

UPOV

TG/CUC_MOS(proj.1) Rev.

ORIGINAL: English

DATE: 2005-06-02

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

BUTTERNUT

UPOV Code: CUCUR_MOS

Cucurbita moschata Duch.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by experts from France**to be considered by the**Technical Working Party for Vegetables (TWV) at its thirty-ninth session,
to be held in Nitra, Slovakia, from June 6 to 10, 2005*

Alternative Names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Cucurbita moschata</i> Duch.	Butternut, Butternut Squash, Cheese Pumpkin, China Squash, Cushaw, Golden Cushaw, Musky Gourd, Pumpkin, Winter Crookneck Squash	Citrouille, Courge musquée, Courge noix de beurre	Bisamkürbis, Moschuskürbis	Ayote, Calabaza moscada, Calabaza pellejo, Chicamita, Lacayote, Sequaloa, Zapallo

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

TG/155/3: Pumpkin, 96-10-18

TG/119/4: Vegetable Marrow, Squash, 2002-04-17

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Cucurbita moschata* Duch.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it 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 and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of seed.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

200 g or 1,550 seeds

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.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 *Number of Growing Cycles*

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

3.2 *Testing Place*

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness".

3.3 *Conditions for Conducting the Examination*

3.3.1 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.

3.3.2 The recommended method of observing the characteristic is indicated by the following key in the second column of the Table of Characteristics:

MG: single measurement of a group of plants or parts of plants

MS: measurement of a number of individual plants or parts of plants

VG: visual assessment by a single observation of a group of plants or parts of plants

VS: visual assessment by observation of individual plants or parts of plants

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 20 plants, which should be divided between two or more replicates.

3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 *Number of Plants / Parts of Plants to be Examined*

Unless otherwise indicated, all observations on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observations made on all plants in the test.

3.6 *Additional Tests*

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 *Distinctness*

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.2 *Uniformity*

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.1 Cross-pollinated varieties

For the assessment of uniformity of cross-pollinated varieties, a population standard of 2 % and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 20 plants, 2 off-types are allowed.

4.2.2 Hybrid varieties

For the assessment of uniformity of hybrid varieties, a population standard of 1 % and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 20 plants, 1 off-type is allowed.

4.3 *Stability*

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new seed stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

- a) Plant: growth habit (characteristic 2)
- b) Fruit: length (characteristic 22)
- c) Fruit: maximum diameter (characteristic 23)
- d) Fruit: shape in longitudinal section (characteristic 25)
- e) Fruit: main color of skin (characteristic 38)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 *States of Expression and Corresponding Notes*

States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.3 *Types of Expression*

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 *Example Varieties*

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 *Legend*

(*) Asterisked characteristic – see Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3

QN: Quantitative characteristic – see Chapter 6.3

PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG: single measurement of a group of plants or parts of plants – see Chapter 3.3.1

MS: measurement of a number of individual plants or parts of plants – see Chapter 3.3.1

VG: visual assessment by a single observation of a group of plants or parts of plants – Chapter 3.3.1

VS: visual assessment by observation of individual plants or parts of plants – see Chapter 3.3.1

