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PLANTS

UNION INTERNATIONALE
POUR LA PROTECTION
DES OBTENTIONS
VÉGÉTALES

INTERNATIONALER
VERBAND ZUM SCHUTZ
VON PFLANZEN-
ZÜCHTUNGEN

UNIÓN INTERNACIONAL
PARA LA PROTECCIÓN
DE LAS OBTENCIONES
VEGETALES

DRAFT

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

CELERY
Apium graveolens L. var.
dulce (Mill.) Pers.

These Guidelines should be read in conjunction with document TG/1/2, which contains explanatory notes on the general principles on which the Guidelines have been established.

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I. Subject of these Guidelines

These Guidelines apply to all varieties of *Apium graveolens* L. var. *dulce* (Mill.) Pers.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the seed required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities are complied with. As a minimum, for each year of the test the following quantity of seed is recommended:

6 g.

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

2. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

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

2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. Each test should include a total of 60 plants which should be divided between two or more replicates. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

IV. Methods and Observations

1. Unless otherwise indicated, all observations determined by measurement, weighing or counting should be made on 30 plants or parts taken from each of 30 plants.

2. For the assessment of uniformity of open-pollinated and hybrid varieties relative uniformity standards should be applied.

3. All observations on the plant and the leaf should be made on fully developed plants before harvest maturity.

V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:

Petiole: anthocyanin coloration (characteristic 14)
Petiole: self blanching (characteristic 20)

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.
2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

3. Legend:

(*) Characteristics that should be used on all varieties in every growing period over which the examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

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

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

| English | français | deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|---|--|-------------------------------------|---|--|---------------|
| 1. Plant: height | Plante: hauteur | Pflanze: Höhe | Planta: altura | | |
| (*) | | | | | |
| very short | très basse | sehr niedrig | muy baja | Afina | 1 |
| short | basse | niedrig | baja | Claudius | 3 |
| medium | moyenne | mittel | media | Green Sleeves | 5 |
| tall | haute | hoch | alta | Martine | 7 |
| very tall | très haute | sehr hoch | muy alta | Giant Red | 9 |
| 2. Plant: number of lateral shoots | Plante: nombre de tiges latérales | Pflanze: Anzahl Seitentriebe | Planta: número de tallos laterales | | |
| absent of very few | nul ou très petit | fehlend oder sehr gering | ausente o muy bajo | Ideal | 1 |
| few | petit | gering | bajo | Summit | 3 |
| medium | moyen | mittel | medio | Groene Pascal | 5 |
| many | grand | groß | alto | Del Valdarno | 7 |
| 3. Foliage: attitude | Feuillage: port | Laub: Haltung | Follaje: porte | | |
| (*) | | | | | |
| erect | dressé | aufrecht | erecto | Autumn Gold | 1 |
| erect to semi-erect | dressé à demi-dressé | aufrecht bis halbaufrecht | erecto a semierecto | Green Sleeves | 2 |
| semi-erect | demi-dressé | halbaufrecht | semierecto | Shamrock | 3 |
| semi-erect to horizontal | demi-dressé à horizontal | halbaufrecht bis waagerecht | semierecto a horizontal | Amsterdam Donkergroene | 4 |
| horizontal | horizontal | waagerecht | horizontal | Martine | 5 |

