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Ces principes directeurs d'examen ont été remplacés par une version ultérieure. La version adoptée la plus récente des principes directeurs d'examen figure à l'adresse suivante : http://www.upov.int/test_guidelines/fr/list.jsp

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Diese Prüfungsrichtlinien wurden durch eine neuere Fassung ersetzt. Die neueste angenommene Fassung von Prüfungsrichtlinien ist unter http://www.upov.int/test_guidelines/en/list.jsp zu finden.

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TG/63/6

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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

BLACK RADDISH

*(Raphanus sativus L.
var. niger (Mill.) S. Kerner)*

GENEVA
1999

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TG/63/6

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DATE: 1999-03-24

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GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

BLACK RADISH

***(Raphanus sativus L.
var. niger (Mill.) S. Kerner)***

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.

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
I. Subject of these Guidelines	3
II. Material Required	3
III. Conduct of Tests	3
IV. Methods and Observations.....	3
V. Grouping of Varieties	4
VI. Characteristics and Symbols	4
VII. Table of Characteristics	5
VIII. Explanations on the Table of Characteristics	12
IX. Literature	15
X. Technical Questionnaire	16

I. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Raphanus sativus* L. var. *niger* (Mill.) S. Kerner.

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:

50 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 similar growing periods.

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 in the glasshouse or 90 plants in the open 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. All observations on the cotyledon should be made when the first two leaves are fully developed.
4. All observations on the leaf should be made on fully developed leaves at harvest maturity.
5. All observations on the radish should be made at start of hollowness.