(a)-(c) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8.2

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

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
1.	VG	Seedling: shape of cotyledons	Plantule : forme des cotylédons			
PQ	narrow elliptic	elliptique étroit				1
	elliptic	elliptique				2
	broad elliptic	elliptique large				3
	circular	circulaire				4
	obovate	obovale				5
2.	VG	Plant: growth habit	Plante: type de croissance			
(*)						
PQ	bushy	buissonnante				1
	semi-trailing	semi-coureuse				2
	trailing	coureuse			Butternut	3
3.	VG	Plant: branching	Plante: drageon			
(*)						
QL	absent	absent				1
	present	présent				9
4.	VS	Stem: color	Tige : couleur			
(*)						
PQ	light green	vert clair				1
	light and dark green	vert clair et vert foncé				2
	dark green	vert foncé				3
5.	VG	Leaf blade: size	Limbe : taille			
(*)						
QN	(a) very small	très petite				1
	small	petite			Futsu black rinded	3
	medium	moyenne			Muscade	5
	large	grande			Longue de Nice	7
	very large	très grande				9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6. VG	Leaf blade: incisions	Limbe : incisions				
(*)						
QN	(a) absent or very shallow	absentes ou très peu profondes			Ponca	1
	shallow	peu profondes			Longue de Nice	3
	medium	moyennement profondes				5
	deep	profondes				7
	very deep	très profondes				9
7. VG	Leaf blade: intensity of green color of upper surface	Limbe : intensité de la couleur verte de la face supérieure				
QN	(a) light	faible			Ponca	3
	medium	moyenne			Longue de Nice	5
	dark	forte			Futsu black rinded	7
8. VG	Leaf blade: silvery patches	Limbe : taches argentées				
(*)						
QL	(a) absent	absentes			Ponca	1
	present	présentes			Longue de Nice	9
9. VG	Leaf blade: relative area covered by silvery patches	Limbe : surface couverte par les taches argentées				
QN	(a) very small	très petite				1
	small	petite				3
	medium	moyenne				5
	large	grande				7
	very large	très grande				9
10. VS	Petiole: length	Pétiole : longueur				
QN	short	court			Futsu black rinded	3
	medium	moyen			Ponca	5
	long	long			Longue de Nice	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
11.	VS	Petiole: diameter	Pétiole : diamètre			
QN	small	petit			Futsu black rinded	3
	medium	moyen			Longue de Nice	5
	large	grand				7
12.	VS	Female flower: length of sepal	Fleur femelle : longueur du sépale			
QN	short	court				3
	medium	moyen			Sucrine du Berry	5
	long	long			Longue de Nice	7
13. (*)	VS	Female flower: ring on inner side of corolla	Fleur femelle : anneau intérieur de la corolle			
QL	absent	absent				1
	present	présent				9
14.	VS	Female flower: color of ring on inner side of corolla	Fleur femelle : couleur de l'anneau intérieur de la corolle			
PQ	yellow	jaune				1
	yellow and green	jaune et vert				2
	green	vert				3
15.	VS	Only varieties with ring on inner side of corolla: Female flower: intensity of color of ring on inner side of corolla	Seulement les variétés ayant un anneau intérieur de la corolle : Fleur femelle : intensité de la couleur de l'anneau intérieur de la corolle			
QN	weak	faible				3
	medium	moyenne				5
	strong	forte				7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
16.	VS	Male flower: length of sepal	Fleur mâle : longueur du sépale			
QN	very short	très court				1
	short	court			Futsu black rinded	3
	medium	moyen			Sucrine du Berry	5
	long	long			Longue de Nice	7
	very long	très long			Pleine de Naples	9
17.	VS	Male flower: ring on inner side of corolla	Fleur mâle : anneau intérieur de la corolle			
(*)						
QL	absent	absent				1
	present	présent				9
