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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**

**DRAFT**

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

**TURNIP**  
*(Brassica rapa L.  
var. rapa L.)*

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 *Brassica rapa* L. var. *rapa* L. with swollen roots.

## 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 make sure that all customs formalities are complied with. The minimum quantity of seed to be supplied by the applicant in one or several samples should be:

100 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. As a minimum, 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, weighting or counting should be made on 40 plants or parts taken from each of 40 plants.

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

3. Unless otherwise indicated, all observations on the foliage should be made on fully developed leaves which show no sign of senescence.

## 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) Ploidy (characteristic 1)
- (b) Leaf: lobing (characteristic 5)
- (c) Root: color of skin above soil (characteristic 19)
- (d) Root: color of flesh (characteristic 22)
- (e) Root: shape (characteristic 25)

## 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

	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>1.</b>	00	<b>Ploidy</b>	<b>Ploïdie</b>	<b>Ploidie</b>	<b>Ploidía</b>		
(*)		diploid	diploïde	diploid	diploide	Milan White	2
		tetraploid	tétraploïde	tetraploid	tetraploide	Taronda	4
<b>2.</b>	100-130	<b>Leaf: attitude</b>	<b>Feuille: port</b>	<b>Blatt: Stellung</b>	<b>Hoja: porte</b>		
		erect	dressé	aufrecht	erecto	Samson	1
		semi-erect	demi-dressé	halbaufrecht	semierecto	Agressa	3
		horizontal	horizontal	waagerecht	horizontal	Teltower Kleine	5
<b>3.</b>	100-130	<b>Leaf: reflexion of top</b>	<b>Feuille: enroulement du sommet</b>	<b>Blatt: Umbiegen der Spitze</b>	<b>Hoja: curvatura del ápice</b>		
(+)		absent or very weak	nul ou très faible	fehlend oder sehr gering	ausente o muy débil		1
		weak	faible	gering	débil	(Tigra)	3
		medium	moyen	mittel	media		5
		strong	fort	stark	fuerte	Noir long	7
		very strong	très fort	sehr stark	muy fuerte		9
<b>4.</b>	100-130	<b>Leaf: intensity of green color</b>	<b>Feuille: intensité de la couleur verte</b>	<b>Blatt: Intensität der Grünfärbung</b>	<b>Hoja: intensidad del color verde</b>		
(*)		very light	très claire	sehr hell	muy clara		1
		light	claire	hell	clara	Leielander	3
		medium	moyenne	mittel	media	Bency	5
		dark	foncée	dunkel	oscura	Frisia	7
		very dark	très foncée	sehr dunkel	muy oscura	Aberdeen Green Top Yellow	9

	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Not e/ Not a
<b>5.</b> (*) (+)	100-130	<b>Leaf: lobing</b>	<b>Feuille: décou- pure du bord</b>	<b>Blatt: Lappung</b>	<b>Hoja: lobulado</b>		
		absent	absente	fehlend	ausente	Polybra	1
		present	présente	vorhanden	presente	Samson	9
<b>6.</b> (+)	100-130	<b>Leaf: number of lobes (fully devel- oped lobed leaf)</b>	<b>Feuille: nombre de lobes (feuille complètement développée)</b>	<b>Blatt: Anzahl Lappen (vollent- wickeltes gelapp- tes Blatt)</b>	<b>Hoja: número de lóbulos (hoja completamente desarrollado)</b>		
		few	petit	gering	bajo	Tokyo Top	3
		medium	moyen	mittel	medio	De Montesson	5
		many	grand	groß	alto	Aberdeen Green Top Yellow	7
<b>7.</b> (+)	100-130	<b>Only non-lobed varieties: Leaf: incisions of blade base</b>	<b>Variétés à feuilles non lobées uni- quement: feuille: incisions à la base du limbe</b>	<b>Nichtgelappte Sorten: Blatt: Einschnitte auf der Blattspreiten- basis</b>	<b>Sólo variedades no lobulados: hoja incisoras de la base del limbo</b>		
		absent or very weak	nulles ou très faibles	fehlend oder sehr gering	ausente o muy débil	Alander	1
		weak	faibles	gering	débil	Milan White	3
		medium	moyennes	mittel	media	Teutonengold	5
		strong	fortes	stark	fuerte	Tokyo Market	7
		very strong	très fortes	sehr stark	muy fuerte	Polybra	9
<b>8.</b>	100-130	<b>Leaf: undulation of margin</b>	<b>Feuille: ondula- tion du bord</b>	<b>Blatt: Wellung des Randes</b>	<b>Hoja: ondulación del borde</b>		
		absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Tokyo Cross	1
		weak	faible	gering	débil	Tokyo Top	3
		medium	moyenne	mittel	media	Frisia	5
		strong	forte	stark	fuerte	(Cylon)	7
		very strong	très forte	sehr stark	muy fuerte	Imperial Green Globe	9

Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>9.</b> (+)	100-130	<b>Leaf: dentation of margin</b>	<b>Feuille: denture du bord</b>	<b>Blatt: Zähnung des Randes</b>	<b>Hoja: dentades del margen</b>	
		absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	1
		weak	faible	gering	débil	Milan White 3
		medium	moyenne	mittel	media	Polybra 5
		strong	forte	stark	fuerte	Taronda 7
		very strong	très forte	sehr stark	muy fuerte	Appin 9
<b>10.</b> (* (+)	100-130	<b>Leaf: length</b>	<b>Feuille: longueur</b>	<b>Blatt: Länge</b>	<b>Hoja: longitud</b>	
		short	courte	kurz	corta	Milan White Forcing 3
		medium	moyenne	mittel	media	Tokyo Cross 5
		long	longue	lang	larga	Tyfon 7
<b>11.</b> (+)	100-130	<b>Leaf: width</b>	<b>Feuille: largeur</b>	<b>Blatt: Breite</b>	<b>Hoja: anchura</b>	
		narrow	étroite	schmal	estrecha	De Milan rouge extra hâtif à chassis 3
		medium	moyenne	mittel	media	Maschinella 5
		broad	large	breit	ancha	Tyfon 7
<b>12.</b>	100-130	<b>Leaf: distance from widest point to base</b>	<b>Feuille: distance du point le plus large à la base</b>	<b>Blatt: Abstand zwischen der größten Breite und der Basis</b>	<b>Hoja: distancia del punto de anchura máxima a la base</b>	
		short	petite	klein	pequeña	Milan White Forcing 3
		medium	moyenne	mittel	media	Vollenda 5
		long	grande	groß	grande	The Wallace 7

	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>13.</b>	100-130	<b>Leaf: length of terminal lobe (for lobbed leaved varieties)</b>	<b>Feuille: longueur du lobe terminal (variétés à feuilles lobées)</b>	<b>Blatt: Länge des Endlappens (für gelappte Blattsorten)</b>	<b>Hoja: longitud del lóbulo terminal (sólo para variedades de hoja lobada)</b>		
		short	court	klein	pequeña	Platte Witte Mei	3
		medium	moyen	mittel	media	Snowball	5
		long	long	groß	grande	Tyfon	7
<b>14.</b>	100-130	<b>Leaf: width of terminal lobe (as for 13)</b>	<b>Feuille: largeur du lobe terminal (comme pour 13)</b>	<b>Blatt: Breite des Endlappens (wie unter 13)</b>	<b>Hoja: anchura del lóbulo terminal (como para 13)</b>		
		narrow	étroit	schmal	estrecha	Platte Witte Mei	3
		medium	moyen	mittel	media	Civasto R	5
		broad	large	breit	ancha	Massif	7
<b>15.</b>	100-130	<b>Leaf: hairiness of upper side</b>	<b>Feuille: pilosité de la face supérieure</b>	<b>Blatt: Behaarung der Oberseite</b>	<b>Hoja: velloso del haz</b>		
		absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Appin	1
		weak	faible	gering	débil	Teutongold, Tokyo Market	3
		medium	moyenne	mittel	media	De Milan rouge extra hâtif à chassis	5
		strong	forte	stark	fuerte	Blanc dur d'hiver, Blanc plat hâtif à feuille entière	7
		very strong	très forte	sehr stark	muy fuerte	(Hampshire Hardy, Green Round)	9



	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>16.</b>	100-130	<b>Leaf: anthocyanin coloration</b>	<b>Feuille: pigmentation anthocyanique</b>	<b>Blatt: Anthocyanfärbung</b>	<b>Hoja: pigmentación antocianica</b>		
		absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Leielander	1
		weak	faible	gering	débil	Bency	3
		medium	moyenne	mittel	media	(The Bruce)	5
		strong	forte	stark	fuerte	(Scarlet Ball)	7
		very strong	très forte	sehr stark	muy fuerte	(Tsutsui)	9
<b>17.</b> (* (+)	260-290	<b>Root: position in soil</b>	<b>Racine: position dans le sol</b>	<b>Rübe: Sitz im Erdboden</b>	<b>Raíz: posición dentro del suelo</b>		
		very shallow	très peu profonde	sehr flach	muy poco profunda	Milan White Forcing	1
		shallow	peu profonde	flach	poco profunda	Oasis	3
		medium	moyenne	mittel	media	Agressa	5
		deep	profonde	tief	profunda	Noir long	7
		very deep	très profonde	sehr tief	muy profunda	Teltower Kleine	9
<b>18.</b> (*	280	<b>Root: thick cork layer around skin</b>	<b>Racine: couche subéreuse sur l'épiderme</b>	<b>Rübe: Korkschicht um die Haut</b>	<b>Raíz: suber alrededor de la piel</b>		
		absent	absente	fehlend	ausente	Bency	1
		present	présente	vorhanden	presente	Noir long	9

