very short to short | tr s courte   courte | sehr kurz bis kurz | muy corta a corta | | 2 |
| | short | courte | kurz | corta | Redbor, Westlandse Herfst | 3 |
| | short to medium | courte   moyenne | kurz bis mittel | corta a media | | 4 |
| | medium | moyenne | mittel | media | Esthe | 5 |
| | medium to long | moyenne   longue | mittel bis lang | media a larga | | 6 |
| | long | longue | lang | larga | Nero di Toscana | 7 |
| | long to very long | longue   tr s longue | lang bis sehr lang | larga a muy larga | | 8 |
| | very long | tr s longue | sehr lang | muy larga | | 9 |

| | English | | fran ais | | deutsch | espa ol | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|----------------|--|---|--|---|----------------------------|---------|--|---------------|
| 15. (*) | QN | MS/VG | (+) | (a), (b), (c) | | | | |
| | Leaf blade: width | Limbe : largeur | Blattspreite: Breite | Limbo: anchura | | | | |
| | very narrow | tr s  troite | sehr schmal | muy estrecha | | | | 1 |
| | very narrow to narrow | tr s  troite    troite | sehr schmal bis schmal | muy estrecha a estrecha | Raven | | | 2 |
| | narrow |  troite | schmal | estrecha | Dwarf Green Curled, Redbor | | | 3 |
| | narrow to medium |  troite   moyenne | schmal bis mittel | estrecha a media | | | | 4 |
| | medium | moyenne | mittel | media | Cottagers, Esthe, Fizz | | | 5 |
| | medium to broad | moyenne   large | mittel bis breit | media a ancha | | | | 6 |
| | broad | large | breit | ancha | Beira | | | 7 |
| | broad to very broad | large   tr s large | breit bis sehr breit | ancha muy ancha | | | | 8 |
| | very broad | tr s large | sehr breit | muy ancha | | | | 9 |
| 16. (*) | QN | MS/VG | (+) | (a), (b), (c) | | | | |
| | Leaf blade: length/width ratio | Limbe : rapport longueur/largeur | Blattspreite: Verh ltnis L nge/Breite | Limbo: relaci n longitud/anchura | | | | |
| | very low | tr s bas | sehr klein | muy baja | | | | 1 |
| | very low to low | tr s bas   bas | sehr klein bis klein | muy baja a baja | Marriot | | | 2 |
| | low | bas | klein | baja | Beira | | | 3 |
| | low to medium | bas   moyen | klein bis mittel | baja a media | Dauro | | | 4 |
| | medium | moyen | mittel | media | Esthe, Redbor, Tintoreto | | | 5 |
| | medium to high | moyen    lev  | mittel bis gro  | media a alta | Fizz | | | 6 |
| | high |  lev  | gro  | alta | | | | 7 |
| | high to very high |  lev    tr s  lev  | gro  bis sehr gro  | alta a muy alta | Black Magic, Lerchenzungen | | | 8 |
| | very high | tr s  lev  | sehr gro  | muy alta | Nero di Toscana | | | 9 |
| 17. (*) | QN | MS/VG | (+) | (a), (b) | | | | |
| | Leaf blade: number of incisions | Limbe : nombre d'incisions | Blattspreite: Anzahl Einschnitte | Limbo: n mero de incisiones | | | | |
| | absent or very few | absent ou tr s petit | fehlend oder sehr gering | ausente o muy bajo | Esthe, Nero di Toscana | | | 1 |
| | very few to few | tr s petit   petit | sehr gering bis gering | muy bajo a bajo | | | | 2 |
| | few | petit | gering | bajo | Westlandse Herfst | | | 3 |
| | few to medium | petit   moyen | gering bis mittel | bajo a medio | | | | 4 |
| | medium | moyen | mittel | medio | Fizz | | | 5 |
| | medium to many | moyen    lev  | mittel bis hoch | medio a alto | | | | 6 |
| | many |  lev  | hoch | alto | | | | 7 |
| | many to very many |  lev    tr s  lev  | hoch bis sehr hoch | alto a muy alto | | | | 8 |
| | very many | tr s  lev  | sehr hoch | muy alto | | | | 9 |