18.	VS	Male flower: color of ring on inner side of corolla	Fleur mâle : couleur de l'anneau intérieur de la corolle			
PQ	yellow	jaune				1
	yellow and green	jaune et vert				2
	green	vert				3
19.	VS	Only varieties with ring at inner side of corolla: Male flower: intensity of color of ring at inner side of corolla	Seulement les variétés ayant un anneau intérieur de la corolle : Fleur mâle : intensité de la couleur de l'anneau intérieur de la corolle			
QN	light	faible				3
	medium	moyenne				5
	dark	forte				7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
20. VS (*)	Peduncle: length	Pédoncule : longueur				
QN (b)	short	court			Ponca	3
	medium	moyen			Longue de Nice	5
	long	long			Futsu black rinded	7
21. VS (*)	Peduncle: diameter	Pédoncule : diamètre				
QN (b)	small	petit			Futsu black rinded	3
	medium	moyen			Longue de Nice	5
	large	grand			Muscade	7
22. VS (*)	Fruit: length	Fruit : longueur				
QN (b)	very short	très court				1
	short	court			Ponca	3
	medium	moyen			Muscade	5
	long	long				7
	very long	très long			Longue de Nice Trombolino d'Albenga	9
23. VS (*)	Fruit: maximum diameter	Fruit : diamètre maximal				
QN (b)	very small	très petit			Trombolino d'Albenga	1
	small	petit			Ponca	3
	medium	moyen			Pleine de Naples	5
	large	grand			Muscade	7
	very large	très grand				9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
24. MG	Fruit : ratio length/ maximum diameter	Fruit : rapport longueur / diamètre maximal				
QN (b)	very small	très petit			Muscade	1
	small	petit			Futsu blacked rinded	3
	medium	moyen				5
	large	grand			Butternut	7
	very large	très grand			Longue de Nice	9
25. VS (* (+)	Fruit: shape in longitudinal section	Fruit : forme en section longitudinale				
PQ (b)	transverse broad elliptical	elliptique transversale large			Muscade	1
	transverse elliptical	elliptique transversale			Tancheese	2
	globular	globuleuse				3
	ovate	ovoïde				4
	quadrangular	quadrangulaire			Hayato	5
	trapezoid	trapézoïde			Fagtoong	6
	pear shaped	pyri forme			Sucrine du Berry	7
	club shaped	en massue			Longue de Nice	8
	cylindrical	cylindrique			Ponca	9
26. VS	Fruit: neck	Fruit : col				
QL (b)	absent	absent			Muscade	1
	present	présent			Longue de Nice	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
27.	VS	Only varieties with Fruit neck present: Fruit: length of neck	Seulement pour les variétés avec un col : Fruit : longueur du col				
QN	(b)	very short	très court				1
		short	court			Butternut	3
		medium	moyen				5
		long	long			Longue de Nice	7
		very long	très long			Trombolino d'Albenga	9
28.	VS	Only varieties with Fruit neck present: Fruit: curving of neck	Seulement pour les variétés avec un col : Fruit : courbure du col				
PQ	(b)	absent	absent			Butternut	1
		present	présent			Trombolino d'Albenga	9
29.	VS	Fruit : shape of base	Fruit : forme à la base				
(+)							
PQ	(b)	depressed	déprimé			Muscade	1
		flat	plan				2
		raised	protubérant			Trombolino d'Albenga	3
30.	VS	Fruit: depth of depression at base	Fruit : profondeur de la dépression à la base				
(*)							
(+)							
QN	(b)	shallow	faible			Longue de Nice	3
		medium	moyenne			Tancheese	5
		deep	forte				7
31.	VS	Fruit: shape of apical part	Fruit : forme de la partie apicale				
(*)							
(+)							
PQ	(b)	depressed	déprimé			Muscade	1
		flat	plan			Sucrine du Berry	2
		raised	protubérant			Longue de Nice	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
32.	VS	Fruit: grooves	Fruit : cannelures			
(*)						
QL	(b)	absent	absent		Sucrine du Berry	1
		present	présent		Muscade	9
33.	VS	<u>Only varieties with Fruit grooves present: Fruit : distance between grooves</u>	<u>Seulement pour les variétés avec fruits avec des cannelures : Fruit : distance entre les cannelures</u>			