	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>19.</b> (*)	240-260	<b>Root: color of skin above soil</b>	<b>Racine: couleur de l'épiderme de la partie hors-terre</b>	<b>Rübe: Farbe der Haut oberhalb des Erdbodens</b>	<b>Raíz: color de la epidermis sobre el suelo</b>		
		white	blanc	weiß	blanco	Tokyo Cross	1
		green	vert	grün	verde	Leielander	2
		yellow	jaune	gelb	amarillo	(Topaz)	3
		orange	orange	orange	naranja	Golden Ball	4
		bronze	bronze	bronze	bronce	Grandessa	5
		scarlet	écarlate	scharlachrot	escarlata	(Scarlet Ball)	6
		reddish purple	pourpre rougeâtre	rötlich violet	púrpura rojizo	Bency	7
		bluish purple	pourpre bleuâtre	blauviolet	púrpura azul...	(The Bruce)	8
<b>20.</b>	240-260	<b>Root: intensity of coloration of skin at top</b>	<b>Racine: intensité de la couleur de l'épiderme du collet</b>	<b>Rübe: Intensität der Farbe der Haut an der Spitze</b>	<b>Raíz: intensidad del color de la piel en el cuello</b>		
		light	claire	hell	clara		3
		medium	moyenne	mittel	media		5
		dark	foncée	dunkel	oscura		7
<b>21.</b>	240-260	<b>Root: colour of skin below ground</b>	<b>Racine: couleur de l'épiderme de la partie enterrée</b>	<b>Rübe: Farbe der Haut in der Erde</b>	<b>Raíz: color de la epidermis debajo del suelo</b>		
		white	blanc	weiß	blanco	Taronda	1
		yellow	jaune	gelb	amarillo	Teutonengold	2
		red	rouge	rot	rojo	(Scarlet Ball)	3
		purple	pourpre	purpur	púrpura	(Tsutsui)	4
<b>22.</b> (*)	240-280	<b>Root: color of flesh</b>	<b>Racine: couleur de la chair</b>	<b>Rübe: Farbe des Fleisches</b>	<b>Raíz: color de la pulpa</b>		
		white	blanche	weiß	blanco	Agressa	1
		yellow	jaune	gelb	amarillo	Teutonengold	2
	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota

23.	240-280	<b>Root: intensity of yellow color of flesh</b>	<b>Racine: intensité de la couleur jaune de la chair</b>	<b>Rübe: Intensität der Gelbfärbung des Fleisches</b>	<b>Raíz: intensidad del color amarillo de la pulpa</b>		
		light	claire	hell	clara	(Findlay)	3
		medium	moyenne	mittel	media	Teutonengold	5
		dark	foncée	dunkel	oscura	Petrowski)	7
24.	240-280	<b>Root: anthocyanin coloration of flesh</b>	<b>Racine: pigmentation anthocyanique de la chair</b>	<b>Rübe: Anthocyanfärbung des Fleisches</b>	<b>Raíz: pigmentación antocianica de la pulpa</b>		
		absent	absente	fehlend	ausente	Marteau	1
		present	présente	vorhanden	presente	(Scarlet Ball), (Tsutsui)	9
25. (* (+)	260-280	<b>Root: shape</b>	<b>Racine: forme</b>	<b>Rübe: Form</b>	<b>Raíz: forma</b>		
		transverse elliptic	elliptique transversale	quer elliptisch	elíptica transversal	Platte Witte Mei	1
		oblate	aplatie	breitrund	achatada	Milan White	2
		circular	circulaire	rund	circular	Rondo	3
		broad elliptic	elliptique large	breit elliptisch	elíptica ancha	(Alwi)	4
		obovate	obovale	verkehrt eiförmig	oboval	Champion Green Top, Yellow	5
		broad oblong	rectangulaire large	breit rechteckig	oblonga ancha	Rekord	6
		obtriangular	obtriangulaire	verkehrt dreieckig	obtriangular	(Sirius)	7
		narrow oblong	oblongue étroite	schmal rechteckig	oblonga estrecha	Long D'Alsace	8
26. (*	260-280	<b>Root: length</b>	<b>Racine: longueur</b>	<b>Rübe: Länge</b>	<b>Raíz: longitud</b>		
		very short	très courte	sehr kurz	muy corta	Milan White	1
		short	courte	kurz	corta	The Wallace	3
		medium	moyenne	mittel	media	Dynamo	5
		long	longue	lang	larga	Taronda	7
		very long	très longue	sehr lang	muy larga	Alander	9

	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>27.</b> (*)	260-280	<b>Root: width (at widest point)</b>	<b>Racine: largeur (de la partie la plus large)</b>	<b>Rübe: Breite (an breitester Stelle)</b>	<b>Raíz: Anchura (en la parte más ancha)</b>		
		narrow	étroite	schmal	estrecha	Hakutaka	3
		medium	moyenne	mittel	media	Rondo	5
		broad	large	breit	ancha	Massif	7
<b>28.</b> (* (+)	260-280	<b>Root: position of widest point</b>	<b>Racine: position relative de la partie la plus large</b>	<b>Rübe: Position der breitesten Stelle</b>	<b>Raíz: posición de la parte más ancha</b>		
		above middle	au-dessus du milieu	oberhalb der Mitte	encima de la mitad	Marteau	3
		at middle	au centre	in der Mitte	en la mitad	Taronda	5
		below middle	dans la partie basse	in der unteren Hälfte	debajo de la mitad	Blanc dur d'hiver	7
<b>29.</b>	260-280	<b>Root: curvature of main axis</b>	<b>Racine: courbure de l'axe principal</b>	<b>Rübe: Biegung der Hauptachse</b>	<b>Raíz: curvatura del eje principal</b>		
		absent	absente	fehlend	ausente	Taronda	1
		present	présente	vorhanden	presente	De Croissy	9
<b>30.</b> (* (+)	260-280	<b>Root: shape of top</b>	<b>Racine: forme du collet</b>	<b>Rübe: Form des oberen Teils</b>	<b>Raíz: forma del cuello</b>		
		strongly indented	fortement déprimée	stark eingesenkt	muy hundida		1
		indented	déprimée	eingesenkt	hundida	Milan White Forcing	3
		level	plane	eben	plana	Milan White	5
		raised	protubérante	vorgewölbt	prominente	Taronda	7
		strongly raised	fortement protubérante	stark vorgewölbt	muy prominente	Agressa	9

