



TG/234/1

ORIGINAL: English

DATE: 2007-03-28

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**BUTTERNUT, BUTTERNUT SQUASH, CHEESE PUMPKIN,
CHINA SQUASH, CUSHAW, GOLDEN CUSHAW,
MUSKY GOURD, PUMPKIN, WINTER CROOKNECK SQUASH**

UPOV Code: CUCUR_MOS

Cucurbita moschata Duch.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

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	Moschuskürbis, Bisamkürbis	Ayote, Calabaza de Castilla, 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.

Other associated UPOV documents: TG/155: *Cucurbita maxima* Duch. / Pumpkin / Giraumon, Potiron / Riesenkürbis / Calabaza, Zapallo
TG/119: *Cucurbita pepo* L. / Vegetable Marrow, Squash / Courgette / Gartenkürbis, Zucchini / Calabacín

* 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.]

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
1. SUBJECT OF THESE TEST GUIDELINES.....	3
2. MATERIAL REQUIRED	3
3. METHOD OF EXAMINATION.....	3
3.1 Number of Growing Cycles	3
3.2 Testing Place	3
3.3 Conditions for Conducting the Examination.....	3
3.4 Test Design	4
3.5 Number of Plants / Parts of Plants to be Examined.....	4
3.6 Additional Tests	4
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY	4
4.1 Distinctness	4
4.2 Uniformity.....	5
4.3 Stability	5
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL.....	5
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS	6
6.1 Categories of Characteristics.....	6
6.2 States of Expression and Corresponding Notes.....	6
6.3 Types of Expression.....	6
6.4 Example Varieties	6
6.5 Legend.....	7
7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES.....	8
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS	16
8.1 Explanations covering several characteristics	16
8.2 Explanations for individual characteristics	16
8.3 Synonyms of example varieties.....	18
9. LITERATURE	19
10. TECHNICAL QUESTIONNAIRE	20

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 1,500 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*

4.2.1 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:

4.2.2 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.3 For the assessment of uniformity of hybrid varieties and inbred lines, 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: length of main stem (characteristic 2)
- (b) Fruit: length (characteristic 14)
- (c) Fruit: diameter (characteristic 15)
- (d) Fruit: shape in longitudinal section (characteristic 18)
- (e) Fruit: grooves (characteristic 24)
- (f) Fruit: main color of skin (characteristic 28)
- (g) Fruit: warts (characteristic 31)

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. A table of synonyms of example varieties is provided in Chapter 8.3.

6.5 *Legend*

(*) Asterisk 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, MS, VG, VS: See Chapter 3.3.2

(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/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
1.	VG	Cotyledon: ratio width/length	Cotyledon : rapport largeur/longueur	Keimblatt: Verhältnis Breite/Länge	Cotiledón: relación anchura/longitud		
QN		small	petit	klein	pequeña	Carre, Waltham	3
		medium	moyen	mittel	media	Sunset, Zenith	5
		large	grand	groß	grande		7
2.	VG	Plant: length of main stem	Plante: longueur de la tige principale	Pflanze: Länge des Haupttriebs	Planta: longitud del tallo principal		
QN	(a)	short	courte	kurz	corta		3
		medium	moyenne	mittel	media	Butterbush	5
		long	longue	lang	larga	Ponca, Nippon, Nugget, Sunset	7
3.	VG	Leaf blade: size	Limbe: taille	Blattspreite: Größe	Limbo: tamaño		
QN	(a)	small	petit	klein	pequeño	Futsu Kurokawa	3
		medium	moyen	mittel	medio	Muscade	5
		large	grand	groß	grande		7
4.	VG	Leaf blade: margin	Limbe : bord	Blattspreite: Rand	Limbo: margen		
QN	(a)	entire or very weakly incised	entier ou très faiblement incisé	ganzrandig oder sehr gering eingeschnitten	incisiones nulas o muy leves	Ponca	1
		weakly incised	faiblement incisé	gering eingeschnitten	incisiones leves	Longue de Nice	2
		moderately or strongly incised	moyennement ou fortement incisé	mäßig oder stark eingeschnitten	incisiones moderadas o profundas		3
5.	VG	Leaf blade: intensity of green color of upper side	Limbe: intensité de la couleur verte de la face supérieure	Blattspreite: Intensität der Grünfärbung der Oberseite	Limbo: intensidad del color verde de la cara superior		
QN	(a)	light	faible	hell	clara	Ponca	3
		medium	moyenne	mittel	media	Longue de Nice	5
		dark	forte	dunkel	oscura	Futsu Kurokawa	7