| | English | | fran ais | | deutsch | espa ol | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|------------|--|-----------|---|----------------------|--|---|--|---------------|
| 18. | QN | VG | (+) | (a), (b) | | | | |
| | Leaf blade: depth of incisions | | Limbe : profondeur des incisions | | Blattspreite: Tiefe der Einschnitte | Limbo: profundidad de las incisiones | | |
| | absent or shallow | | absente ou peu profonde | | fehlend oder flach | ausente o poco profunda | Esthe, Nero di Toscana | 1 |
| | shallow to medium | | peu profonde   moyenne | | flach bis mittel | poco profunda a media | | 2 |
| | medium | | moyenne | | mittel | media | | 3 |
| | medium to deep | | moyenne   profonde | | mittel bis tief | media a profunda | | 4 |
| | deep | | profonde | | tief | profunda | Fizz | 5 |
| 19. | QN | VG | (+) | (a), (b), (c) | | | | |
| | Leaf blade: curvature of midrib | | Limbe : courbure de la nervure m diane | | Blattspreite: Biegung der Mittelrippe | Limbo: curvatura del nervio central | | |
| | incurved | | incurv e | | aufgebogen | incurvada | | 1 |
| | straight | | droite | | gerade | recta | Midnight Sun | 2 |
| | slightly recurved | | l g rement recourb e | | leicht gebogen | ligeramente recurvada | Esthe, Kadet, Lerchenzungen | 3 |
| | moderately recurved | | mod r ment recourb e | | m  ig gebogen | moderadamente recurvada | Westlandse Winter | 4 |
| | strongly recurved | | fortement recourb e | | stark gebogen | fuertemente recurvada | Westlandse Herfst | 5 |
| | very strongly recurved | | tr s fortement recourb e | | sehr stark gebogen | muy fuertemente recurvada | | 6 |
| 20. | QN | VG | (+) | (a), (b), (c) | | | | |
| | Leaf blade: blistering | | Limbe : cloq re | | Blattspreite: Blasigkeit | Limbo: ampollado | | |
| | absent or very weak | | absente ou tr s faible | | fehlend oder sehr gering | ausente o muy d bil | | 1 |
| | very weak to weak | | tr s faible   faible | | sehr gering bis gering | muy d bil a d bil | | 2 |
| | weak | | faible | | gering | d bil | Esthe | 3 |
| | weak to medium | | faible   moyenne | | gering bis mittel | d bil a medio | | 4 |
| | medium | | moyenne | | mittel | medio | Fizz | 5 |
| | medium to strong | | moyenne   forte | | mittel bis stark | medio a fuerte | | 6 |
| | strong | | forte | | stark | fuerte | Black Magic, Nero di Toscana | 7 |
| | strong to very strong | | forte   tr s forte | | stark bis sehr stark | fuerte a muy fuerte | | 8 |
| | very strong | | tr s forte | | sehr stark | muy fuerte | | 9 |

| | English | | fran ais | | deutsch | espa ol | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|------------|--|---|--|--|------------------------------|---------|--|---------------|
| 21. | QN | VG | (+) | (a), (b), (c) | | | | |
| | Leaf blade: folding in cross section | Limbe : pliure en section transversale | Blattspreite: Faltung im Querschnitt | Limbo: plegado en secci n transversal | | | | |
| | absent or very weak | absente ou tr s faible | fehlend oder sehr gering | ausente o muy d bil | | | | 1 |
| | weak | faible | gering | d bil | Rossignol, Tintoreto | | | 2 |
| | medium | moyenne | mittel | medio | Dwarf Green Curled, Redbor | | | 3 |
| | strong | forte | stark | fuerte | Lerchenzungen | | | 4 |
| | very strong | tr s forte | sehr stark | muy fuerte | | | | 5 |
| 22. | QN | VG | (+) | (a), (b), (c) | | | | |
| | Leaf blade: undulation | Limbe : ondulation | Blattspreite: Wellung | Limbo: ondulaci n | | | | |
| | absent or very weak | absente ou tr s faible | fehlend oder sehr gering | ausente o muy d bil | Black Magic, Nero di Toscana | | | 1 |
| | weak | faible | gering | d bil | Esthe | | | 2 |
| | medium | moyenne | mittel | media | Cottagers | | | 3 |
| | strong | forte | stark | fuerte | | | | 4 |
| | very strong | tr s forte | sehr stark | muy fuerte | | | | 5 |
| 23. | QN | VG | (+) | (a), (b), (c) | | | | |
| | Leaf blade: undulation of margin | Limbe : ondulation du bord | Blattspreite: Randwellung | Limbo: ondulaci n del margen | | | | |
| | absent or very weak | absente ou tr s faible | fehlend oder sehr gering | ausente o muy d bil | Cottagers, Esthe | | | 1 |
| | weak | faible | gering | d bil | Pentland Brig | | | 2 |
| | medium | moyenne | mittel | media | Redbor | | | 3 |
| | strong | forte | stark | fuerte | Dwarf Green Curled | | | 4 |
| | very strong | tr s forte | sehr stark | muy fuerte | Westlandse Herfst | | | 5 |
| 24. | QN | VG | (+) | (a), (b), (c) | | | | |
| | <u>Only for varieties with Leaf blade: undulation of margin: absent or very weak to weak:</u> Leaf blade: recurvature of margin | <u>Seulement pour les vari t s avec Limbe : ondulation du bord :</u> absente ou tr s faible : Limbe : recourbure du bord | <u>Nur f r Sorten mit Blattspreite: Randwellung: fehlend oder sehr gering bis gering:</u> Blattspreite: Randbiegung | <u>Solo variedades con Limbo: ondulaci n del margen: ausente o muy d bil a d bil:</u> Limbo: curvatura del margen | | | | |
| | absent or weak | absente ou faible | fehlend oder gering | ausente o d bil | Esthe, Midnight Sun | | | 1 |
| | medium | moyenne | mittel | media | Rossignol | | | 2 |
| | strong | forte | stark | fuerte | Black Magic, Nero di Toscana | | | 3 |

