



TG/62/6

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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

RHUBARB

(Rheum rhabarbarum L.)

**GENEVA
1999**

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TG/62/6

ORIGINAL: English

DATE: 1999-03-24

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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 Test Guidelines apply to all varieties of *Rheum rhabarbarum* L.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material 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 make sure that all customs formalities are complied with. The minimum quantity of plant material to be supplied by the applicant in one or several samples should be:

10 plants sufficient to provide 30 single bud roots.

The plant material supplied should be visibly healthy, not lacking in vigor or affected by any important pest or disease. It must in particular be free from visually recognizable virus diseases and nematodes.

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 similar growing periods with a planting time in autumn.

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 10 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 10 plants or parts taken from each of 10 plants.

2. For the assessment of uniformity a population standard of 1% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 10 plants, the maximum number of off-types allowed would be 1.

3. Unless otherwise indicated, all observations on vegetative organs should be made on the largest leaves when the ochrea of the inflorescence is first visible.
4. All observations on the petiole should be made at its mid-point.

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:
 - (a) Petiole: type of cross section (characteristic 14)
 - (b) Petiole: ground color of skin (characteristic 15)
 - (c) Petiole: color of flesh (characteristic 21).

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 the different characteristics.
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. (*)	Leaf blade: size	Limbe: taille	Blattspreite: Größe	Limbo: tamaño	
	small	petit	klein	pequeño	Royal Red 3
	medium	moyen	mittel	medio	Cherry Gem 5
	large	grand	groß	grande	Family Choice 7
2. (*)	Leaf blade: green color	Limbe: couleur verte	Blattspreite: Grünfärbung	Limbo: color verde	
	light	claire	hell	claro	Merton Foremost 3
	medium	moyenne	mittel	medio	The Sutton 5
	dark	foncée	dunkel	oscuro	Cawood Oak 7
3. (*)	Leaf blade: blistering	Limbe: cloûre	Blattspreite: Blasigkeit	Limbo: abullonado	
	weak	faible	gering	débil	The Sutton 3
	medium	moyenne	mittel	medio	Mammoth 5
	strong	forte	stark	fuerte	Cawood Oak 7
4. (*)	Leaf blade: undulation of margin	Limbe: ondulation du bord	Blattspreite: Wellung des Randes	Limbo: ondulación del borde	
	weak	faible	gering	débil	Giant Grooveless Crimson 3
	medium	moyenne	mittel	media	Cawood Delight 5
	strong	forte	stark	fuerte	Kentville 7
5. (*)	Leaf blade: shape of apex	Limbe: forme du sommet	Blattspreite: Form der Spitze	Limbo: forma del extremo	
	pointed	pointu	spitz	puntiagudo	Early Sunrise 1
	obtuse	obtus	stumpf	obtuso	Daw's Champion 2
	round	arrondi	rund	redondo	Giant Grooveless Crimson 3

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6. (*)	Leaf blade: base	Limbe: base	Blattspreite: Basis	Limbo: base	
	open	ouverte	offen	abierta	1
	closed	fermée	geschlossen	cerrada	2
	overlapping	à lobes chevauchants	überlappend	con lóbulos superpuestos Victoria	3
7. (*)	Leaf blade: number of veins arising from petiole	Limbe: nombre de nervures issues du pétiole	Blattspreite: Anzahl vom Blattstiel ausgehender Adern	Limbo: número de nervios a partir del peciolo	
	three	trois	drei	tres	1
	five	cinq	fünf	cinco Victoria	2
	seven	sept	sieben	siete	3
8. (*)	Leaf blade: anthocyanin coloration of main veins	Limbe: pigmentation anthocyanique des nervures principales	Blattspreite: Anthocyanfärbung der Hauptadern	Limbo: pigmentación antocianica del nervio principal	
	absent	absente	fehlend	ausente Mammoth	1
	present	présente	vorhanden	presente Cawood Delight	9
9. (*)	Petiole: attitude	Pétiole: port	Stiel: Haltung	Peciolo: porte	
	erect	dressé	aufrecht	erecto Stockbridge Cropper	1
	semi-erect	demi-dressé	halbaufrecht	semierecto Prince Albert	3
	horizontal	horizontal	waagerecht	horizontal Cawood Delight	5
10. (*)	Petiole: length	Pétiole: longueur	Stiel: Länge	Peciolo: longitud	
	short	court	kurz	corto Early Superb	3
	medium	moyen	mittel	medio Cawood Delight	5
	long	long	lang	largo The Sutton	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. Petiole: width (* (+)	Pétiole: largeur	Stiel: Breite	Peciolo: anchura		
narrow	étroit	schmal	estrecho	Early Sunrise	3
medium	moyen	mittel	medio	Kentville	5
broad	large	breit	ancho	The Sutton	7
12. Petiole: thickness (* (+)	Pétiole: épaisseur	Stiel: Dicke	Peciolo: grosor		
thin	mince	dünn	delgado		3
medium	moyen	mittel	medio		5
thick	épais	dick	grueso		7
13. Petiole: ratio width/thickness	Pétiole: rapport largeur/épaisseur	Stiel: Verhältnis Breite/Dicke	Peciolo: relación anchura/grosor		
small	petit	klein	pequeña		3
medium	moyen	mittel	media		5
large	grand	groß	grande		7
14. Petiole: type of cross-section (* (+)	Pétiole: type de la section transversale	Stiel: Typ des Querschnittes	Peciolo: tipo de sección transversal		
type 1	type 1	Typ 1	tipo 1	Laxton's No. 1	1
type 2	type 2	Typ 2	tipo 2	Kentville	2
type 3	type 3	Typ 3	tipo 3	The Sutton	3
type 4	type 4	Typ 4	tipo 4	Giant Grooveless Crimson	4
type 5	type 5	Typ 5	tipo 5	Early Superb	5
type 6	type 6	Typ 6	tipo 6	Tobolsk	6
type 7	type 7	Typ 7	tipo 7	Daw's Champion	7
type 8	type 8	Typ 8	tipo 8	Cawood Delight	8