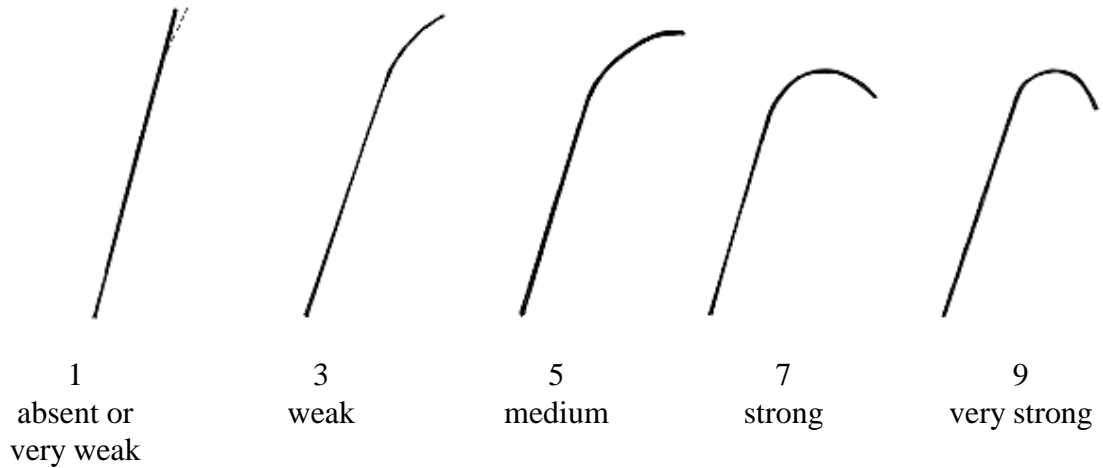
	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>31.</b> (*) (+)	260-280	<b>Root: shape of base</b>	<b>Racine: forme de la base</b>	<b>Rübe: Form der Basis</b>	<b>Raíz: forma de la base</b>		
		indented	déprimée	eingesenkt	hundida	Milan White Forcing	1
		truncate	tronquée	gerade	ortótopo	Milan White	3
		round	ronde	rund	redondas	Frisia	5
		obtuse	obtuse	stumpf	obtusa	(Sirius)	7
		pointed	pointue	spitz	puntiaguda	Noir long	9
<b>32.</b>	220-260	<b>Root: time of harvest maturity</b>	<b>Racine: époque de maturité de la récolte</b>	<b>Rübe: Zeitpunkt der Erntereife</b>	<b>Raíz: época de madurez para la cosecha</b>		
		early	précoce	früh	precoz	Oasis	3
		medium	moyenne	mittel	media	Jaune Tankard	5
		late	tardive	spät	tardía	Aberdeen Green Top Yellow	7
<b>33.</b>	370	<b>Plant: height at first flowering</b>	<b>Plante: hauteur à l'apparition des boutons floraux</b>	<b>Pflanze: Höhe zum Zeitpunkt des Erscheinens der Blütenknospen</b>	<b>Planta: altura en la primer floración</b>		
		short	courte	kurz	corta	Tyfon	3
		medium	moyenne	mittel	medio	Tokyo Cross	5
		tall	haute	hoch	alta	Aarselia	7
<b>34.</b>	370	<b>Time of flowering in year of sowing for early <u>spring</u> sown trials</b>	<b>Époque de floraison l'année du semis pour les essais semés au <u>printemps</u></b>	<b>Zeitpunkt der Blüte im Aussaat-<u>jahr bei Früh-jahrsaussaat</u></b>	<b>Época de floración en el año de siembra para ensayos sembrados al inicio de <u>primavera</u></b>		
		very early	très précoce	sehr früh	muy temprana		1
		early	précoce	früh	precoz	Blanc dur d'hiver	3
		medium	moyenne	mittel	media	Bency	5
		late	tardive	spät	tardía	Tokyo Market	7
		very late	très tardive	sehr spät	muy tardía	(Ostersundom)	9

