



TG/82/4

INTERNATIONAL UNION  
FOR THE PROTECTION  
OF NEW VARIETIES OF  
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

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

**CELERY, STALK CELERY**  
*Apium graveolens* L. var. *dulce* (Mill.) Pers.

**CUTTING CELERY, LEAF CELERY,  
SMALLAGE**  
*Apium graveolens* L. var. *secalinum* Alef.

**GENEVA**  
**2002**

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**ORIGINAL:** English

**DATE:** 2002-04-17

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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. (Celery/Stalk Celery) and *Apium graveolens* L. var. *secalinum* Alef. (Cutting Celery, Leaf Celery, Smallage).

## 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:

6g.

2. 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.

3. 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 satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination. 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 be designed to result in a total of at least 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 part taken from each of 30 plants.

2. The assessment of uniformity for cross-pollinated varieties should be according to the recommendations in the General Introduction . The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations in the General Introduction.
3. The petioles of plants grown should not be covered with additional soil (“earthed up”).
4. 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 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:
  - (a) Petiole: anthocyanin coloration (characteristic 14);
  - (b) 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/Tablă de caractere

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>1. Plant:height</b>	<b>Plante:hauteur</b>	<b>Pflanze:Höhe</b>	<b>Planta:altura</b>		
(*)					
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
<b>2. Plant:number of lateral shoots</b>	<b>Plante:nombre de tiges latérales</b>	<b>Pflanze:Anzahl Seitentriebe</b>	<b>Planta:número de tallos laterales</b>		
absent or 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
<b>3. Foliage:attitude</b>	<b>Feuillage:port</b>	<b>Laub:Haltung</b>	<b>Follaje:porte</b>		
(*)					
erect	dressé	aufrecht	erecto	Autumn Gold	1
erect to semi-erect	dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semi-erecto	Green Sleeves	2
semi-erect	demi-dressé	halbaufrecht	semi-erecto	Shamrock	3
semi-erect to horizontal	demi-dressé à horizontal	halbaufrecht bis waagrecht	semi-erecto a horizontal	Amsterdam Donker groene	4
horizontal	horizontal	waagrecht	horizontal	Martine	5
<b>4. Foliage:number of leaves</b>	<b>Feuillage:nombre de feuilles</b>	<b>Laub:Anzahl Blätter</b>	<b>Follaje:número de hojas</b>		
few	petit	gering	bajo	Giganted i Romagna	3
medium	moyen	mittel	medio	Green Sleeves	5
many	grand	groß	alto	Ideal	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>5. Foliage: intensity of greencolor (excluding petioles)</b> (* )	<b>Feuillage: intensité de la couleur verte (à l'exclusion des pétioles)</b>	<b>Laub: Intensität der Grünfärbung (ohne Blattstiele)</b>	<b>Follaje: intensidad del color verde (excluidos los pecíolos)</b>		
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
<b>6. Foliage: glossiness</b>	<b>Feuillage: brillance</b>	<b>Laub: Glanz</b>	<b>Follaje: brillo</b>		
weak	faible	gering	débil	Ramon	3
medium	moyenne	mittel	medio	Lino	5
strong	forte	stark	fuerte	Golden Spartan	7
<b>7. Foliage: blistering</b>	<b>Feuillage: cloûre</b>	<b>Laub: Blasigkeit</b>	<b>Follaje: abullonado</b>		
absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Amsterdam Donker groene	1
weak	faible	gering	débil	Florida 683; Giant Red	3
medium	moyenne	mittel	medio	Lino	5
strong	forte	stark	fuerte	Groene Pascal	7
<b>8. Leaf: length (including petiole)</b> (* ) (+)	<b>Feuille: longueur (pétiole compris)</b>	<b>Blatt: Länge (einschließlich Blattstiel)</b>	<b>Hoja: longitud (incluido el pecíolo)</b>		
short	courte	kurz	corta	Golden Spartan	3
medium	moyenne	mittel	media	Celebrity	5
long	longue	lang	larga	Martine	7
<b>9. Leaf: distance between 1<sup>st</sup> and 2<sup>nd</sup> leaflet pairs</b> (* ) (+)	<b>Feuille: distance entre la 1<sup>re</sup> et la 2<sup>e</sup> paire de folioles</b>	<b>Blatt: Abstand zwischen 1. und 2. Blattpiederpaar</b>	<b>Hoja: distancia entre el 1<sup>o</sup> y 2<sup>o</sup> par defolios</b>		
short	courte	kurz	corta	Claudius, Early Spring	3
medium	moyenne	mittel	media	Greensleeves, Octavius	5
long	longue	lang	larga	Florida 683, Groene Pascal	7