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6.	VG	Leaf blade: silver patches	Limbe: taches argentées	Blattspreite: Silberflecken	Limbo: manchas plateadas	
QL	(a)	absent	absentes	fehlend	ausentes	Ponca 1
		present	présentes	vorhanden	presentes	Longue de Nice 9
7.	VG	Petiole: length	Pétiole: longueur	Blattstiel: Länge	Pecíolo: longitud	
QN		short	court	kurz	corta	Futsu Kurokawa 3
	(a)	medium	moyen	mittel	media	Ponca 5
		long	long	lang	larga	Longue de Nice 7
8.	VG	Petiole: diameter	Pétiole: diamètre	Blattstiel: Durchmesser	Pecíolo: diámetro	
QN	(a)	small	petit	klein	pequeño	Futsu Kurokawa 3
		medium	moyen	mittel	medio	Longue de Nice 5
		large	grand	groß	grande	7
9.	VG	Female flower: length of sepal	Fleur femelle: longueur du sépale	Weibliche Blüte: Länge des Kelchblattes	Flor femenina: longitud del sépalo	
QN		short	court	kurz	corto	3
		medium	moyen	mittel	medio	Sucrine du Berry 5
		long	long	lang	largo	Longue de Nice 7
10.	VG	Male flower: length of sepal	Fleur mâle: longueur du sépale	Männliche Blüte: Länge des Kelchblattes	Flor masculina: longitud del sépalo	
QN		short	court	kurz	corto	Futsu Kurokawa 3
		medium	moyen	mittel	medio	Sucrine du Berry 5
		long	long	lang	largo	Longue de Nice 7
		very long	très long	sehr lang	muy largo	Pleine de Naples 9
11.	VG	Peduncle: length	Pédoncule: longueur	Blütenstiel: Länge	Pedúnculo: longitud	
QN	(b)	short	court	kurz	corto	Ponca 3
		medium	moyen	mittel	medio	Futsu Kurokawa, Longue de Nice 5
		long	long	lang	largo	7

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
12. VG	Peduncle: diameter	Pédoncule: diamètre	Blütenstiel: Durchmesser	Pedúnculo: diámetro		
QN (b)	small	petit	klein	pequeño	Futsu Kurokawa	3
	medium	moyen	mittel	medio	Longue de Nice	5
	large	grand	groß	grande	Muscade	7
13. VG (*)	Fruit: intensity of green color of skin	Fruit: intensité de la couleur verte de l'épiderme	Frucht: Intensität der Grünfärbung der Schale	Fruto: intensidad del color verde de la epidermis		
QN (b)	very light	très faible	sehr hell	muy claro		1
	light	faible	hell	claro	Ponca, Tancheese	3
	medium	moyenne	mittel	medio		5
	dark	foncée	dunkel	oscuro	Futsu Kurokawa	7
14. MG / VG (*)	Fruit: length	Fruit: longueur	Frucht: Länge	Fruto: longitud		
QN (b)	very short	très court	sehr kurz	muy corto		1
	short	court	kurz	corto	Ponca	3
	medium	moyen	mittel	medio	Muscade	5
	long	long	lang	largo	Aegean Gold	7
	very long	très long	sehr lang	muy largo	Longue de Nice, Trombolino d'Albenga	9
15. MG / VG (*) (+)	Fruit: diameter	Fruit: diamètre maximal	Frucht: Durchmesser	Fruto: diámetro		
QN (b)	small	petit	klein	pequeño	Ponca	3
	medium	moyen	mittel	medio	Pleine de Naples	5
	large	grand	groß	grande	Muscade	7