	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35.	270-400	<b>Flower: color of petal</b>	<b>Fleur: couleur des pétales</b>	<b>Blüte: Farbe des Blütenblatts</b>	<b>Flore: color de los pétalos</b>		
		lemon-yellow	jaune-citron	zitronengelb	amarillo limón	Agressa	1
		orange-yellow	jaune-orange	orange gelb	amarillo anaranjado	Teutonengold	2
36.	370-400	<b>Flower: length of petal</b>	<b>Fleur: longueur des pétales</b>	<b>Blüte: Länge des Blütenblatts</b>	<b>Flore: longitud de los pétalos</b>		
		short	courts	kurz	corta	(Maschinella)	3
		medium	moyens	mittel	media	Tokyo Cross	5
		long	longs	lang	larga	Samson	7
37.	370-400	<b>Flower: width of petal</b>	<b>Fleur: largeur des pétales</b>	<b>Blüte: Länge des Blütenblatts</b>	<b>Flore: anchura de los pétalos</b>		
		narrow	étroits	schmal	estrecha	Leielander	3
		medium	moyens	mittel	media	Vollenda	5
		broad	larges	breit	ancha	Samson	7
38.	450-500	<b>Plant: height after flowering</b>	<b>Plante: hauteur après floraison</b>	<b>Pflanze: Höhe nach Blüte</b>	<b>Planta: altura despues floración</b>		
		short	basse	kurz	corta	(Market Express)	3
		medium	moyenne	mittel	media	Taronda	5
		long	haute	lang	larga	Barabas	7
39.	450-500	<b>Siliqua: length of beak</b>	<b>Silique: longueur du bec</b>	<b>Schote: Länge der Spitze</b>	<b>Silicua: longitud del rostro</b>		
		short	court	kurz	corta	Aberdeen Green Top Yellow	3
		medium	moyen	mittel	media	Barabas	5
		long	long	lang	larga	Appin	7
40.	450-500	<b>Siliqua: length of peduncle</b>	<b>Silique: longueur du pédoncule</b>	<b>Schote: Länge des Blütenstandstiels</b>	<b>Silicua: longitud del pedúnculo</b>		
		short	court	kurz	corta	Champion Green Top Yellow	3
		medium	moyen	mittel	media	Rondo	5
		long	long	lang	larga	Appin	7

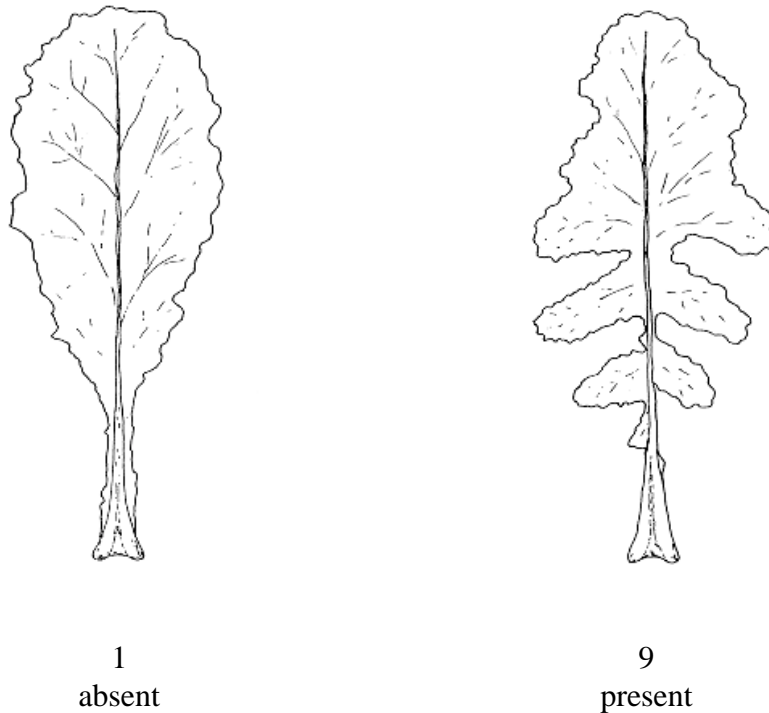
	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>41.</b>	450-500	<b>Siliqua: length (excluding beak and peduncle)</b>	<b>Silique: longueur (bec et pédoncule exclus)</b>	<b>Schote: Länge (Spitze und Blü- tenstandstiel aus- genommen)</b>	<b>Silicua: longitud (excluyendo rostro y pedúnculo)</b>		
		short	court	kurz	corta	Goldwalze	3
		medium	moyen	mittel	media	Taronda	5
		long	long	lang	larga	Lunga viola del Circeo	7
<b>42.</b>	00	<b>Seed: color (of ripe seeds)</b>	<b>Graine: couleur (graine mûre)</b>	<b>Samen: Farbe (am reifen Samen)</b>	<b>Semilla: color (en semillas maduras)</b>		
		pale brown	brun clair	hellbraun	marrón claro	(Scarlet Ball)	1
		dark brown or black	brun foncé ou noir	dunkelbraun oder schwarz	marrón oscuro o negro	Taronda	2

VIII. Explanations on the Table of Characteristics

Ad. 3: Leaf: reflexion of top



Ad. 5: Leaf: lobing



Assessment of leaf lobing should be undertaken on several leaves of the plant. Plants with lobes absent usually have obovate and spatulate shaped leaves. These have continuous lamina tissue to the base of the leaf, no terminal lobe and may be strongly incised.