QN	(b)	short	court		Futsu black rinded	3
		medium	moyen		Muscade	5
		long	long			7
34.	VS	<u>Only varieties with Fruit grooves present: Fruit: depth of grooves</u>	<u>Seulement pour les variétés avec fruits avec des cannelures : Fruit: profondeur des cannelures</u>			
QN	(b)	shallow	peu profonde			3
		medium	moyennement profonde		Futsu black rinded	5
		deep	profonde		Muscade	7
35.	VS	Fruit: intensity of green color of skin before physiological maturity	Fruit : intensité de la couleur verte de l'épiderme avant maturité physiologique			
(*)						
QN	(b)	light	faible		Butternut	3
		medium	moyenne			5
		dark	forte		Futsu black rinded	7
36.	VS	Fruit: green marbling	Fruit : marbrure verte			
QL	(b)	absent	absente			1
		present	présente			9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
37.	VS	Fruit: intensity of green marbling	Fruit: intensité de la marbrure verte				
QN	(b)	weak	faible				3
		medium	moyenne				5
		strong	forte				7
38.	VS	Fruit: main color of skin	Fruit : couleur principale de l'épiderme				
(*)							
PQ	(b)	beige	beige			Ponca	1
		yellow	jaune				2
		ochre	ocre			Muscade	3
		brown	marron				4
		green	verte			Longue de Nice	5
39.	VS	Fruit: intensity of main color of skin	Fruit : intensité de la couleur principale de l'épiderme				
QN	(b)	light	claire			Ponca	3
		medium	moyenne			Longue de Nice	5
		dark	foncée			Muscade	7
40.	VS	Fruit: wax on skin	Fruit : pruine sur l'épiderme				
QL	(c)	absent	absente				1
		present	présente				9
41.	VS	Fruit: warts on skin	Fruit : verrues sur l'épiderme				
(*)							
QL	(c)	absent	absent			Butternut	1
		present	présent			Futsu black rinded	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
42.	VS	Fruit: number of warts on skin	Fruit : nombre de verrues sur l'épiderme			
QN	(c)	few	peu nombreuses			3
		medium	moyennement nombreuses			5
		many	nombreuses		Futsu black rinded	7
43.	VS	Fruit: thickness of skin	Fruit : épaisseur de l'épiderme			
QN	(c)	thin	fine		Ponca	3
		medium	moyenne		Muscade	5
		thick	épaisse			7
44.	VS	Fruit: main color of flesh	Fruit : couleur principale de la chair			
(*)						
PQ	(c)	cream	crème			1
		yellow	jaune		Futsu black rinded	2
		orange	orange		Ponca	3
		pink	rose			4
		red	rouge		Tancheese	5
		green	verte			6
		grey green	vert gris			7
		grey	grise			8
45.	VS	Fruit: intensity of main color of flesh	Fruit : intensité de la couleur principale de la chair			
QN	(c)	light	claire		Longue de Nice	3
		medium	moyenne		Sucrine du Berry	5
		dark	foncée		Muscade	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
46.	VS	Fruit: thickness of flesh (at level of the seed cavity)	Fruit : épaisseur de la chair (au niveau de la cavité grainière)			
QN	(c)	thin	fine		Pleine de Naples	3
		medium	moyenne		Longue de Nice	5
		thick	épaisse		Muscade	7
47.	VS	Fruit: size of flower scar	Fruit : taille de la cicatrice florale			
QN	(c)	small	petite		Muscade	3
		medium	moyenne		Longue de Nice	5
		large	grande			7
48.	VS	Seed: size	Graine : taille			
QN	(c)	small	petite		Futsu black rinded	3
		medium	moyenne		Muscade	5
		large	grande			7
49.	VS	Seed: ratio width/length	Graine : ratio largeur/longueur			
QL	(c)	small	petit			1
		medium	moyen		Longue de Nice	2
		large	grand		Muscade	3
50.	VS	Seed: color	Graine : couleur			
PQ	(c)	whitish	blanchâtre		Ponca	1
		yellowish	jaunâtre			2
		brownish	brunâtre		Longue de Nice	3
51.	MG	Seed: weight of 1000 dry seeds (*)	Graine : poids de 1000 grains secs			
QN		low	faible		Futsu black rinded	3
		medium	moyen			5
		high	élevé		Muscade	7