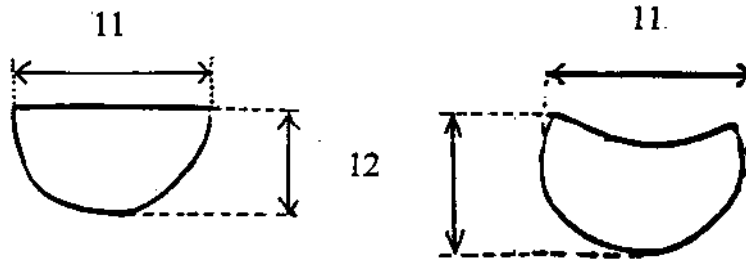
	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15. (*)	Petiole: ground color of skin	Pétiolle: couleur de fond de l'épiderme	Stiel: Grundfarbe der Schale	Peciolo: color de fondo de la epidermis		
	green	vert	grün	verde		1
	red	rouge	rot	rojo	Royal Red	2
16. (*)	Petiole: distribution of skin superimposed color <u>at base</u>	Pétiolle: répartition de la couleur secondaire de l'épiderme <u>à la base</u>	Stiel: Verteilung der Beifärbung der Schale <u>an der Basis</u>	Peciolo: distribución del color secundario de la epidermis <u>en la base</u>		
	absent	absente	fehlend	ausente		1
	speckled	en taches	gesprenkelt	en manchas	Prince Albert	2
	entire	uniforme	gleichmäßig	uniforme	The Sutton	3
17. (*)	Petiole: distribution of skin superimposed color <u>at middle</u>	Pétiolle: répartition de la couleur secondaire de l'épiderme <u>à mi-longueur</u>	Stiel: Verteilung der Beifärbung der Schale <u>in der Mitte</u>	Peciolo: distribución del color secundario de la epidermis <u>en el punto medio</u>		
	absent	absente	fehlend	ausente		1
	speckled	en taches	gesprenkelt	en manchas	The Sutton	2
	entire	uniforme	gleichmäßig	uniforme	Cawood Delight	3
18. (*)	Petiole: distribution of skin superimposed color <u>just below leaf blade</u>	Pétiolle: répartition de la couleur secondaire de l'épiderme <u>juste en dessous du limbe</u>	Stiel: Verteilung der Beifärbung der Schale <u>direkt unter der Blattspreite</u>	Peciolo: distribución del color secundario de la epidermis <u>justo debajo del limbo</u>		
	absent	absente	fehlend	ausente	Brown's Crimson	1
	speckled	en taches	gesprenkelt	en manchas	The Sutton	2
	entire	uniforme	gleichmäßig	uniforme	Cawood Delight	3
19. (*)	Petiole: hairiness just below leaf blade	Pétiolle: pilosité juste en dessous du limbe	Stiel: Behaarung direkt unter der Blattspreite	Peciolo: vellosidad justo debajo del limbo		
	absent	absente	fehlend	ausente	Victoria, Goliath	1
	present	présente	vorhanden	presente	Mira	9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20. Petiole: ribbing of dorsal side	Pétiole: cannelure de la face dorsale	Stiel: Rippung der Rückseite	Pecíolo: acanalado del envés		
absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Strawberry	1
weak	faible	gering	débil	Merton Foremost	3
medium	moyenne	mittel	medio	Carters Forcing	5
strong	forte	stark	fuerte	Family Choice	7
very strong	très forte	sehr stark	muy fuerte		9
21. Petiole: color of flesh (*)	Pétiole: couleur de la chair	Stiel: Fleischfarbe	Pecíolo: color de la pulpa		
white	blanche	weiß	blanco	Royal Red	1
green	verte	grün	verde	Cawood Oak	2
pink	rose	rosa	rosa	Giant Grooveless Crimson	3
red	rouge	rot	rojo	Early Sunrise	4
22. Flower buds: anthocyanin coloration (*)	Boutons floraux: pigmentation anthocyanique	Blütenknospen: Anthocyanfärbung	Botones florales: pigmentación antocianica		
absent	absente	fehlend	ausente		1
present	présente	vorhanden	presente		9
23. Inflorescence: density	Inflorescence: densité	Blütenstand: Dichte	Inflorescencia: densidad		
loose	lâche	locker	laxa	Cawood Castle	3
medium	moyenne	mittel	media	Brown's Crimson	5
dense	dense	dicht	densa	Daw's Challenge	7
24. Inflorescence: number of branches	Inflorescence: nombre de ramifications	Blütenstände: Anzahl Verzweigungen	Inflorescencia: número de ramificaciones		
few	petit	gering	bajo		3
medium	moyen	mittel	medio		5
many	grand	groß	alto		7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25. Peduncle: anthocyanin coloration <u>on</u> first node (*)	Pédoncule: pigmentation anthocyanique <u>au niveau du</u> premier nœud	Blütenstandstiel: Anthocyanfärbung <u>am</u> ersten Knoten	Pedúnculo: pigmentación antociánica <u>al</u> nivel del primer nudo		
absent	absente	fehlend	ausente		1
present	présente	vorhanden	presente		9
26. Peduncle: anthocyanin coloration <u>below</u> first node (*)	Pédoncule: pigmentation anthocyanique <u>en dessous du</u> premier nœud	Blütenstandstiel: Anthocyanfärbung <u>unterhalb</u> des ersten Knotens	Pedúnculo: pigmentación antociánica <u>por debajo del</u> primer nudo		
absent	absente	fehlend	ausente		1
present	présente	vorhanden	presente		9
27. Time of beginning of emergence (*)	Époque de début de croissance	Zeitpunkt des Austriebs	Fecha del comienzo del crecimiento		
early	précoce	früh	temprana	Timperley Early	3
medium	moyenne	mittel	media	Daws Champion	5
late	tardive	spät	tardía	Cawood Oak	7