Ad. 6. Leaf: number of lobes



Figure 1

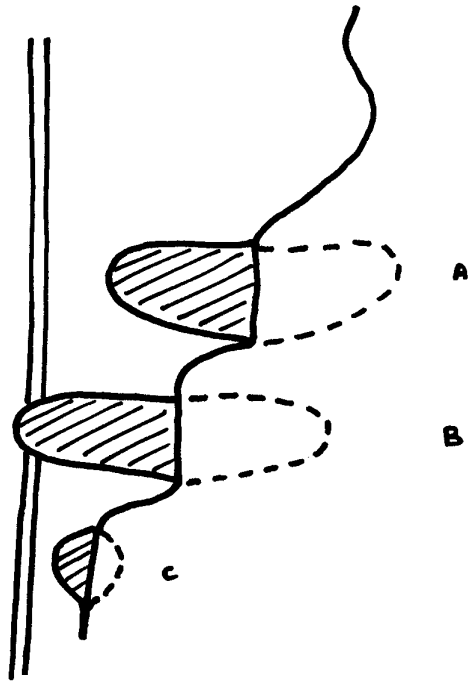


Figure 2

To determine whether part of the leaf is a lobe, fold that part along a line parallel to the midrib as indicated by the dotted line in figure 1. The fold starts at the base of the shorter side.

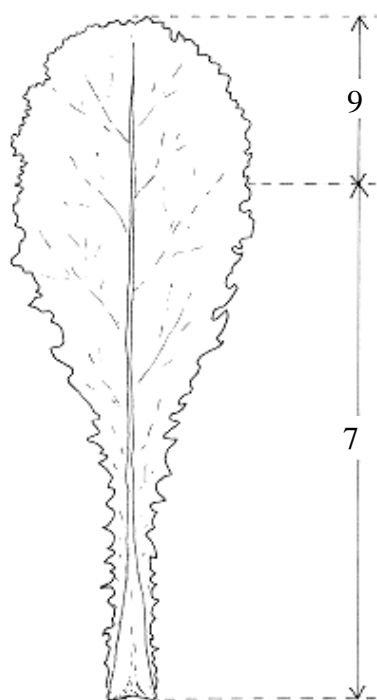
If the folded tissue meets the midrib, it is a lobe (figure 2)

A lobe must have a minimum length of 1 cm.

- 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

Ad. 7: Non-lobed varieties only: Leaf: incisions of blade base

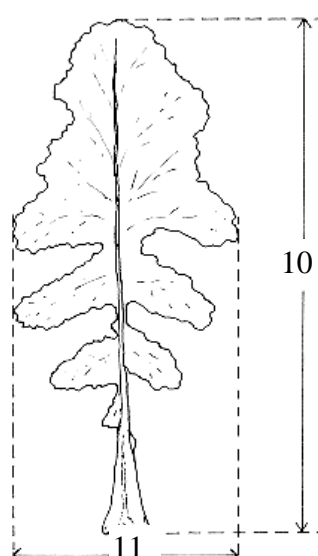
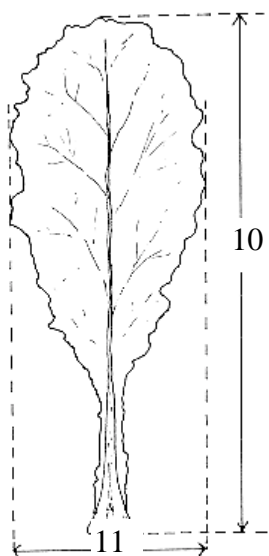
Ad. 9: Leaf: dentation of margin



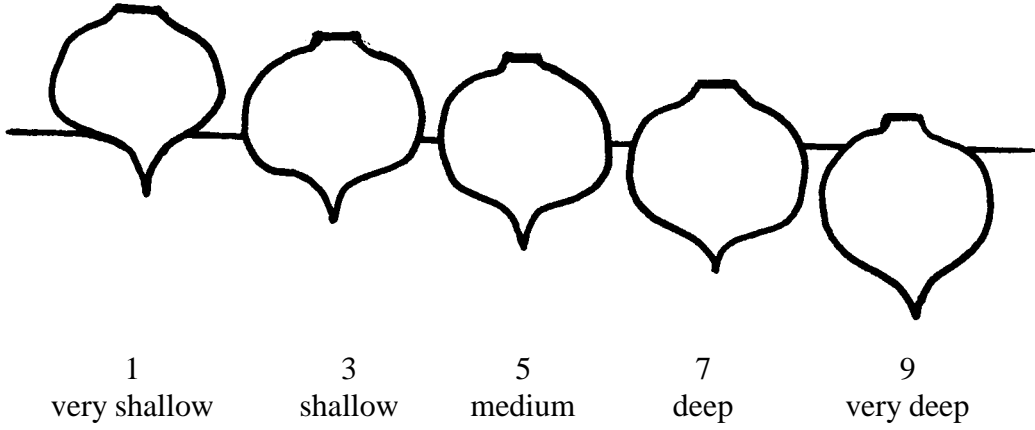
part on which the dentation should be recorded  
(characteristic 9)

part on which the incisions of base of the blade should be  
recorded (characteristic 7)