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

- (a) All observations on the leaf should be made on fully developed leaves, when the first fruit is fully developed.
- (b) Observations realized on fully developed fruit, before physiological maturity.
- (c) Observations realized on fruit at physiological maturity.

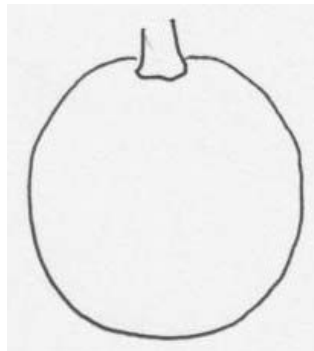
8.2 Explanations for individual characteristics

Ad. 25: Fruit: shape in longitudinal section (new drawings to be added)



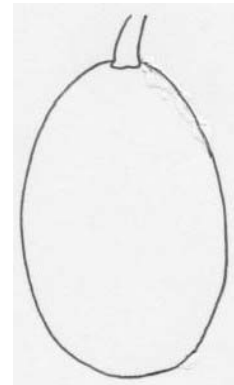
1

transverse elliptical



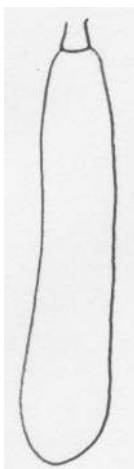
2

globular



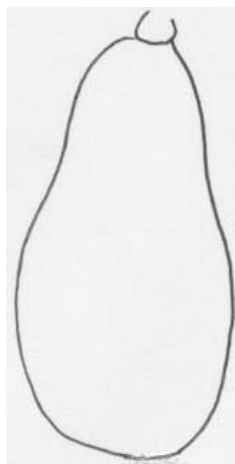
3

ovate



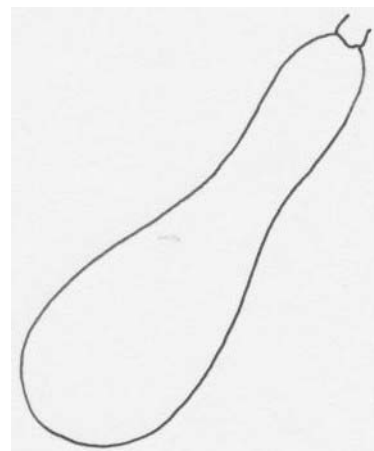
4

cylindrical



5

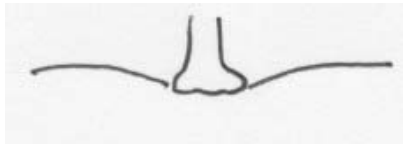
pear shaped



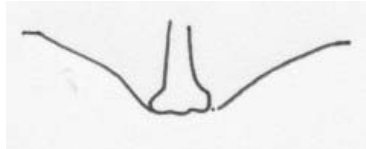
6

club shaped

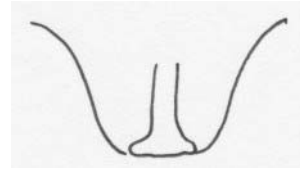
Ad. 30: Fruit: intensity of depression at base



3
weak



5
medium



7
strong

Ad. 31: Fruit: shape of apical part



1
depressed



2
flat



3
raised

9. Literature

Chaux, C., Foury, C., 1994: Productions légumières – Tome 3 Légumineuses Potagères
Légumes fruits. Lavoisier TEC & DOC, Paris, FR, pp. 361 - 384

Prades, J. B., Prades, N., Renaud, V., 1995: Le grand livre des Courges. Rustica Edition.
Paris, FR, 183 pp.

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights		
1. Subject of the Technical Questionnaire		
1.1 Botanical name	<input type="text" value="Cucurbita moschata Duch."/>	
1.2 Common name	<input type="text" value="Butternut"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
Telephone No.	<input type="text"/>	
Fax No.	<input type="text"/>	
E-mail address	<input type="text"/>	
Breeder (if different from applicant)	<input type="text"/>	
3. Proposed denomination and breeder's reference		
Proposed denomination (if available)	<input type="text"/>	
Breeder's reference	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>#4. Information on the breeding scheme and propagation of the variety</p> <p>4.1 Breeding scheme</p> <p>Variety resulting from:</p> <p>4.1.1 Crossing</p> <p>(a) controlled cross [] (please state parent varieties)</p> <p>(b) partially known cross [] (please state known parent variety(ies))</p> <p>(c) unknown cross []</p> <p>4.1.2 Mutation [] (please state parent variety)</p> <p>4.1.3 Discovery and development [] (please state where and when discovered and how developed)</p> <p>4.1.4 Other []” (please provide details)”</p>		