English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>10. Leaf: size of the terminal leaflet</b> (* (+)	<b>Feuille: taille de la foliole terminale</b>	<b>Blatt: Größe des Endfiederblattes</b>	<b>Hoja: tamaño del folíolo terminal</b>		
small	petite	klein	pequeño	GiantRed, Stardust	3
medium	moyenne	mittel	medio	Shamrock	5
large	grande	groß	grande	EarlySpring	7
<b>11. Leaflet: shape of tip on margin</b> (* (+)	<b>Foliole: forme des pointes du bord</b>	<b>Blattfieder: Form der Spitze des Randes</b>	<b>Folíolo: forma de las puntas del borde</b>		
acute	pointues	zugespitzt	agudas	Trinova, Bolivar	1
rounded	arrondies	abgerundet	redondeadas	D'Elne	2
<b>12. Leaflet: density of margin incisions</b> (* (+)	<b>Foliole: densité des incisions du bord</b>	<b>Blattfieder: Dichte der Randeinschnitte</b>	<b>Folíolo: densidad de las incisiones del borde</b>		
sparse	lâche	locker	laxa	Multipak	3
medium	moyenne	mittel	media	Del Valdarno	5
dense	dense	dicht	densa	GoldenSpartan	7
<b>13. Leaflet: spacing of lobes</b> (* (+)	<b>Foliole: espacement entre les lobes</b>	<b>Blattfieder: Abstand zwischen den Lappen</b>	<b>Folíolo: espaciado entre los lóbulos</b>		
not touching	ne se touchent pas	sich nicht berührend	sintocarse	GoldenSpartan, Uta	1
touching	se touchent	sich berührend	tocándose	EarlySpring, Victoria	2
overlapping	se chevauchent	überlappend	solapados	Claudius	3
<b>14. Petiole: anthocyanin coloration</b> (* (+)	<b>Pétiole: pigmentation anthocyanique</b>	<b>Blattstiel: Anthocyanfärbung</b>	<b>Pecíolo: pigmentación antocianica</b>		
absent	absente	fehlend	ausente	GoldenSpartan	1
present	présente	vorhanden	presente	GiantRed	9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>15. Petiole: intensity of anthocyanin coloration</b>	<b>Pétiole: intensité de la pigmentation anthocyanique</b>	<b>Blattstiel: Intensität der Anthocyanfärbung</b>	<b>Pecíolo: intensidad de la pigmentación antocianica</b>		
weak	faible	gering	débil	GiantPink	3
medium	moyenne	mittel	media	Ideal	5
strong	forte	stark	fuerte	GiantRed	7
<b>16. Petiole: length (*) (+)</b>	<b>Pétiole: longueur</b>	<b>Blattstiel: Länge</b>	<b>Pecíolo: longitud</b>		
short	court	kurz	corto	Oscar	3
medium	moyen	mittel	medio	GroenePascal	5
long	long	lang	largo	GiantRed	7
<b>17. Petiole: width (+)</b>	<b>Pétiole: largeur</b>	<b>Blattstiel: Breite</b>	<b>Pecíolo: anchura</b>		
narrow	étroit	schmal	estrecho	Ideal	3
medium	moyen	mittel	medio	GreenSleeves	5
broad	large	breit	ancho	TopSeller	7
<b>18. Petiole: prominence of ribs</b>	<b>Pétiole: relief des côtes</b>	<b>Blattstiel: Ausprägung der Rippen</b>	<b>Pecíolo: prominencia de las costillas</b>		
absent or very weak	nul ou très faible	fehlend oder sehr gering	ausente o muy débil	PleinblancLepage	1
weak	faible	gering	débil	GoldenSelf -Blanching	3
medium	moyen	mittel	medio	Victoria	5
strong	fort	stark	fuerte	Claudius	7
<b>19. Petiole: profile of inner side in cross section (+)</b>	<b>Pétiole: profil de la face interne en section transversale</b>	<b>Blattstiel: Profil der Innenseite im Querschnitt</b>	<b>Pecíolo: perfil de la cara interna en sección transversal</b>		
straight	droit	gerade	recta	D'Elne	1
slightly concave	légèrement concave	leicht konkav	ligeramente cóncava	GroenePascal	2
strongly concave	fortement concave	stark konkav	fuertemente cóncava	GreenSleeves	3