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) Blade: lobes (division to midrib) (characteristic 11)
 - (b) Ploidy (characteristic 1)
 - (c) Leaf Radish: shape (characteristic 18)
 - (d) Radish: color of skin (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 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. Ploidy (*)	Ploidie	Ploidie	Ploidía		
diploid	diploïde	diploid	diploide	Unus Treib	2
tetraploid	tétraploïde	tetraploid	tetraploide	Rex	4
2. Seedling: (*) anthocyanin coloration of hypocotyl	Plantule: pigmentation anthocyanique de l'hypocotyle	Keimpflanze: Anthocyanfärbung des Hypokotyls	Plántula: pigmentación antociánica del hipocotilo		
absent	absente	fehlend	ausente	Minowase Summer Cross Nr. 3	1
present	présente	vorhanden	presente	Kaiser	9
3. Cotyledon: shape (+)	Cotylédon: forme	Keimblatt: Form	Cotiledón: forma		
heart-shaped	en forme de cœur	herzförmig	acorazonada	Münchner Bier	1
broad heart-shaped	en forme de cœur large	breit herzförmig	acorazonada ancha	Kaiser	2
4. Cotyledon: size	Cotylédon: taille	Keimblatt: Größe	Cotiledón: tamaño		
small	petit	klein	pequeño		3
medium	moyen	mittel	medio	Servatius	5
large	grand	groß	grande	Unus Treib	7
5. Foliage: number of fully developed leaves	Feuillage: nombre de feuilles à complet développement	Laub: Anzahl der ausgewachsenen Blätter	Follaje: número de hojas completamente desarrolladas		
few	petit	gering	bajo	Rex	3
medium	moyen	mittel	medio		5
many	grand	groß	alto		7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6. Leaf: attitude (*)	Feuille: port	Blatt: Haltung	Hoja: porte		
erect	dressé	aufrecht	erecto	Rex	1
semi-erect	demi-dressé	halbaufrecht	semierecto	Unus Treib	3
horizontal	horizontal	waagrecht	horizontal	Minowase Summer Cross Nr. 3	5
7. Leaf: length (*)	Feuille: longueur	Blatt: Länge	Hoja: longitud		
short	courte	kurz	corta		3
medium	moyenne	mittel	media	Noir long maraîcher, Rex	5
long	longue	lang	larga	Noir gros rond d'hiver, Ovale blanc de Munich	7
8. Leaf blade: shape	Limbe: forme	Blattspreite: Form	Limbo: forma		
narrow-obovate	obovale étroit	schmal verkehrt eiförmig	oboval estrecha	Florian	1
obovate	obovale	verkehrt eiförmig	oboval		2
broad obovate	obovale large	breit verkehrt eiförmig	oboval ancha	Mantanghong	3
9. Leaf blade: hue of green color	Limbe: teinte de la couleur verte	Blattspreite: Ton der grünen Farbe	Limbo: matiz del color verde		
absent	absente	fehlend	ausente	Minowase Summer Cross Nr. 3	3
yellowish	jaunâtre	gelblich	amarillento	Rex	5
greyish	grisâtre	gräulich	grisáceo	Silverstar	7
10. Leaf blade: intensity of green color	Limbe: intensité de la couleur verte	Blattspreite: Intensität der Grünfärbung	Limbo: intensidad del color verde		
light	claire	hell	claro	Kaiser	3
medium	moyenne	mittel	medio	Mino early	5
dark	foncée	dunkel	oscuro	Houseking	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. Leaf blade: lobes (* (division to midrib) (+)	Limbe: lobes (division atteignant la nervure principale)	Blattspreite: Lappung (Teilung bis zur Mittelrippe)	Limbo: lóbulos (división hasta el nervio principal)		
absent	absents	fehlend	ausente	Rex, Wiela	1
present	présents	vorhanden	presente	Unus Treib	9
12. Leaf blade: number (* of lobes (as for 11)	Limbe: nombre de lobes (comme pour 11)	Blattspreite: Anzahl Lappen (wie unter 11)	Limbo: número de lóbulo (como para 11)		
very few	très petit	sehr gering	muy bajo	Ostergruß rosa 2	1
few	petit	gering	bajo	Unus Treib	3
medium	moyen	mittel	medio	De cinq semaines rose 3	5
many	grand	groß	alto	Noir long maraîcher	7
very many	très grand	sehr groß	muy alto	Mikura Cross	9
13. Leaf blade: size of terminal lobe	Limbe: taille du lobe terminal	Blattspreite: Größe des Endlappens	Limbo: tamaño del lóbulo terminal		
small	petit	klein	pequeño	Omny, Silverstar	3
medium	moyen	mittel	medio	Rose d'hiver de Chine, Unus Treib	5
large	grand	groß	grande		7
14. Leaf blade: depth of incisions of margin	Limbe: profondeur des découpures du bord	Blattspreite: Tiefe der Randeinschnitte	Limbo: profundidad de las incisiones del borde		
shallow	peu profondes	flach	poco profundas	Unus Treib	3
medium	moyennes	mittel	medias		5
deep	profondes	tief	profundas		7
15. Petiole: anthocyanin coloration	Pétiole: pigmentation anthocyanique	Blattstiel: Anthocyanfärbung	Peciolo: pigmentación antociánica		
absent	absente	fehlend	ausente	Noir gros rond d'hiver, Omny	1
present	présente	vorhanden	presente	Rose d'hiver de Chine, Violet de Gournay	9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. Radish: length (*)	Racine: longueur	Rübe: Länge	Raíz: longitud		
very short	très courte	sehr kurz	muy corta	Runder weißer	1
short	courte	kurz	corta	Jaune d'or oval	3
medium	moyenne	mittel	media	Noir gros long d'hiver	5
long	longue	lang	larga		7
very long	très longue	sehr lang	muy larga		9
17. Radish: thickness	Racine: épaisseur	Rübe: Dicke	Raíz: espesor		
thin	mince	dünn	delgada	Ostergruß rosa 2	3
medium	moyenne	mittel	media	Rex	5
thick	épaisse	dick	gruesa	Noir gros rond d'hiver	7
18. Radish: shape (*) (+)	Racine: forme	Rübe: Form	Raíz: forma		
transverse elliptic	elliptique transverse	quer elliptisch	elíptica transversal	Jumbo Scarlet	1
circular	ronde	rund	circular	Noir gros rond d'hiver	2
elliptic	elliptique	elliptisch	elíptica		3
narrow elliptic	elliptique étroite	schmal elliptisch	elíptica estrecha	Langer schwarzer Winter	4
obovate	obovale	verkehrt eiförmig	oboval	Münchner Bier, Jaune d'or ovale	5
rectangular	rectangulaire	rechteckig	rectangular	Noir long maraîcher, Tsukushi Spring Cross,	6
obtriangular	obtriangulaire	verkehrt dreieckig	obtriangular	Oval blanc de Munich	7
narrow obtriangular	obtriangulaire étroite	schmal verkehrt dreieckig	obtriangular estrecha	Rex	8
iciclical	en glaçon	eiszapfenförmig	en estalagmita	De cinq semaines rose 3, Minowase Summer Cross Nr. 3	9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. Radish: shape of (+) crown	Racine: forme de la partie supérieure	Rübe: Kopfform	Raíz: forma de la parte superior		
flat	aplatie	flach	aplanada	Minowase Summer Cross Nr. 3	1
rounded	arrondie	abgerundet	redondeada	Rex	2
conical	conique	konisch	cónica		3
20. Radish: shape of (+) base	Racine: forme de la base	Rübe: Form der Basis	Raíz: forma de la base		
narrow acute	aiguë étroite	schmal spitz	aguda angosta	Minowase Summer Cross Nr. 3	1
acute	aiguë	spitz	aguda	Münchner Bier	2
obtuse	obtuse	stumpf	obtusa	Tsukushi Spring Cross	3
rounded	arrondie	abgerundet	redondeada	Noir gros rond d'hiver	4
flat	plate	eben	plana	Jumbo Scarlet	5
21. Radish: color of (*) skin	Racine: couleur de l'épiderme	Rübe: Farbe der Haut	Raíz: color de la epidermis		
white	blanc	weiß	blanco	Rex	1
yellow	jaune	gelb	amarillo	Jaune d'or ovale	2
brown	brun	braun	marrón	Fridolin braun	3
pink	rose	rosa	rosa	De cinq semaines rose 3	4
red	rouge	rot	rojo	Belrosa	5
carmine	carmin	karmin	carmín	Ostergruß rosa 2	6
purple	pourpre	purpurn	púrpura		7
violet	violet	violett	violeta	Violet de Gournay	8
black	noir	schwarz	negro	Noir gros rond d'hiver	9