| | English | | fran ais | | deutsch | espa ol | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|------------|--------------------------|--|-----------------------------|--------------------------|---|---------|--|---------------|
| 25. | QN | MS/VG | (+) | (a), (b) | | | | |
| | Petiole: length | P t le : longueur | Blattstiel: L nge | Peciolo: longitud | | | | |
| | absent or very short | absente ou tr s courte | fehlend oder sehr kurz | ausente o muy corta | Nero di Toscana | | 1 | |
| | short | courte | kurz | corta | Rossignol, Tintoreto | | 2 | |
| | medium | moyenne | mittel | media | Halbhoher gr ner krauser, Redbor | | 3 | |
| | long | longue | lang | larga | | | 4 | |
| | very long | tr s longue | sehr lang | muy larga | Cottagers, Fizz | | 5 | |
| 26. | QN | MS/VG | (+) | (a), (b) | | | | |
| | Petiole: width | P t le : largeur | Blattstiel: Breite | Peciolo: anchura | | | | |
| | very narrow | tr s  troite | sehr schmal | muy estrecha | | | 1 | |
| | narrow |  troite | schmal | estrecha | Darkibor, Westlandse Herfst | | 2 | |
| | medium | moyenne | mittel | media | Cottagers, Esthe, Halbhoher gr ner krauser, Kobolt | | 3 | |
| | broad | large | breit | ancha | Marriot | | 4 | |
| | very broad | tr s large | sehr breit | muy ancha | Dauro | | 5 | |
| 27. | PQ | VG | (+) | (a) | | | | |
| | Young leaf: color | Jeune feuille : distribution des couleurs | Junges Blatt: Farbe | Hoja joven: color | | | | |
| | yellow green | vert-jaune | gelbgr n | verde amarillento | Esthe, Tintoreto | | 1 | |
| | green | vert | gr n | verde | Dwarf Green Curled | | 2 | |
| | grey green | vert-gris | graugr n | verde gris ceo | Lerchenzungen | | 3 | |
| | blue green | vert-bleu | blaugr n | verde azulado | Black Magic, Nero di Toscana | | 4 | |
| | red purple | pourpre-rouge | rotpurpurn | p rpura rojizo | Redbor, Rednex | | 5 | |
| 28. | QL | MS/VS | (+) | | | | | |
| | Male sterility | St rilit  m le | M nnliche Sterilit t | Androesterilidad | | | | |
| | absent | absente | fehlend | ausente | Esthe, Westlandse Herfst | | 1 | |
| | present | pr sente | vorhanden | presente | Winnetou | | 9 | |

8. Explanations on the Table of Characteristics

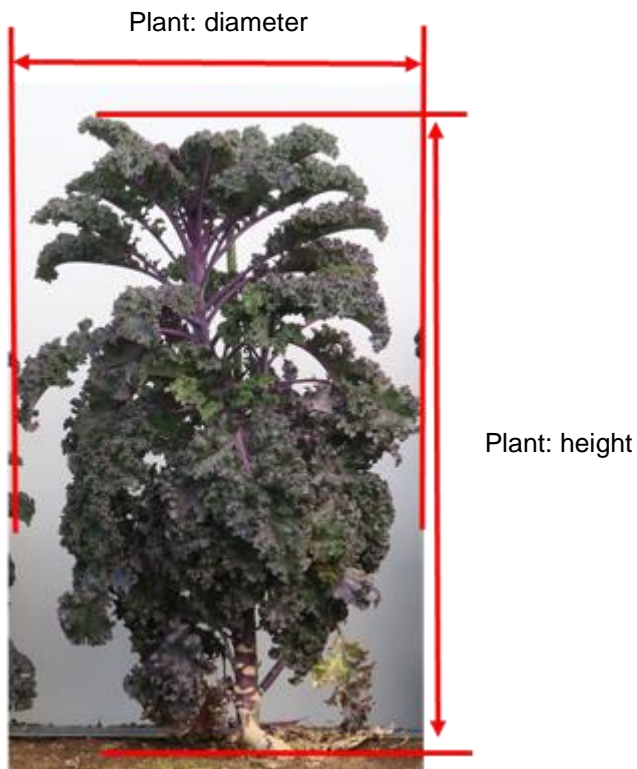
8.1 *Explanations covering several characteristics*

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

- (a) Observations should be made on plants 3 to 5 months after sowing.
- (b) Observations should be made on fully developed leaves.
- (c) Leaf blade does not include the independent lateral lobes at the lower half of the leaf.
- (d) Characteristics which should be observed on fodder types only (*Brassica oleracea* L. var. *viridis* L., *Brassica oleracea* L. var. *medullosa* Thell.).