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>20. Petiole: self - blanching (*)</b>	<b>Pétiole: blanchiment naturel</b>	<b>Blattstiel: Selbstbleichung</b>	<b>Pecíolo: autoblanqueo</b>		
absent	absent	fehlend	ausente	Groene Pascal	1
present	présent	vorhanden	presente	Autumn Gold	9
<b>21. <u>Only non self - blanching varieties</u>: Petiole: intensity of greencolor</b>	<b><u>Seulement les variétés n'ayant pas un blanchiment naturel</u>: Pétiole: intensité de la couleur verte</b>	<b><u>Nur nicht - selbstbleichende Sorten</u>: Blattstiel: Intensität der Grünfärbung</b>	<b><u>Sólo variedades que no son de autoblanqueo</u>: Pecíolo: intensidad del color verde</b>		
light	claire	hell	claro	Autumn Gold	3
medium	moyenne	mittel	medio	Green Sleeves	5
dark	foncée	dunkel	oscuro	Giant Red	7

VIII. ExplanationsontheTableofCharacteristics

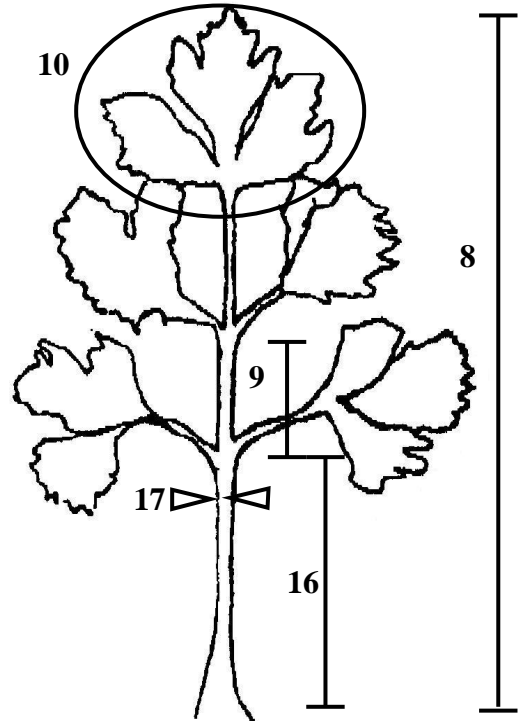
Ad.8,9,10,16,17

Leaf: length(includingpetiole)(8)

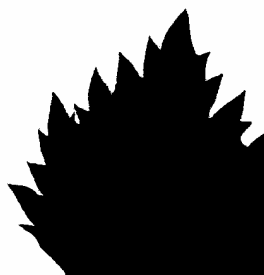
Leaf: distancebetween  
1<sup>st</sup>and2<sup>nd</sup>pairof  
leaflets(9)

Leaf: sizeoftheterminal leaflet(10)

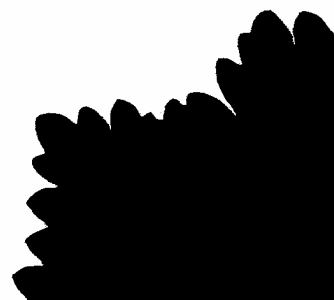
Petiole: length(16)  
width(17)