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
16.	MG / VG	Fruit: ratio length/ diameter	Fruit: rapport longueur / diamètre maximal	Frucht: Verhältnis Länge/Durchmesser	Fruto: relación longitud/diámetro		
QN	(b)	very small	très petit	sehr klein	muy pequeña	Muscade	1
		small	petit	klein	pequeña	Futsu Kurokawa	3
		medium	moyen	mittel	media		5
		large	grand	groß	grande	Ponca	7
		very large	très grand	sehr groß	muy grande	Longue de Nice	9
17.	VG	Fruit: position of broadest part	Fruit: position du diamètre maximum	Frucht: Position der breitesten Stelle	Fruto: posición del diámetro máximo		
QN	(b)	toward stem end	du côté de la tige	zum Stielende hin	hacia la base		1
		at middle	au milieu	in der Mitte	en el medio	Muscade	2
		toward blossom end	du côté de l'apex	zum apikalen Teil hin	hacia el ápice	Longue de Nice	3
18.	VG	Fruit: shape in longitudinal section	Fruit: forme en section longitudinale	Frucht: Form im Längsschnitt	Fruto: forma en sección longitudinal		
PQ	(b)	transverse broad elliptic	elliptique transversale large	quer breit elliptisch	elíptica transversal ancha	Muscade	1
		transverse medium elliptic	elliptique transversale moyenne	mittel querelliptisch	elíptica transversal media	Tancheese, Nippon	2
		round	arrondi	rund	redonda	Buckskin	3
		ovate	ovoïde	eiförmig	oval		4
		quadrangular	quadrangulaire	viereckig	cuadrangular	Hayato	5
		trapezoidal	trapézoïde	trapezförmig	trapezoidal	Fagtoong	6
		pear shaped	piriforme	birnenförmig	periforme	Sucrine du Berry, Nugget	7
		club shaped	en massue	keulenförmig	claviforme	Longue de Nice, Trombolino d'Albenga	8
		cylindrical	cylindrique	zylindrisch	cilíndrica	Ponca	9

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
19.	VG	Fruit: presence of neck	Fruit : présence de col	Frucht: Vorhandensein des Halses	Fruto: presencia de cuello	
QN	(b)	absent or very weak	absent ou très faible	fehlend oder sehr gering	ausente o muy débil	Futsu Kurokawa, Sucrine du Berry 1
		weak	faible	gering	débil	Ultra butternut 2
		medium or strong	moyen ou fort	mittel oder stark	medio o fuerte	Trombolino 3
20.		Fruit: length of neck	Fruit : longueur du col	Frucht: Länge des Halses	Fruto: longitud del cuello	
QN	(b)	short	court	kurz	corto	Sucrine du Berry 3
		medium	moyen	mittel	medio	Ultra Butternut 5
		long	long	lang	largo	Longue de Nice, Trombolino 7
21.	VG	Fruit: curving (longitudinal axis)	Fruit : courbure (axe longitudinal)	Frucht: Krümmung (Längsachse)	Fruto: curvatura (eje longitudinal)	
QN	(b)	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	1
		weak	faible	gering	débil	Ponca 3
		medium	moyenne	mittel	media	Longue de Nice 5
		strong	forte	stark	fuerte	7
		very strong	très forte	sehr stark	muy fuerte	Trombolino d'Albenga 9
22.	VG	Fruit: profile at stem end	Fruit : profil à la base	Frucht: Profil am Stielende	Fruto: perfil en la base	
QN	(b)	raised	en relief	vorgewölbt	protuberante	Trombolino d'Albenda 1
		flat	plan	flach	plano	Sucrine du Berry 2
		slightly depressed	légèrement creux	leicht eingesenkt	ligeramente deprimido	Tancheese 3
		moderately depressed	modérément déprimé	mäßig eingesenkt	moderadamente deprimido	Futsu Kurokawa 4
		strongly depressed	très creux	stark eingesenkt	fuertemente deprimido	Muscade 5