8.2 *Explanations for individual characteristics*

Ad. 1: Plant: height

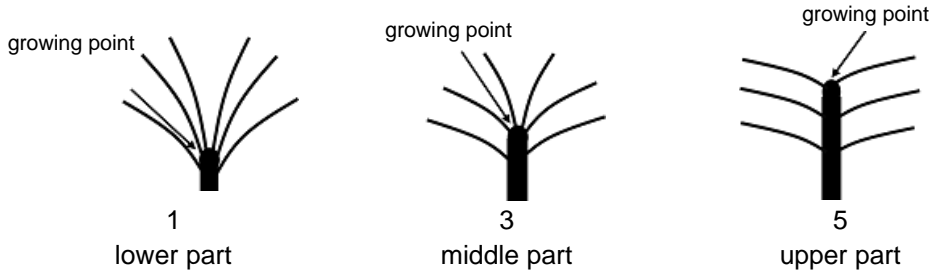


Ad. 2: Plant: diameter

See Ad. 1

Ad. 3: Plant: position of growing point

Observations of the position of the growing point should be made in relation to the top of the plant.

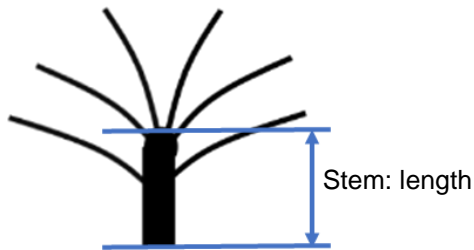


Ad. 4: Plant: number of leaves

Observations should be made on the number of leaves more than 10 cm in length.

Ad. 5: Stem: length

Observations should be made from ground level to the growing point.



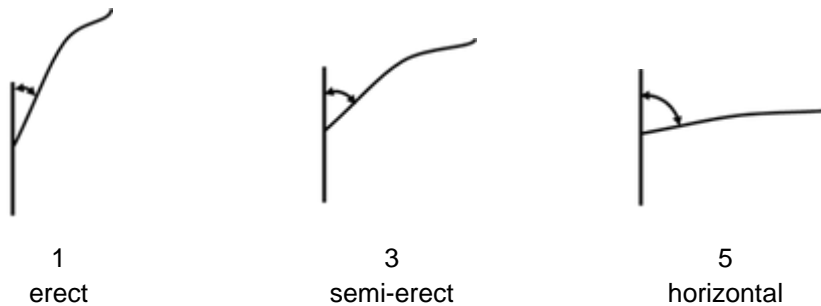
Ad. 6: Stem: diameter

Observations should be made at the widest point.

Ad. 7: Stem: tendency to branch

Should be assessed as number of branching nodes along the main stem. Observations should be made after bolting but before flowering.

Ad. 8: Leaf: attitude



Ad. 10: Leaf: intensity of anthocyanin coloration of main vein

Observations should be made on the lower side of the leaf.

Ad. 12: Leaf: number of lobes

Parts of the leaf are considered to be lobes if:

1. They have a minimum length of 1 cm and
2. When folded back to the midrib as shown in Figs 1 and 2, the folded tissue meets the midrib
3. Their length is at least equivalent to the width of the leaf petiole at their point of attachment