Ad.11:Leaflet:shapeoftipsonmargin

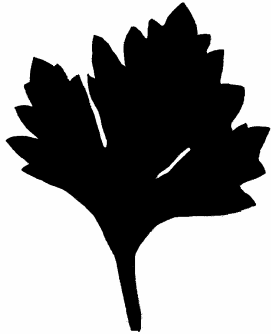


1  
acute

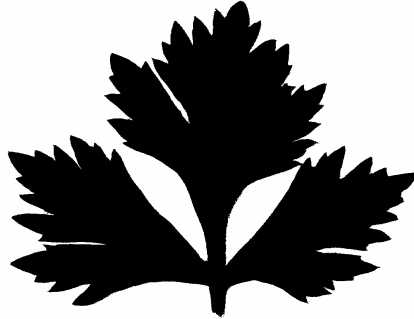


2  
rounded

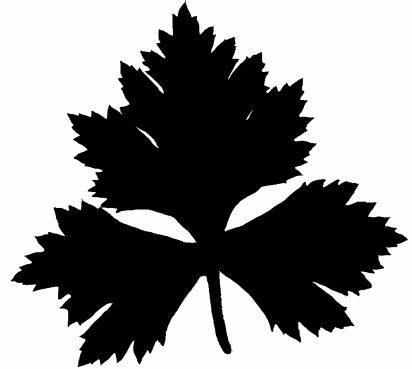
Ad.12:Leaflet:densityofmarginincisions



3  
sparse

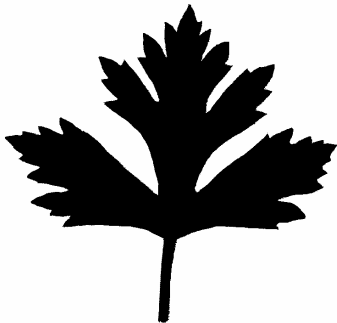


5  
medium

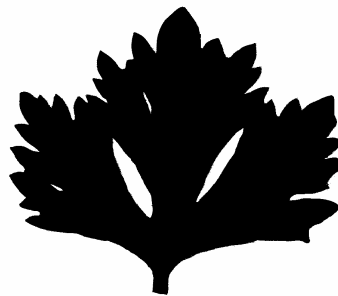


7  
dense

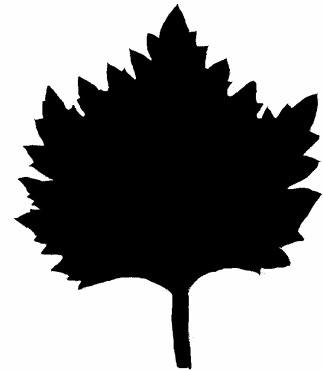
Ad.13:Leaflet:spacing oflobes



1  
nottouching



2  
touching



3  
overlapping

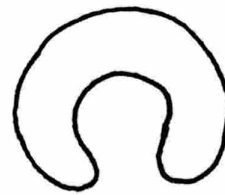
Ad.19:Petiole:profileofinnersideincrosssection



1  
straight



2  
slightlyconcave



3  
stronglyconcave

## IX. Literature

Becker-Dillingen, 3 (1956): Sellerie in: Handbuch des gesamten Gemüsebaues, 6. Auflage, Paul Parey Verlag, Berlin – Hamburg, 592 – 613.

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Ramin, A.A., 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., 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.

Rubatsky, V.E., Quiros, C.F., Simon, P.W. (1999): Carrots and related vegetable *Umbelliferae*. Crop Production Science in Horticulture Series; 10. CABI Publishing. Wallingford & New York. ISBN 0851991297.

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights	
1. Species	<p style="text-align: center;"><i>Apium graveolens</i> L. var. <i>dulce</i> (Mill.) Pers.                  CELERY, STALK CELERY</p> <p style="text-align: center;"><i>Apium graveolens</i> L. var. <i>secalinum</i> Alef.                  CUTTING CELERY, LEAF CELERY, SMALLAGE</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	
(a)	hybrid	<input type="checkbox"/>
(b)	open-pollinated	<input type="checkbox"/>
(c)	other (please, indicate)	<input type="checkbox"/>
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
<b>5.1 Plant: height</b> (1)		
very short	Afina	1 <input type="checkbox"/>
short	Claudius	3 <input type="checkbox"/>
medium	Green Sleeves	5 <input type="checkbox"/>
tall	Martine	7 <input type="checkbox"/>
very tall	Giant Red	9 <input type="checkbox"/>
<b>5.2 Foliage: attitude</b> (3)		
erect	Autumn Gold	1 <input type="checkbox"/>
erect to semi-erect	Green Sleeves	2 <input type="checkbox"/>
semi-erect	Shamrock	3 <input type="checkbox"/>
semi-erect to horizontal	Amsterdam Donker groene	4 <input type="checkbox"/>
horizontal	Martine	5 <input type="checkbox"/>
<b>5.3 Leaf blade: size of the terminal leaflet</b> (10)		
small	Giant Red, Stardust	3 <input type="checkbox"/>
medium	Shamrock	5 <input type="checkbox"/>
large	Early Spring	7 <input type="checkbox"/>

Characteristics	Example Varieties	Note
<b>5.4 Leaflet: shape of tip on margin (11)</b>		
acute	Trinova, Bolivar	1[]
rounded	D'Elne	2[]
<b>5.5 Leaflet: spacing of lobes (13)</b>		
not touching	Golden Spartan, Uta	1[]
touching	Early Spring, Victoria	2[]
overlapping	Claudius	3[]
<b>5.6 Petiole: anthocyanin coloration (14)</b>		
absent	Golden Spartan	1[]
present	Giant Red	9[]
<b>5.7 Petiole: self-blanching (20)</b>		
absent	Groene Pascal	1[]
present	Autumn Gold	9[]
<b>5.8 <u>Only non self-blanching varieties</u>: Petiole: intensity of green color (21)</b>		
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 <sup>o)</sup>	State of expression of similar variety	State of expression of candidate variety
---------------------------------	--	--	--

<sup>o)</sup> 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

(a) leaves (cuttings)

(b) 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]