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
23. VG (*) (+)	Fruit: profile at blossom end	Fruit : profil au sommet	Frucht: Profil am apikalen Teil	Fruto: perfil en el ápice		
QN	(b) depressed	déprimé	eingesenkt	deprimido	Muscade	1
	flat	plan	flach	plano	Sucrine du Berry	2
	raised	protubérant	vorgewölbt	elevado	Trombolino d'Albenga	3
24. VG (*)	Fruit: grooves	Fruit: cannelures	Frucht: Furchen	Fruto: surcos		
QL	(b) absent	absentes	fehlend	ausentes	Sucrine du Berry	1
	présent	présentes	vorhanden	presentes	Muscade	9
25. VG	Fruit: distance between grooves	Fruit : distance entre les cannelures	Frucht: Abstand zwischen den Furchen	Fruto: distancia entre los surcos		
QN	(b) small	petite	klein	corta	Futsu Kurokawa	3
	medium	moyenne	mittel	media	Tancheese	5
	large	grande	groß	larga	Muscade	7
26. VG	Fruit: depth of grooves	Fruit: profondeur des cannelures	Frucht: Tiefe der Furchen	Fruto: profundidad de los surcos		
QN	(b) shallow	peu profondes	flach	poco profunda	Tancheese	3
	medium	moyennement profondes	mittel	media	Futsu Kurokawa	5
	deep	profondes	tief	profunda	Muscade	7
27. VG	Fruit: marbling	Fruit : marbrure	Frucht: Marmorierung	Fruto: jaspeado		
QN	(b) absent or very weak	absent ou très faible	fehlend oder sehr gering	ausente o muy débil		1
	weak	faible	gering	débil		3
	medium	moyenne	mittel	medio		5
	strong	forte	stark	fuerte	Ponca	7

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
28. (*)	VG	Fruit: main color of skin	Fruit: couleur principale de l'épiderme	Frucht: Hauptfarbe der Schale	Fruto: color principal de la epidermis	
PQ	(c)	green	verte	grün	verde	1
		cream	crème	cremefarben	crema	Sunset 2
		yellow	jaune	gelb	amarillo	Aegean Gold 3
		orange brown	orange marron	orangebraun	marrón naranja	Muscade, Ponca 4
		brown	marron	braun	marrón	Hyuga 14 5
29.	VG	Fruit: intensity of main color of skin	Fruit: intensité de la couleur principale de l'épiderme	Frucht: Intensität der Hauptfarbe der Schale	Fruto: intensidad del color principal de la epidermis	
QN	(c)	light	claire	hell	claro	3
		medium	moyenne	mittel	medio	5
		dark	foncée	dunkel	oscuro	7
30.	VG	Fruit: waxiness of skin	Fruit: pruine de l'épiderme	Frucht: Wachsschicht der Schale	Fruto: pruina de la epidermis	
QL	(c)	absent	absente	fehlend	ausente	Tancheese 1
		present	présente	vorhanden	presente	Futsu Kurokawa, Muscade 9
31. (*)	VG	Fruit: warts	Fruit: verrues	Frucht: Warzen	Fruto: verrugas	
QL	(c)	absent	absentes	fehlend	ausentes	Ponca 1
		present	présentes	vorhanden	presentes	Futsu Kurokawa 9
32. (*)	VG	Fruit: main color of flesh	Fruit : couleur principale de la chair	Frucht: Hauptfarbe des Fleisches	Fruto: color principal de la pulpa	
PQ	(c)	yellow	jaune	gelb	amarillo	1
		yellowish orange	orange jaunâtre	gelblich-orange	anaranjado amarillento	Futsu Kurokawa 2
		orange	orange	orange	naranja	Ponca, Tancheese 3