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
22. <u>White radish varieties only:</u> Radish: green color of shoulder	<u>Variétés à racine blanche seulement:</u> Racine: couleur verte du collet	<u>Nur weiße Rettichsorten:</u> Rübe: Grünfärbung des Kopfes	<u>Sólo variedades de raíz blanca:</u> Raíz: color verde del cuello		
absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Minowase Summer Cross Nr. 3	1
weak	faible	gering	débil		3
medium	moyenne	mittel	medio	Tsukushi Spring Cross	5
strong	forte	stark	fuerte	Münchner Bier	7
very strong	très forte	sehr stark	muy fuerte		9
23. <u>White radish varieties only:</u> Radish: anthocyanin coloration	<u>Variétés à racine blanche seulement:</u> Racine: pigmentation anthocyanique	<u>Nur weiße Rettichsorten:</u> Rübe: Anthocyanfärbung	<u>Sólo variedades de raíz blanca:</u> Raíz: pigmentación antocianica		
absent	absente	fehlend	ausente	Rex	1
present	présente	vorhanden	presente	Neckarruhm weiß	9
24. Radish: ridging of surface	Racine: annelé de la surface	Rübe: Ringelung der Oberfläche	Raíz: anillado de la superficie		
absent or very weak	absent ou très faible	fehlend oder sehr gering	ausente o muy débil	Minowase Summer Cross Nr. 3	1
weak	faible	gering	débil		3
medium	moyen	mittel	media	Unus Treib	5
strong	fort	stark	fuerte	Münchner Bier	7
very strong	très fort	sehr stark	muy fuerte		9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25. Radish: color of the flesh	Racine: couleur de la chair	Rübe: Farbe des Fleisches	Raíz: color de la pulpa		
translucent white	blanc vitreux	glasigweiß	blanco traslúcido	Minowase Summer Cross Nr. 3	1
opaque white	blanc mat	mattweiß	blanco opaco	Noir gros long d'hiver de Paris	2
green	vert	grün	verde	Green Meat	3
red	rouge	rot	rojo	Mantanghong	4
26. Time of harvest maturity (*)	Époque de maturité de récolte	Zeitpunkt der Erntereife	Fecha de madurez de cosecha		
early	précoce	früh	temprana	Rex	3
medium	moyenne	mittel	media		5
late	tardive	spät	tardía		7
27. Radish: tendency to become pithy (*)	Racine: tendance à se creuser	Rübe: Neigung zum Pelzigwerden	Raíz: tendencia a ahuecarse		
absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	South Pole, Runder schwarzer	1
weak	faible	gering	débil		3
medium	moyenne	mittel	media	Unus Treib	5
strong	forte	stark	fuerte		7
very strong	très forte	sehr stark	muy fuerte		9