| English | français | deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|--|--|--|---|--|---------------|
| 4. Foliage: number of leaves | Feuillage: nombre de feuilles | Laub: Anzahl Blätter | Follaje: número de hojas | | |
| few | petit | gering | bajo | Gigante di Romagna | 3 |
| medium | moyen | mittel | medio | Green Sleeves | 5 |
| many | grand | groß | alto | Ideal | 7 |
| 5. Foliage: intensity of green color (excluding petioles) (*) | Feuillage: intensité de la couleur verte (à l'exclusion des pétioles) | Laub: Intensität der Grünfärbung (ohne Blattstiele) | Follaje: intensidad del color verde (excluidos los pecíolos) | | |
| very light | très claire | sehr hell | muy claro | Ivory Tower | 1 |
| light | claire | hell | claro | Victoria | 3 |
| medium | moyenne | mittel | medio | Multipak | 5 |
| dark | foncée | dunkel | oscuro | Mammoth White; Giant Red | 7 |
| 6. Foliage: glossiness | Feuillage: brillance | Laub: Glanz | Follaje: brillo | | |
| weak | faible | gering | débil | Ramon | 3 |
| medium | moyenne | mittel | medio | Lino | 5 |
| strong | forte | stark | fuerte | Golden Spartan | 7 |
| 7. Foliage: blistering | Feuillage: cloûre | Laub: Blasigkeit | Follaje: abullonado | | |
| absent or very weak | nulle ou très faible | fehlend oder sehr gering | ausente o muy débil | Amsterdam Donkergroene | 1 |
| weak | faible | gering | débil | Florida 683; Giant Red | 3 |
| medium | moyenne | mittel | medio | Lino | 5 |
| strong | forte | stark | fuerte | Groene Pascal | 7 |

| English | français | deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|--|--|--|---|--|---------------|
| 8. Leaf: length (including petiole) (*) (+) | Feuille: longueur (pétiole compris) | Blatt: Länge (einschließlich Blattstiel) | Hoja: longitud (incluido el pecíolo) | | |
| short | courte | kurz | corta | Golden Spartan | 3 |
| medium | moyenne | mittel | media | Celebrity | 5 |
| long | longue | lang | larga | Martine | 7 |
| 9. Leaf: distance between 1st and 2nd leaflet pairs (*) (+) | Feuille: distance entre la 1^{re} et la 2^e paire de folioles | Blatt: Abstand zwischen 1. und 2. Blattfiederpaar | Hoja: distancia entre el 1er y 2do par de folíolos | | |
| short | courte | kurz | corta | Claudius, Early Spring | 3 |
| medium | moyenne | mittel | media | Greensleeves, Octavius | 5 |
| long | longue | lang | larga | Florida 683, Groene Pascal | 7 |
| 10. Leaf: size of the terminal leaflet (*) (+) | Feuille: taille de la foliole terminale | Blatt: Größe des Endfiederblattes | Hoja: tamaño del foliolo superior | | |
| small | petite | klein | pequeño | Giant Red, Stardust | 3 |
| medium | moyenne | mittel | medio | Shamrock | 5 |
| large | grande | groß | grande | Early Spring | 7 |
| 11. Leaflet: shape of tips on margin (*) (+) | Foliole: forme des pointes du bord | Blattfieder: Form der Spitzen des Randes | Folíolo: forma de las puntas del borde | | |
| acute | pointues | zugespitzt | agudas | Plein blanc doré Barbier | 1 |
| rounded | arrondies | abgerundet | redondeadas | D'Elne | 2 |
| 12. Leaflet: density of margin incisions (*) (+) | Foliole: densité des incisions du bord | Blattfieder: Dichte der Randeinschnitte | Folíolo: densidad de las incisiones del borde | | |
| sparse | lâche | locker | laxa | Multipak | 3 |
| medium | moyenne | mittel | media | Del Valdarno | 5 |
| dense | dense | dicht | densa | Golden Spartan | 7 |