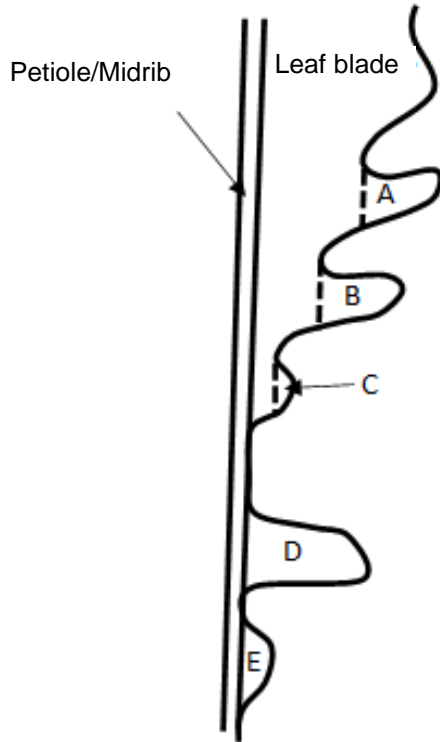


Figure 1

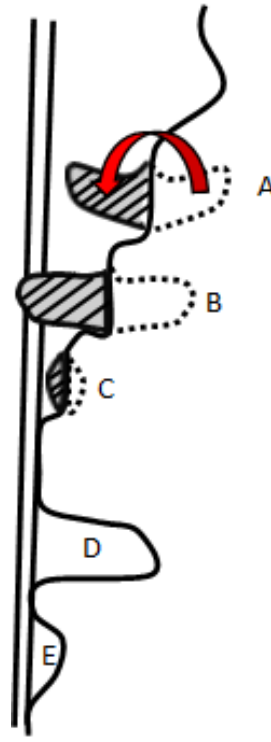


Figure 2

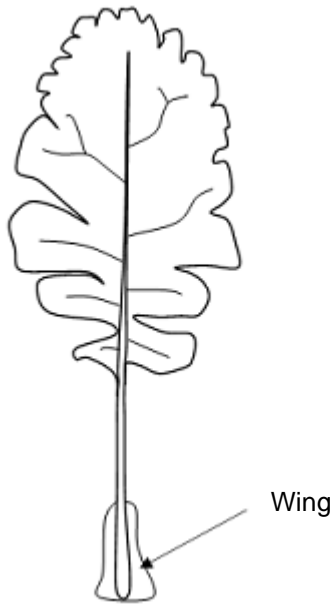
- A is not a lobe as it does not meet the midrib when folded
- B is a lobe as it meets the midrib when folded
- C is too small to be a lobe as it is less than 1 cm in length and does not meet the midrib when folded
- D is a lobe as the length is longer than the width of the leaf petiole at the point of attachment
- E is not a lobe as the length is shorter than the width of the leaf petiole at the point of attachment

Ad. 13: Leaf: length of petiole wing

Parts of the leaf are considered to be wings if:

1. They attach to the petiole at the base
2. Their length is at most equivalent to the width of the petiole at the point of attachment.

Where the leaf lamina is entire and continuous and is attached to the base of the petiole then the petiole wing is assessed as note 9.



1
absent or very
short



3
short



5
medium

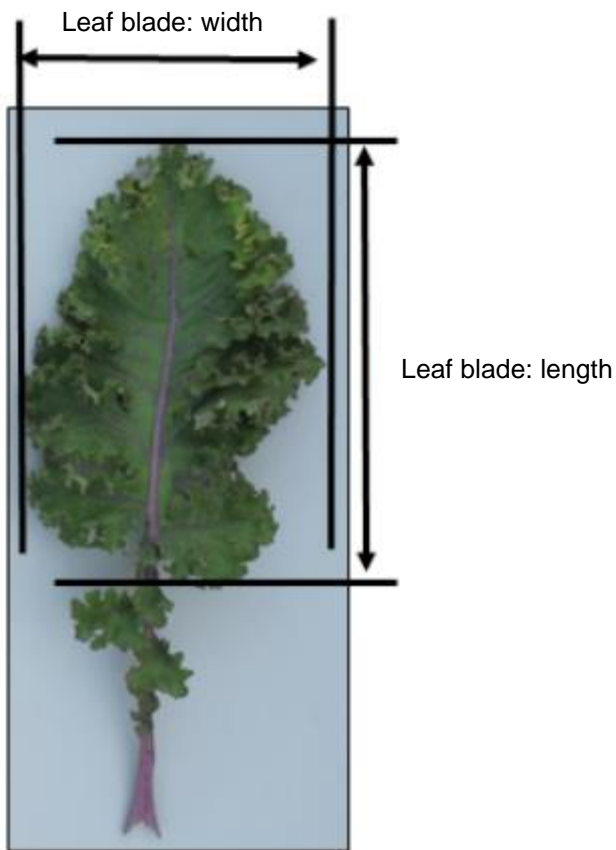


7
long



9
very long

Ad. 14: Leaf blade: length

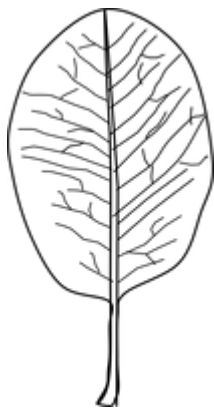


Ad. 15: Leaf blade: width

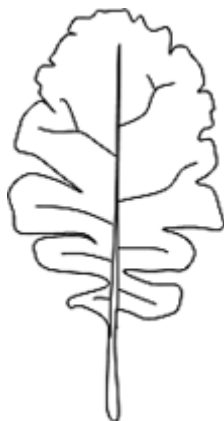
See Ad. 14

Ad. 17: Leaf blade: number of incisions

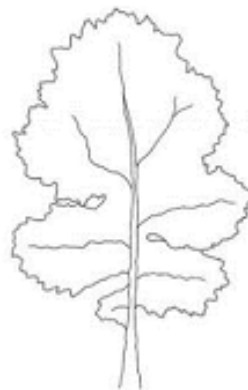
Observations should be made on upper third of the unfolded leaf blade.



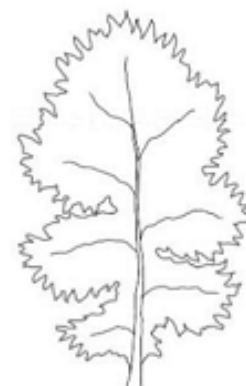
1
absent or very few



3
few



5
medium



7
many

Ad. 18: Leaf blade: depth of incisions

Observations should be made on upper third of the unfolded leaf blade.