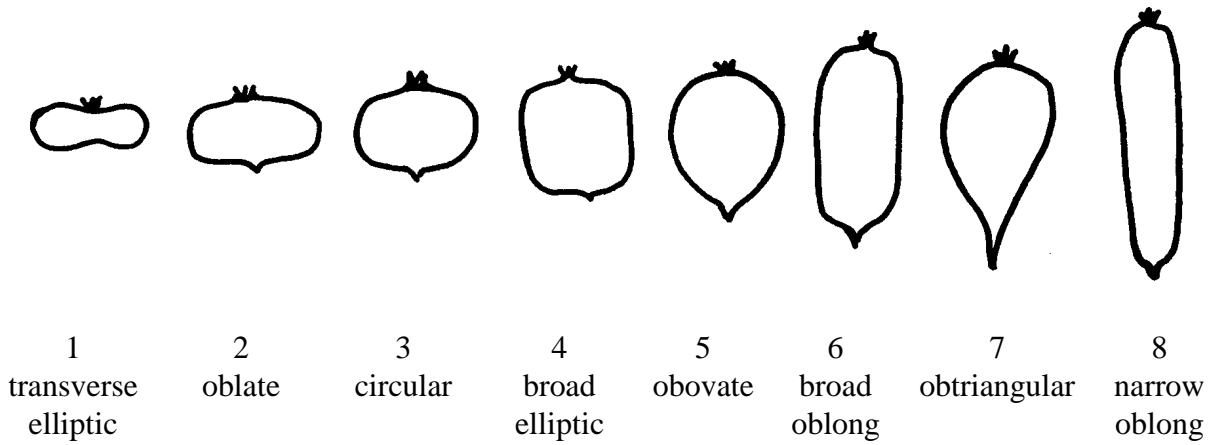
Ad. 10, 11: Leaf: length (10), width (11)



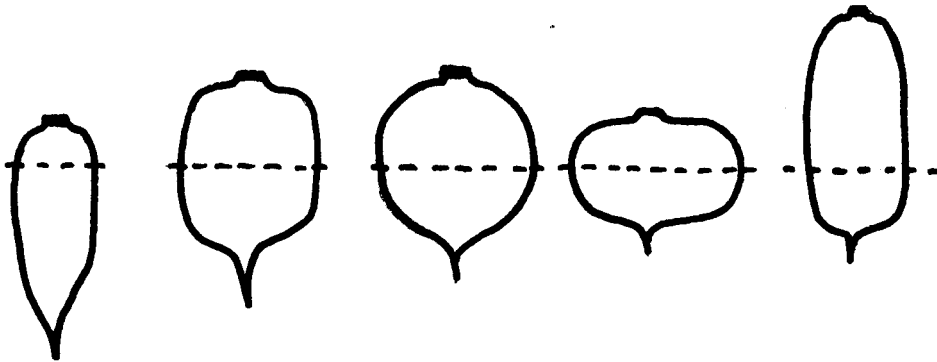
Ad. 17: Root: position in soil



Ad. 25: Root: shape



Ad. 28: Root: position of widest point



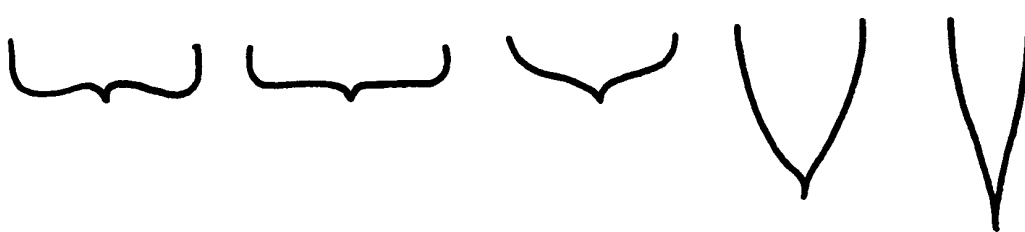
3 above middle    5 at middle    5 at middle    5 at middle    7 below middle

Ad. 30: Root: shape of top



3 indented    5 level    7 raised    9 strongly raised

Ad. 31: Root: shape of base



1 indented    3 truncate    5 round    7 obtuse    9 pointed

## KEY FOR GROWTH STAGES

00        Dry seed

1- 10     Germination and emergence through soil

### Seedling growth

12        Elongation of emerging shoot

15        Elongation and opening of cotyledons

20        Cotyledons fully opened

30        Cotyledons fully opened and full development of first true leaf

40        Second leaf fully developed

50        Third leaf fully developed and initial senescence of cotyledons

60        Fourth leaf fully developed and partial senescence of cotyledons

70        Fifth leaf fully developed and advanced senescence/drop of cotyledons

### Leaf development

80        Sixth leaf fully developed;

90        Seventh leaf fully developed;        initial senescence of first true leaf in early cultivars

100       Eighth leaf fully developed;        30 % senescence of first true leaf

110       Ninth leaf fully developed;        60% senescence of first true leaf

120       Tenth leaf fully developed;        complete senescence and drop of first true leaf

130       Eleventh leaf fully developed.

### Root development

200       slight swelling of the root at ground level

220       development of a small swollen root above ground level

240       swollen root increasing in size but not fully developed

260       root fully developed with no cork on skin

270       root fully developed with 40% cork development on skin

280       root fully developed with 80 - 100% cork development

290       root flesh becoming pithy and fibrous

300       root flesh pithy and fibrous

### Flowering and seed production on main stem

310       initial formation and elongation of the flowering stem

330       elongation of the flowering stem with clear space between leaves

350       first bud formation and further elongation of stem

360       terminal inflorescence in bud

370       terminal inflorescence with first open flower

380       terminal inflorescence partially flowering

400       terminal inflorescence fully flowering

420       development of siliqua with elongation of flowering stem

430       lowest fully developed siliqua green

450       lowest fully developed siliqua senescing and going brown

475       lowest fully developed siliqua dry with seed beginning to dry

500       lowest fully developed siliqua dry with mature dry seed

## IX. Literature

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Baltjes, H.J., Klein Geltink, D.J.A., Nienhuis, K.H. and Luesink, B., 1985: "Linking Distinctness and Description of Varieties." Journal National Institute Agricultural Botany. 17. p. 9-19.