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>4.2 Method of propagating the variety</p> <p>4.2.1 Seed-propagated varieties</p> <p>(a) Self-pollination []</p> <p>(b) Cross-pollination (i) population [] (ii) synthetic variety []</p> <p>(c) Hybrid []</p> <p>(d) Other [] (please provide details)</p> <p>4.2.2 Other [] (please provide details)</p>		
<p>In the case of hybrid varieties the production scheme for the hybrid should be provided on a separate sheet. This should provide details of all the parent lines required for propagating the hybrid e.g.</p> <p><i>Single Hybrid</i></p> <p>(... female parent ...) x (... male parent ...)</p> <p><i>Three-Way Hybrid</i></p> <p>(... female line ...) x (... male line ...)</p> <p>=> single hybrid used as female parent x (... male parent ...)</p> <p>and should identify in particular:</p> <p>(a) any male sterile lines (b) maintenance system of male sterile lines.</p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
<p>5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).</p>			
Characteristics	Example Varieties	Note	
<p>5.1 Plant: growth habit (2)</p>			
bushy		1 [...]	
semi-trailing		2 [...]	
trailing	Butternut	3 [...]	
<p>5.2 Fruit: length (22)</p>			
very short		1 [...]	
short	Ponca	3 [...]	
medium	Muscade	5 [...]	
long		7 [...]	
very long	Longue de Nice Trombolino d'Albenga	9 [...]	
<p>5.3 Fruit: maximum diameter (23)</p>			
very small	Trombolino d'Albenga	1 [...]	
small	Ponca	3 [...]	
medium	Pleine de Naples	5 [...]	
large	Muscade	7 [...]	
very large		9 [...]	

TECHNICAL QUESTIONNAIRE		Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note	
5.4 Fruit: shape in longitudinal section (25)			
transverse broad elliptical	Muscade	1[...]	
transverse elliptical	Tancheese	2[...]	
globular		3[...]	
ovate		4[...]	
quadrangular	Hayato	5[...]	
trapezoid	Fagtoong	6[...]	
pear shaped	Sucrine du Berry	7[...]	
club shaped	Longue de Nice	8[...]	
cylindrical	Ponca	9[...]	
5.5 Fruit: neck (26)			
absent	Muscade	1 [...]	
present	Longue de Nice	9 [...]	
5.6 <u>Only varieties with Fruit neck present:</u> Fruit: length of neck (27)			
very short		1[...]	
short	Butternut	3[...]	
medium		5[...]	
long	Longue de Nice	7[...]	
very long	Trombolino d'Albenga	9[...]	
5.7 Fruit: grooves (32)			
absent	Sucrine du Berry	1 [...]	
present	Muscade	9 [...]	

TECHNICAL QUESTIONNAIRE		Page {x} of {y}	Reference Number:
Characteristics		Example Varieties	Note
5.8 Fruit: main color of skin			
(38)			
beige		Ponca	1 [...]
yellow			2 [...]
ochre		Muscade	3 [...]
brown			4 [...]
green		Longue de Nice	5 [...]
5.9 Fruit: warts on skin			
(41)			
absent		Butternut	1 [...]
present		Futsu black rinded	9 [...]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
<p>6. Similar varieties and differences from these varieties</p> <p><i>Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.</i></p>			
Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Fruit: main color of skin</i>	<i>yellow</i>	<i>orange</i>
<p>Comments:</p>			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>#7. Additional information which may help in the examination of the variety</p> <p>7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?</p> <p>Yes [] No []</p> <p>(If yes, please provide details)</p> <p>7.2 Are there any special conditions for growing the variety or conducting the examination?</p> <p>Yes [] No []</p> <p>(If yes, please provide details)</p> <p>7.3 Other information</p> <p>A representative color photograph of the variety should accompany the Technical Questionnaire.</p>		
<p>8. Authorization for release</p> <p>(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?</p> <p>Yes [] No []</p> <p>(b) Has such authorization been obtained?</p> <p>Yes [] No []</p> <p>If the answer to (b) is yes, please attach a copy of the authorization.</p>		

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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9. Information on plant material to be examined or submitted for examination.

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a) Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes []	No []
(b) Chemical treatment (e.g. growth retardant, pesticide)	Yes []	No []
(c) Tissue culture	Yes []	No []
(d) Other factors	Yes []	No []

Please provide details for where you have indicated "yes".

.....

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes []

(please provide details as specified by the Authority)

No []

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name			
Signature		Date	