1
absent or shallow



3
medium



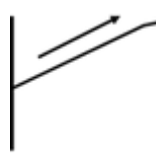
5
deep

Ad. 19: Leaf blade: curvature of midrib

Observations should be made on the overall shape, not one section of the leaf blade. For example, if almost all of the midrib is straight but the apical part of the midrib is strongly recurved then it should be assessed as straight.



1
incurved



2
straight



3
slightly recurved



4
moderately recurved



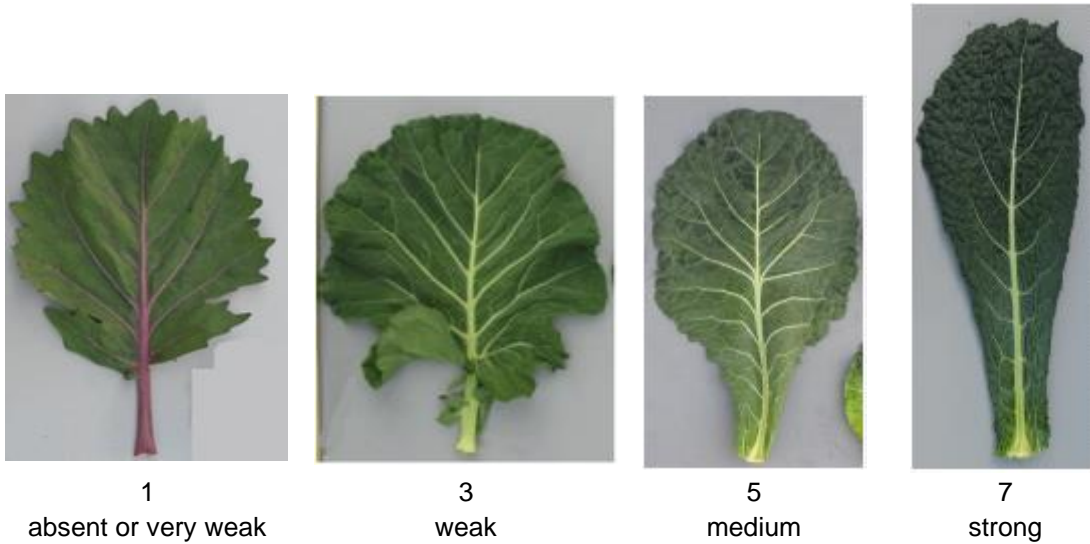
5
strongly recurved



6
very strongly recurved

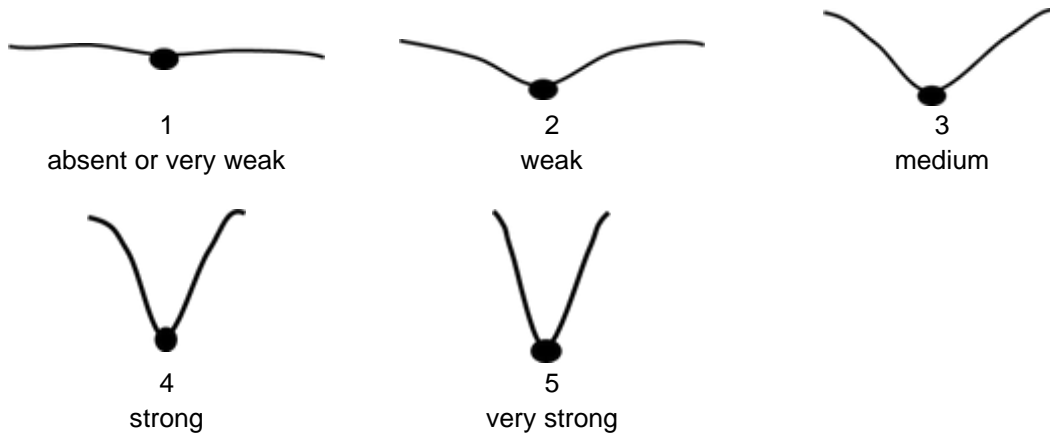
Ad. 20: Leaf blade: blistering

Blistering is the difference in height of the surface of the leaf between the veins.



Ad. 21: Leaf blade: folding in cross section

Observations should be made at the middle third of the leaf blade.



Ad. 22: Leaf blade: undulation

Observations should be made on the undulation of the whole leaf.



1
absent or very weak



2
weak



3
medium



4
strong

Ad. 23: Leaf blade: undulation of margin

Observations should be made on the small undulations of the margin of the leaf blade.



1
absent or very weak



2
weak



3
medium



4
strong



5
very strong

Ad. 24: Only for varieties with Leaf blade: undulation of margin: absent or very weak to weak: Leaf blade: recurvature of margin

Observations should be made at the middle third of the leaf blade.