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
33.	VG	Fruit: thickness of flesh (at level of seed cavity)	Fruit : épaisseur de la chair (au niveau de la loge carpellaire)	Frucht: Dicke des Fleisches (auf der Höhe der Samenhöhle)	Fruto: espesor de la pulpa (al nivel de la cavidad seminal)	
(+)						
QN	(c)	thin	fine	dünn	delgado	Trombolino d'Albenga 3
		medium	moyenne	mittel	medio	Longue de Nice 5
		thick	épaisse	dick	grueso	Muscade 7
34.	VG	Fruit: diameter of flower scar	Fruit : diamètre de la cicatrice florale	Frucht: Durchmesser der Blütennarbe	Fruto: diámetro de la cicatriz floral	
QN	(c)	small	petit	klein	pequeño	Trombolino d'Albenga 3
		medium	moyen	mittel	medio	Longue de Nice 5
		large	grand	groß	grande	Tancheese 7
35.	VG	Seed: length	Graine: longueur	Samen: Länge	Semilla: longitud	
(*)						
QN	(c)	short	courte	kurz	corta	Nugget, Futsu Kurokawa 3
		medium	moyenne	mittel	media	Waltham, Tancheese 5
		long	longue	lang	larga	Pleine de Naples 7
36.	VG	Seed: ratio width/length	Graine: ratio largeur/longueur	Samen: Verhältnis Breite/Länge	Semilla: relación anchura/longitud	
(+)						
QN	(c)	small	petit	klein	pequeña	3
		medium	moyen	mittel	media	5
		large	grand	groß	grande	7
37.	VG	Seed: color of coat	Graine : couleur du tégument	Samen: Farbe der Schale	Semilla: color del tegumento	
PQ	(c)	cream	crème	cremefarben	crema	Ponca 1
		yellow	jaune	gelb	amarillo	Nippon, Nugget 2
		brown	marron	braun	marrón	Longue de Nice 3
		bluish grey	gris bleuâtre	bläulich-grau	gris azulado	Sunset 4

8. Explanations on the Table of Characteristics

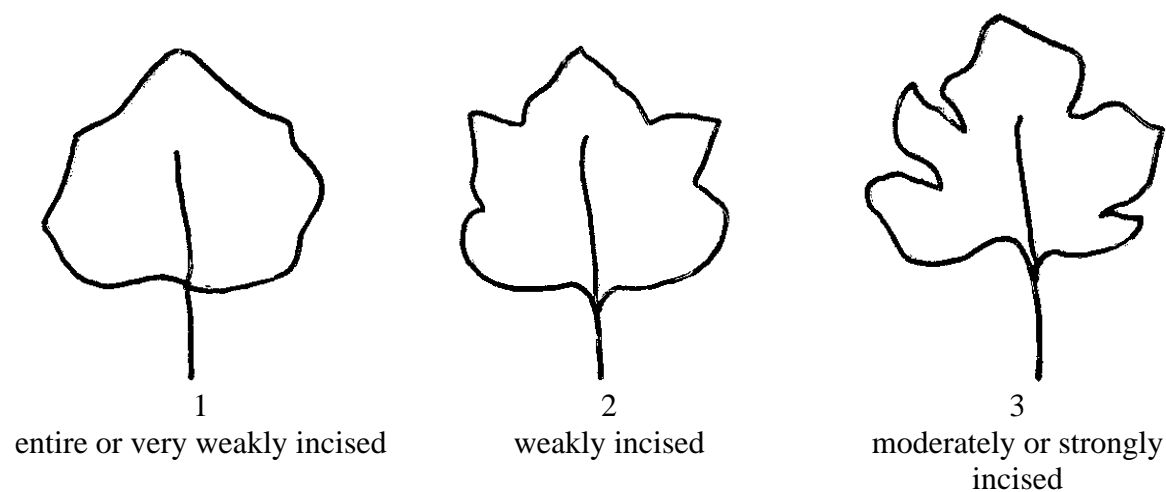
8.1 *Explanations covering several characteristics*