VIII. Explanations on the Table of Characteristics

Ad. 3: Cotyledon: shape

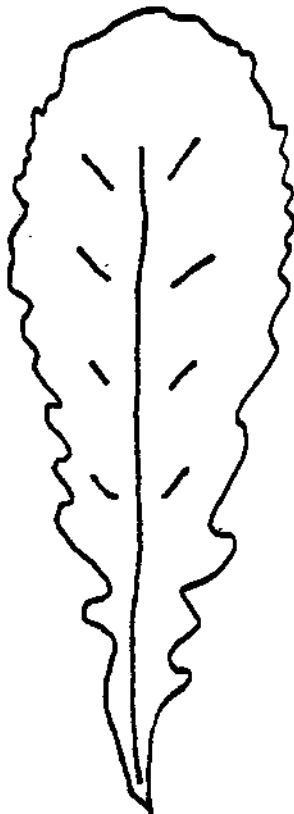


1
heart-shaped

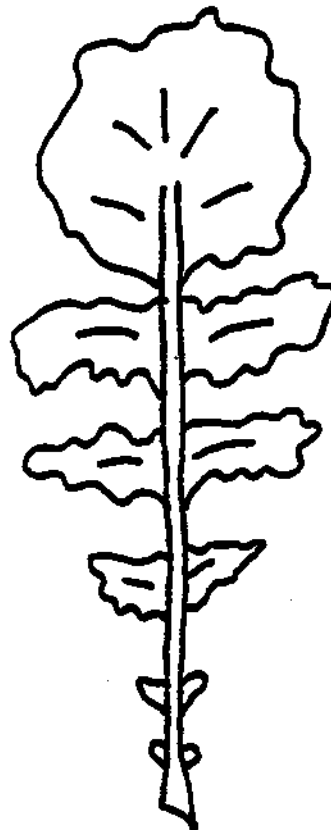


2
broad heart-shaped

Ad. 11: Leaf blade: lobes (division to midrib)