1
absent or weak

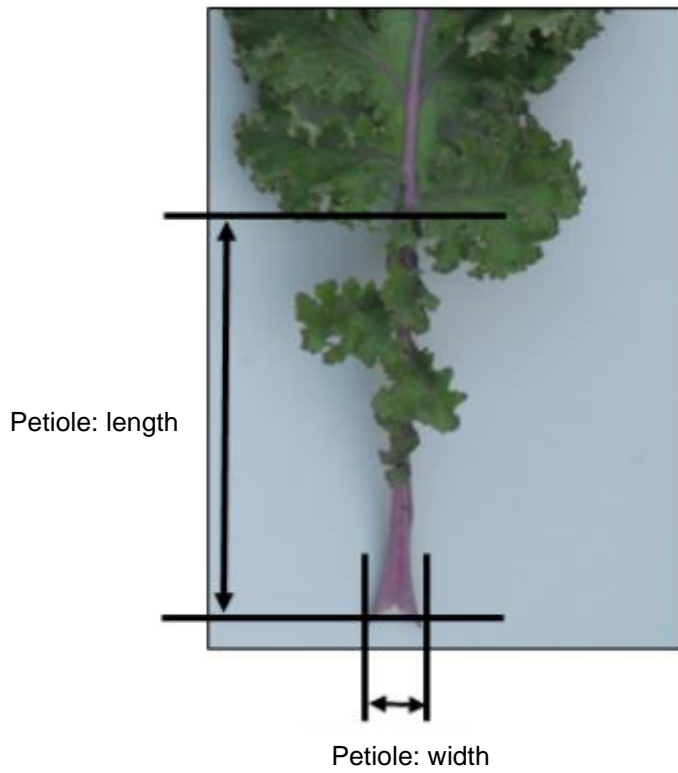


2
medium



3
strong

Ad. 25: Petiole: length



Ad. 26: Petiole: width

See Ad. 25

Observations should be made at the base of petiole.

Ad. 27: Young leaf: color

Observations should be made on immature leaves at the apex of the plant.

Ad. 28: Male sterility

To be tested in a field trial and/or in a DNA marker test¹.

In the case of a field trial, the type of observation is VS. In the case of a DNA marker test, the type of observation is MS.

Field trial:

Check presence of pollen on stamen: if pollen on stamen is present then male sterility is absent; if pollen on stamen is absent then male sterility is present.



male fertile (pollen present)



male sterile (pollen absent)

DNA marker test:

If the CMS marker is not present, the variety is expected to have male fertile flowers. In cases where the CMS marker is present, the variety is expected to have male sterile flowers.

In case the DNA marker test result does not confirm the declaration in the TQ, a field trial should be performed to observe whether the variety has male fertile or male sterile flowers due to another mechanism.

¹ The description of the method to test male sterility for *Brassica* (CMS marker) is covered by a trade secret. The owner of the trade secret, Syngenta Seeds B.V., has given its consent for the use of the CMS marker solely for the purposes of examination of Distinctness, Uniformity and Stability (DUS) and for the development of variety descriptions by UPOV and authorities of UPOV members. Syngenta Seeds B.V. declares that neither UPOV, nor authorities of UPOV members that use the CMS marker for the above purposes will be held accountable for possible (mis)use of the CMS marker by third parties. Please contact Naktuinbouw, Netherlands, to obtain the method and information on the CMS marker for the purposes mentioned above.

9. Literature

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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 | | |
| 1.1.1 | Botanical name | <input type="text" value="Brassica oleracea L. var. costata DC."/> [] |
| 1.1.2 | Common name | <input type="text" value="Bedford cabbage, Braganza, Portugese cole, Portuguese kale, Seakale cabbage, Tronchuda cabbage, Tronchuda kale"/> |
| 1.2.1 | Botanical name | <input type="text" value="Brassica oleracea L. var. medullosa Thell."/> [] |
| 1.2.2 | Common name | <input type="text" value="Marrow-stem kale"/> |
| 1.3.1 | Botanical name | <input type="text" value="Brassica oleracea L. var. sabellica L."/> [] |
| 1.3.2 | Common name | <input type="text" value="Borecole, Curly kale, Dwarf Siberian kale, Kitchen kale, Scotch kale"/> |
| 1.4.1 | Botanical name | <input type="text" value="Brassica oleracea L. var. viridis L."/> [] |
| 1.4.2 | Common name | <input type="text" value="Collards, Cow cabbage, Fodder kale, Kale, Spring-heading cabbage, Tall kale, Tree kale"/> |
| 1.5.1 | Botanical name | <input type="text" value="Brassica oleracea L. var. palmifolia DC."/> [] |
| 1.5.2 | Common name | <input type="text" value="Giant Jersey kale, Jersey kale, Palm kale, Palm-tree kale, Tree kale"/> |

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| | | |
|----|---------------------------------------|----------------------|
| 2. | Applicant | |
| | Name | <input type="text"/> |
| | Address | <input type="text"/> |
| | Telephone No. | <input type="text"/> |
| | Fax No. | <input type="text"/> |
| | E-mail address | <input type="text"/> |
| | Breeder (if different from applicant) | <input type="text"/> |

| | | |
|----|---|----------------------|
| 3. | Proposed denomination and breeder's reference | |
| | Proposed denomination (if available) | <input type="text"/> |
| | Breeder's reference | <input type="text"/> |

| | | |
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#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 []