| English | français | deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|--|--|--|---|--|---------------|
| 13. Leaflet: spacing of lobes (*) (+) | Foliolle: espacement entre les lobes | Blattfieder: Abstand zwischen den Lappen | Foliolo: espaciado entre los lóbulos | | |
| not touching | ne se touchent pas | sich nicht berührend | sin tocarse | Golden Spartan, Uta | 3 |
| touching | se touchent | sich berührend | tocándose | Early Spring, Victoria | 5 2 |
| overlapping | se chevauchent | überlappend | solapados | Claudius | 7 |
| 14. Petiole: anthocyanin coloration (*) | Pétiolle: pigmentation anthocyanique | Blattstiel: Anthocyanfärbung | Peciolo: pigmentación antociánica | | |
| absent | absente | fehlend | ausente | Golden Spartan | 1 |
| present | présente | vorhanden | presente | Giant Red | 9 |
| 15. Petiole: intensity of anthocyanin | Pétiolle: intensité de l'anthocyanine | Blattstiel: Intensität der Anthocyanfärbung | Peciolo: intensidad de la pigmentación antociánica | | |
| weak | faible | gering | débil | Giant Pink | 3 |
| medium | moyenne | mittel | media | Ideal | 5 |
| strong | forte | stark | fuerte | Giant Red | 7 |
| 16. Petiole: length (*) (+) | Pétiolle: longueur | Blattstiel: Länge | Peciolo: longitud | | |
| short | court | kurz | corto | Oscar | 3 |
| medium | moyen | mittel | medio | Groene Pascal | 5 |
| long | long | lang | largo | Giant Red | 7 |
| 17. Petiole: width (+) | Pétiolle: largeur | Blattstiel: Breite | Peciolo: anchura | | |
| narrow | étroit | schmal | estrecho | Ideal | 3 |
| medium | moyen | mittel | medio | Green Sleeves | 5 |
| broad | large | breit | ancho | Top Seller | 7 |

| English | français | deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
|--|---|---|--|--|---------------|
| 18. Petiole: prominence of ribs | Pétiole: relief des côtes | Blattstiel: Ausprägung der Rippen | Pecíolo: prominencia del acostillado | | |
| absent or very weak | nul ou très faible | fehlend oder sehr gering | ausente o muy débil | Plein blanc Lepage | 1 |
| weak | faible | gering | débil | Golden Self-Blanching | 3 |
| medium | moyen | mittel | medio | Victoria | 5 |
| strong | fort | stark | fuerte | Claudius | 7 |
| 19. Petiole: profile of inner side in cross section (+) | Pétiole: profil de la face interne en section transversale | Blattstiel: Profil der Innenseite im Querschnitt | Pecíolo: perfil de la cara interna en sección transversal | | |
| straight | droit | gerade | recta | D'Elne | 1 |
| slightly concave | légèrement concave | leicht konkav | ligeramente cóncava | Groene Pascal | 2 |
| strongly concave | fortement concave | stark konkav | fuertemente cóncava | Green Sleeves | 3 |
| 20. Petiole: self-blanching (*) | Pétiole: blanchiment naturel | Blattstiel: Selbstbleichung | Pecíolo: autoblanqueado | | |
| absent | absent | fehlend | ausente | Groene Pascal | 1 |
| present | présent | vorhanden | presente | Autumn Gold | 2 |
| 21. Petiole: intensity of green color (not earthed up) | Pétiole: intensité de la couleur verte (non butté) | Blattstiel: Intensität der Grünfärbung (nicht angehäufelt) | Pecíolo: intensidad del color verde (sin acollar) | | |
| light | faible | hell | claro | Autumn Gold | 3 |
| medium | moyenne | mittel | medio | Green Sleeves | 5 |
| dark | forte | dunkel | oscuro | Giant Red | 7 |

VIII. Explanations on the Table of Characteristics

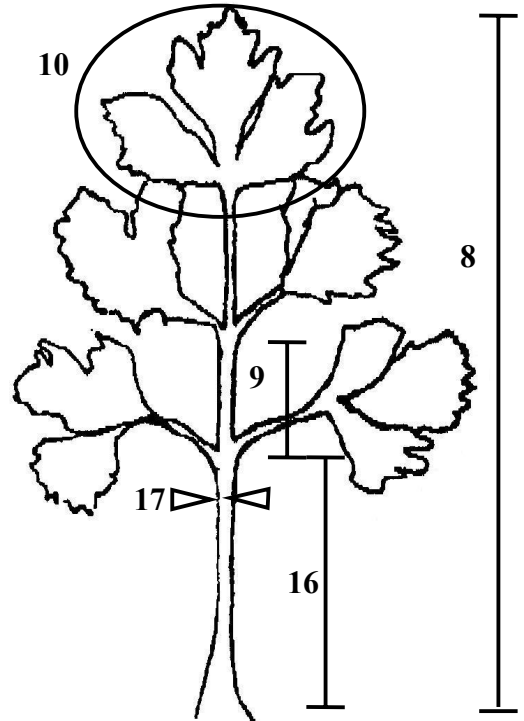
Ad. 8, 9, 10, 16, 17

Leaf: length (including petiole) (8)