VIII. Explanation on the Table of Characteristics

Ad. 11, 12 and 14: Petiole: width (11), thickness (12), and type of cross section (14)



type 1

type 2



type 3



type 4



type 5



type 6



type 7



type 8

IX. Literature

No specific literature.

X. 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. Species	<p><i>Rheum rhabarbarum</i> L. RHUBARB</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 Origin

(a) Seedling (indicate parent varieties)

..... []

(b) Mutation (indicate parent variety)

..... []

(c) Discovery (indicate where and when)

..... []

4.2 Other information

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the state of expression which best corresponds).

Characteristics	Example Varieties	Note
5.1 Petiole: length (10)		
short	The Sutton	3[]
medium	Cawood Delight	5[]
long	Early Superb	7[]
5.2 Petiole: type of cross-section (14)		
type 1	Laxton's No.1	1[]
type 2	Kentville	2[]
type 3	The Sutton	3[]
type 4	Giant Grooveless Crimson	4[]
type 5	Early Superb	5[]
type 6	Tobolsk	6[]
type 7	Daw's Champion	7[]
type 8	Cawood Delight	8[]
5.3 Petiole: ground color of skin (15)		
green		1[]
red	Royal Red	2[]
5.4 Petiole: distribution of skin superimposed color <u>at base</u> (16)		
absent		1[]
speckled	Prince Albert	2[]
entire	The Sutton	3[]

Characteristics	Example Varieties	Note
5.5 Petiole: distribution of skin superimposed color <u>at middle</u> (17)		
absent		1[]
speckled	The Sutton	2[]
entire	Cawood Delight	3[]
5.6 Petiole: distribution of skin superimposed color <u>just below leaf blade</u> (18)		
absent	Brown's Crimson	1[]
speckled	The Sutton	2[]
entire	Cawood Delight	3[]
5.7 Petiole: color of flesh (21)		
white	Royal Red	1[]
green	Cawood Oak	2[]
pink	Giant Grooveless Crimson	3[]
red	Early Sunrise	4[]

6. Similar varieties and differences between 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 Other information

8. Authorization for release

- (a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes No

- (b) Has such authorization been obtained?

Yes No

If the answer to that question is yes, please attach a copy of such an authorization.

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