4.1.2 Mutation []
(please state parent variety)

4.1.3 Discovery and development []
(please state where and when discovered and how developed)

4.1.4 Other []
(Please provide details)

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

- (a) Cross-pollination []
 - (i) Population []
 - (i) Single hybrid []
- (b) Hybrid []
- (c) Other (please provide details) []

4.2.2 Vegetative propagation

- (a) Cuttings []
- (b) Other (state method) []

4.2.3 Other []
(Please provide details)

| | | |
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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 Plant: height (1) | | |
| very short | | 1 [] |
| very short to short | | 2 [] |
| short | Lage Moskrul, Starbor | 3 [] |
| short to medium | | 4 [] |
| medium | Darkibor, Marriot, Rossignol | 5 [] |
| medium to tall | | 6 [] |
| tall | Esthe, Fizz, Nero di Toscana, Redbor | 7 [] |
| tall to very tall | | 8 [] |
| very tall | Ostfriesische Palme | 9 [] |
| 5.2 Plant: position of growing point (3) | | |
| lower part | Esthe, Fizz | 1 [] |
| lower to middle part | Halbhoher grüner krauser | 2 [] |
| middle part | Black Magic, Kobolt | 3 [] |
| middle to upper part | | 4 [] |
| upper part | Dwarf Green Curled, Kadet, Westlandse Herfst | 5 [] |
| 5.3 Leaf: attitude (8) | | |
| erect | Esthe, Nero di Toscana | 1 [] |
| erect to semi-erect | | 2 [] |
| semi-erect | Cottagers, Redbor | 3 [] |
| semi-erect to horizontal | | 4 [] |
| horizontal | Marriot | 5 [] |
| 5.4 Leaf: color (9) | | |
| light green | Tintoreto | 1 [] |
| medium green | Dwarf Green Curled, Esthe | 2 [] |
| dark green | Kapitan | 3 [] |
| grey green | Fizz | 4 [] |
| blue green | Black Magic, Nero di Toscana | 5 [] |
| reddish green | Redbor | 6 [] |
| purple | Rednex | 7 [] |

| | | |
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| Characteristics | Example Varieties | Note |
|--|----------------------------|-------|
| 5.5 Leaf: variegation (11) | | |
| absent | Esthe | 1 [] |
| present | Frost Byte, Purple Varie | 9 [] |
| 5.6 Leaf blade: length (14) | | |
| very short | | 1 [] |
| very short to short | | 2 [] |
| short | Redbor, Westlandse Herfst | 3 [] |
| short to medium | | 4 [] |
| medium | Esthe | 5 [] |
| medium to long | | 6 [] |
| long | Nero di Toscana | 7 [] |
| long to very long | | 8 [] |
| very long | | 9 [] |
| 5.7 Leaf blade: width (15) | | |
| very narrow | | 1 [] |
| very narrow to narrow | Raven | 2 [] |
| narrow | Dwarf Green Curled, Redbor | 3 [] |
| narrow to medium | | 4 [] |
| medium | Cottagers, Esthe, Fizz | 5 [] |
| medium to broad | | 6 [] |
| broad | Beira | 7 [] |
| broad to very broad | | 8 [] |
| very broad | | 9 [] |
| 5.8 Leaf blade: length/width ratio (16) | | |
| very low | | 1 [] |
| very low to low | Marriot | 2 [] |
| low | Beira | 3 [] |
| low to medium | Dauro | 4 [] |
| medium | Esthe, Redbor, Tintoreto | 5 [] |
| medium to high | Fizz | 6 [] |
| high | | 7 [] |
| high to very high | Black Magic, Lerchenzungen | 8 [] |
| very high | Nero di Toscana | 9 [] |

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| Characteristics | Example Varieties | Note |
|---|--------------------------|-------|
| 5.9 Leaf blade: depth of incisions (18) | | |
| absent or shallow | Esthe, Nero di Toscana | 1 [] |
| shallow to medium | | 2 [] |
| medium | | 3 [] |
| medium to deep | | 4 [] |
| deep | Fizz | 5 [] |
| 5.10 Leaf blade: undulation of margin (23) | | |
| absent or very weak | Cottagers, Esthe | 1 [] |
| weak | Pentland Brig | 2 [] |
| medium | Redbor | 3 [] |
| strong | Dwarf Green Curled | 4 [] |
| very strong | Westlandse Herfst | 5 [] |
| 5.11 Male sterility (28) | | |
| absent | Esthe, Westlandse Herfst | 1 [] |
| present | Winnetou | 9 [] |

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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 |
|---|---|--|--|
| <i>Example</i> | <i>Stem: length</i> | <i>medium</i> | <i>short</i> |
| | | | |
| | | | |
| | | | |

Comments:

| | | |
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#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

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

| | | |
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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.

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]