1
absent



9
present

Ad. 18: Radish: shape



1
transverse elliptic



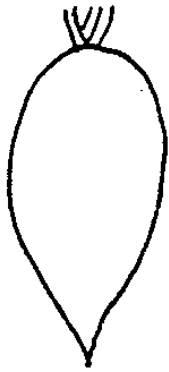
2
circular



3
elliptic



4
narrow elliptic



5
obovate



6
rectangular



7
obtriangular

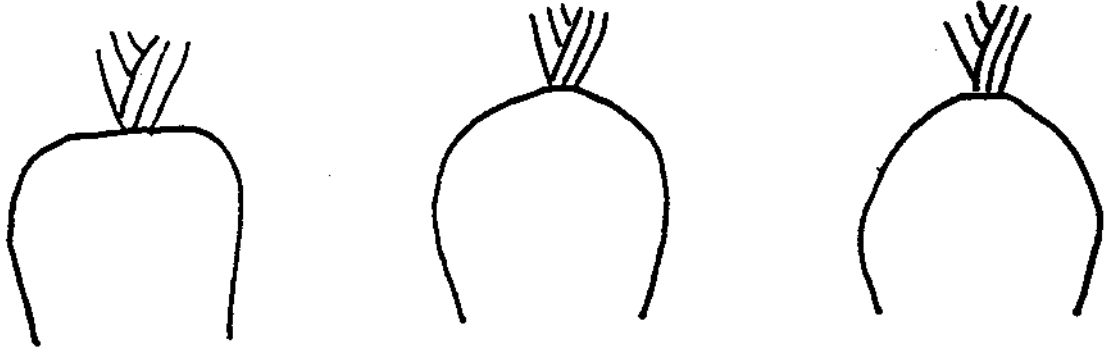


8
narrow obtriangular



9
icical

Ad. 19: Radish: shape of crown

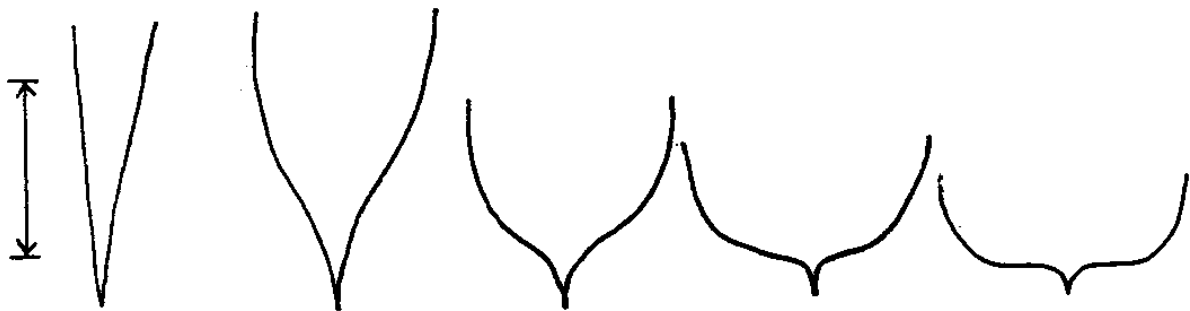


1
flat

2
rounded

3
conical

Ad. 20: Radish: shape of base



1
narrow acute

2
acute

3
obtuse

4
rounded

5
flat

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>Raphanus sativus</i> L. var. <i>niger</i> (Mill.) S. Kerner</p> <p>BLACK RADISH</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) 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
5.1 Ploidy (1)		
diploid	Unus Treib	2[]
tetraploid	Rex	4[]
5.2 Seedling: anthocyanin coloration of hypocotyl (2)		
absent	Minowase Summer Cross Nr. 3	1[]
present	Kaiser	9[]
5.3 Radish: length (16)		
very short	Runder weißer	1[]
short	Jaune d'or oval	3[]
medium	Noir gros long d'hiver	5[]
long		7[]
very long		9[]
5.4 Radish: shape (18)		
transverse elliptic	Jumbo Scarlet	1[]
circular	Noir gros rond d'hiver	2[]
elliptic		3[]
narrow elliptic	Langer schwarzer Winter	4[]
obovate	Jaune d'or ovale, Münchner Bier	5[]
rectangular	Noir long maraîcher, Tsukushi Spring Cross	6[]
obtriangular	Oval blanc de Munich	7[]
narrow obtriangular	Rex	8[]
iciclical	De cinq semaines rose 3, Minowase Summer Cross Nr. 3	9[]

Characteristics	Example Varieties	Note
5.5 Radish: color of skin (21)		
white	Rex	1[]
yellow	Jaune d'or ovale	2[]
brown	Fridolin braun	3[]
pink	De cinq semaines rose 3	4[]
red	Belrosa	5[]
carmine	Ostergruß rosa 2	6[]
purple		7[]
violet	Violet de Gournay	8[]
black	Noir gros rond d'hiver	9[]

6. Similar varieties and differences between these varieties

Denomination of similar variety	Characteristic in which the similar variety is different ⁰⁾	State of expression of similar variety	State of expression of candidate variety

⁰⁾ 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

7.2.1 Use:

- in glasshouse []
- in the open: spring []
- summer []
- autumn []
- winter []

7.2.2 Other conditions

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.

[End of document]