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

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

8.2 *Explanations for individual characteristics*

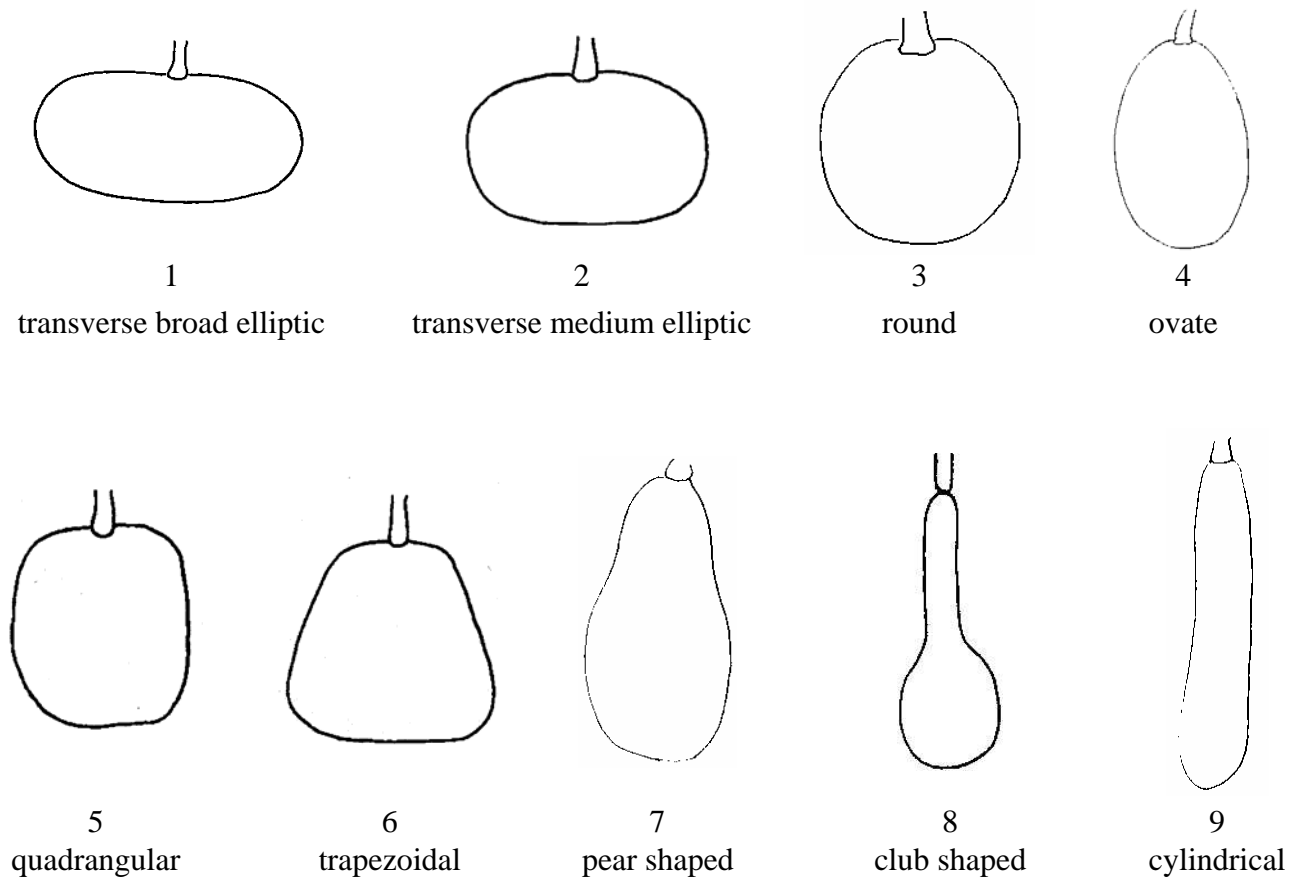
Ad. 4: Leaf blade: margin



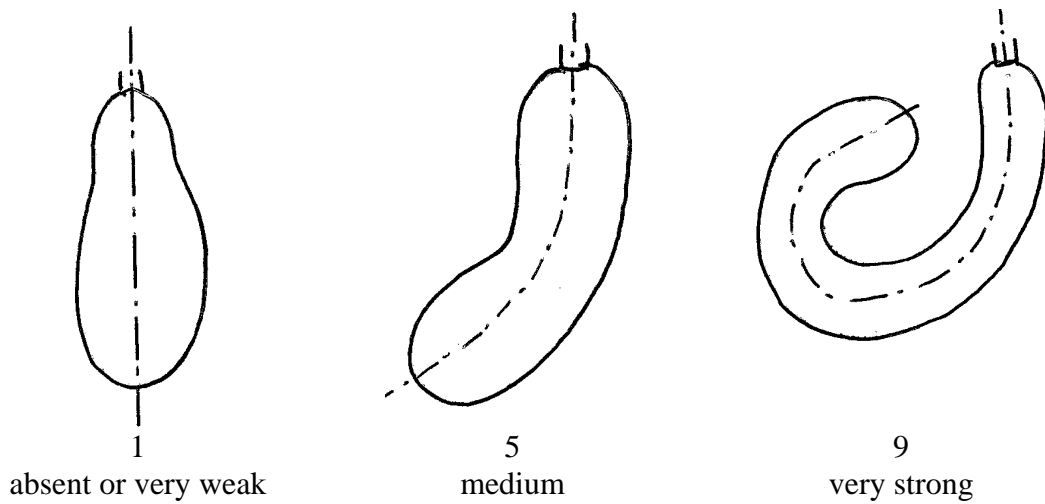
Ad. 15: Fruit: diameter