Green, F.N. and Winfield, P.J. 1984: "The Development of Distinctness, Uniformity and Stability tests for Turnip, Turnip Rape and Swede in the United Kingdom." Procedures of Better Brassicas '84 Conference. St. Andrews. Eds. W. H. Macfarlane Smith, T. Hodgkin and A. B. Wills. 96-107. Scottish Crop Research Institute, Dundee.

Kajanus, B. 1913: "Über die Vererbungsweise gewisser Merkmale der Beta- und Brassica-Ruben. II Brassica." Zeitschrift für Pflanzenzüchtung, Band I (4): 419-466.

Klein Geltink, D.J.A., 1983: "Inheritance of Leaf Shape in Turnip (*Brassica rapa* L. partim) and Rape (*Brassica napus* L.)." Euphytica 32 (2): 361-365.

McMaster Davey, V., 1931: "Color inheritance in swedes and turnips and its bearing on the identification of commercial stocks." Nat. Journ. Agric. XIV (3): 1-13.

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>Brassica rapa</i> L. var. <i>rapa</i> L.  TURNIP</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 and breeding method

(a) Open-pollinated variety

(b) Single hybrid

(c) Three-way hybrid

(d) Other (indicate type)

.....

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
<b>5.1 Ploidy</b> <b>(1)</b>		
diploid	Milan White	2[ ]
tetraploid	Taronda	4[ ]
<b>5.2 Leaf: intensity of green color</b> <b>(4)</b>		
very light		1[ ]
light	Leielander	3[ ]
medium	Bency	5[ ]
dark	Frisia	7[ ]
very dark	Aberdeen Green Top Yellow	9[ ]
<b>5.3 Leaf: lobing</b> <b>(5)</b>		
absent	Polybra	1[ ]
present	Samson	2[ ]
<b>5.4 Leaf: length</b> <b>(10)</b>		
short	Milan White Forcing	3[ ]
medium	Tokyo Cross	5[ ]
long	Tyfon	7[ ]

Characteristics	Example Varieties	Note
<b>5.5 Root: position in soil</b> (17)		
very shallow	Milan White Forcing	1[ ]
shallow	Oasis	3[ ]
medium	Agressa	5[ ]
deep	Noir long	7[ ]
very deep	Teltower Kleine	9[ ]
<b>5.6 Root: thick cork layer around skin</b> (18)		
absent	Bency	1[ ]
present	Noir long	9[ ]
<b>5.7 Root: color of skin above soil</b> (19)		
white	Tokyo Cross	1[ ]
green	Leielander	2[ ]
yellow	Topaz	3[ ]
orange	Golden Ball	4[ ]
bronze	Grandessa	5[ ]
scarlet	Scarlet Ball	6[ ]
reddish purple	Bency	7[ ]
bluish purple	The Bruce	8[ ]
<b>5.8 Root: color of flesh</b> (22)		
white	Agressa	1[ ]
yellow	Teutonengold	2[ ]

Characteristics	Example Varieties	Note
<b>5.9 Root: shape</b> (25)		
transverse elliptic	Platte Witte Mei	1[ ]
oblate	Milan White	2[ ]
circular	Rondo	3[ ]
broad elliptic	Alwi	4[ ]
obovate	Champion Green Top Yellow	5[ ]
broad oblong	Rekord	6[ ]
obtriangular	Sirius	7[ ]
narrow oblong	Long d'Alsace	8[ ]
<b>5.10 Root: length</b> (26)		
very short	Milan White	1[ ]
short	The Wallace	3[ ]
medium	Dynamo	5[ ]
long	Taronda	7[ ]
very long	Alander	9[ ]
<b>5.11 Root: width</b> (27)		
narrow	Hakutaka	3[ ]
medium	Rondo	5[ ]
broad	Massif	7[ ]
<b>5.12 Root: position of widest point</b> (28)		
above middle	Marteau	3[ ]
middle	Taronda	5[ ]
below middle	Blanc dur d'hiver	7[ ]

Characteristics	Example Varieties	Note
<b>5.13 Root: shape of top (30)</b>		
strongly indented		1[ ]
indented	Milan White Forcing	3[ ]
level	Milan White	5[ ]
raised	Taronda	7[ ]
strongly raised	Agressa	9[ ]
<b>5.14 Root: shape of base (31)</b>		
strongly indented	Milan White Forcing	1[ ]
truncate	Miland White	3[ ]
round	Frisia	5[ ]
obtuse	Sirius	7[ ]
pointed	Noir Long	9[ ]

6. Similar varieties and differences between 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 Main use:

- Root Vegetable
- Stubble or Forage Turnip

7.3 Time of Sowing

- Spring sown
- Summer sown
- Autumn sown

7.4 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.

[End of document]