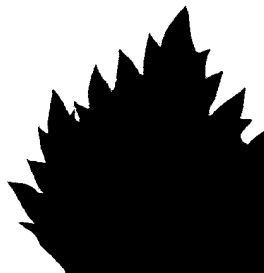
Leaf: distance between 1st and 2nd pair of leaflets (9)

Leaf: size of the terminal leaflet (10)

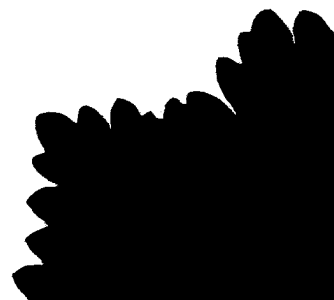
Petiole: length (16)
width (17)



Ad. 11: Leaflet: shape of tips on margin

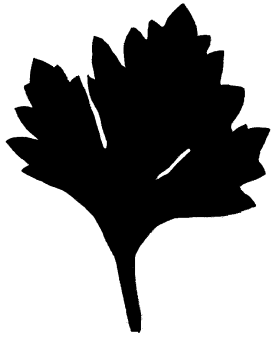


1
acute

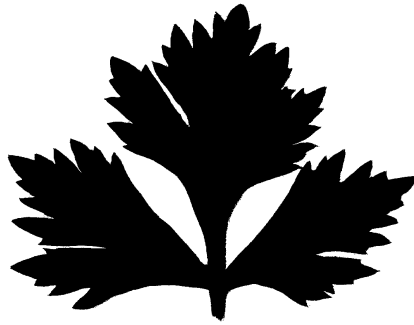


2
rounded

Ad. 12: Leaflet: density of margin incisions



3
sparse



5
medium

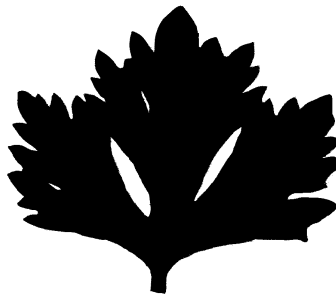


7
dense

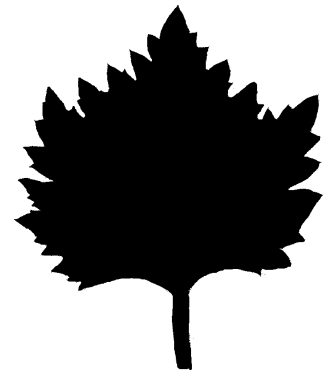
Ad. 13: Leaflet: spacing of lobes



1
not touching



2
touching



3
overlapping

Ad. 19: Petiole: profile of inner side in cross section

Drawing to be inserted.

IX. Literature

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KAMPE, K.; BASSE, H.; GLASCHKE, B. und SCHREIBER, F. (1956): Sellerie in: Gemüsesorten, II. Teil (Kohl-, Blatt- und Wurzelgemüse), 1. Auflage, Paul Parey Verlag, Berlin – Hamburg, 115-119.

QUIROS, C.F. (1993) Celery – *Apium graveolens* L. In Kalloo, G. and Bergh, B.O. (eds) Genetic Improvement of Vegetable Crops. Pergamon Press, Oxford. 523-534.

RAMIN, A.A., and ATHERTON, J.G. (1991). Manipulation of bolting and flowering in Celery (*Apium graveolens* var. *dulce*). 1. Effects of chilling during germination and seed development. Journal of Horticultural Science. 66 (4) 435-441.

RAMIN, A.A., and ATHERTON, J.G. (1991). Manipulation of bolting and flowering in Celery (*Apium graveolens* var. *dulce*). III. Effects of photoperiod and irradiance. Journal of Horticultural Science. 69 (5) 861-868.

RUBATKSKY, V.E., QUIROS, C.F. and SIMON, P.W. (1999): Carrots and related vegetable *Umbelliferae*. Crop Production Science in Horticulture Series; 10. CABI Publishing. Wallingford & New York. ISBN 0 85199 1297.

IX. Technical Questionnaire

| | |
|---|---|
| | Reference Number (not to be filled in by the applicant) |
| | |
| <p>TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights</p> | |
| 1.1 Species | <p><i>Apium graveolens</i> L. var. <i>dulce</i> (Mill.) Pers. CELERY</p> |
| 2. Applicant (Name and address) | |
| 3. Proposed denomination or breeder's reference | |

4. Information on origin, maintenance and reproduction of the variety

4.1 Method of maintenance and reproduction

- (i) hybrid []
- (ii) open-pollinated []
- (iii) other (please, indicate) []

4.2 Other information

| 5. Characteristics of the variety to be given (the number in brackets refers to the corresponding characteristics in the Test Guidelines; please mark the state of expression which best corresponds) | | | |
|---|--|--------------------------|-------|
| Characteristics | | Example Varieties | Note |
| 5.1 Plant: height (1) | | | |
| very short | | Afina | 1 [] |
| short | | Claudius | 3 [] |
| medium | | Green Sleeves | 5 [] |
| tall | | Martine | 7 [] |
| very tall | | Giant Red | 9 [] |
| 5.2 Foliage: attitude (3) | | | |
| erect | | Autumn Gold | 1 [] |
| erect to semi-erect | | Green Sleeves | 2 [] |
| semi-erect | | Shamrock | 3 [] |
| semi-erect to horizontal | | Amsterdam Donkergroene | 4 [] |
| horizontal | | Martine | 5 [] |
| 5.3 Leaf blade: size of the terminal leaflet (10) | | | |
| small | | Giant Red, Stardust | 3 [] |
| medium | | Shamrock | 5 [] |
| large | | Early Spring | 7 [] |
| 5.4 Leaflet: shape of tips on margin (11) | | | |
| acute | | Plein blanc doré Barbier | 1 [] |
| rounded | | D'Elne | 2 [] |
| 5.5 Leaflet: spacing of lobes (13) | | | |
| not touching | | Golden Spartan, Uta | 3 [] |
| touching | | Early Spring, Victoria | 5 [] |
| overlapping | | Claudius | 7 [] |

| Characteristics | Example Varieties | Note | |
|---|--|--|--|
| 5.6 Petiole: anthocyanin coloration (14) | | | |
| absent | Golden Spartan | 1 [] | |
| present | Giant Red | 9 [] | |
| 5.7 Petiole: self-blanching (20) | | | |
| absent | Groene Pascal | 1 [] | |
| present | Autumn Gold | 2 [] | |
| 5.8 Petiole: intensity of green color (not earthed up) (21) | | | |
| light | Autumn Gold | 3 [] | |
| medium | Green Sleeves | 5 [] | |
| dark | Giant Red | 7 [] | |
| 6. Similar varieties and differences from these varieties | | | |
| Denomination of similar variety | Characteristic in which the similar variety is different ^{o)} | State of expression of similar variety | State of expression of candidate variety |
| | | | |
| ^{o)} In the case of identical states of expressions of both varieties, please indicate the size of the difference. | | | |

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

7.3 Intended main use

(i) leaves (cuttings) []

(ii) petioles []

7.4 Other information

A representative photocopy of one or more terminal leaflets in original size of the variety should be included in 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 that question is yes, please attach a copy of such an authorization.

[End of document]