The diameter should be observed at the position of the broadest part.

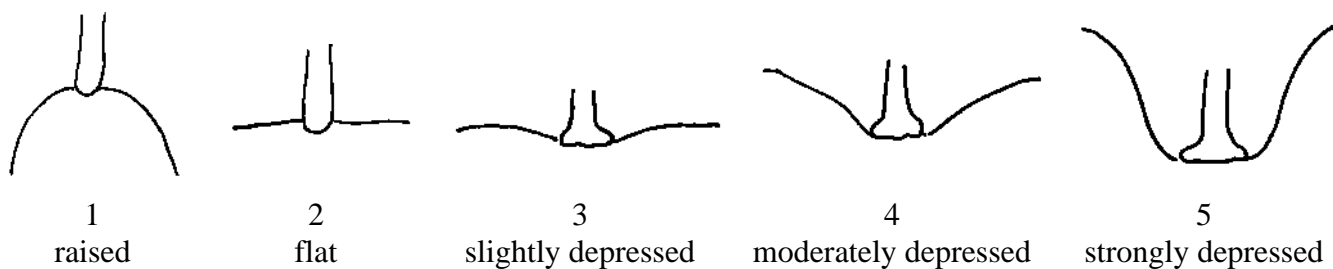
Ad. 18: Fruit: shape in longitudinal section



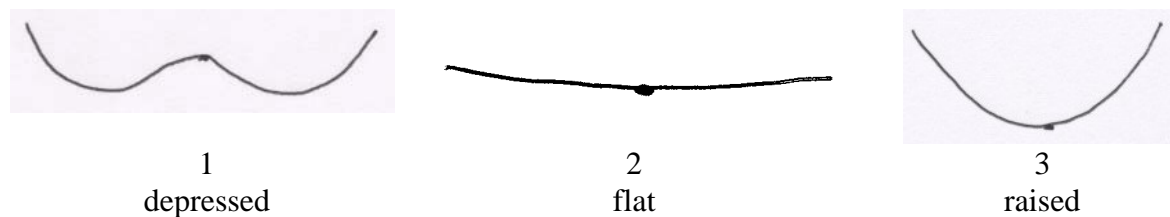
Ad. 21: Fruit: curving (longitudinal axis)



Ad. 22: Fruit: profile at stem end

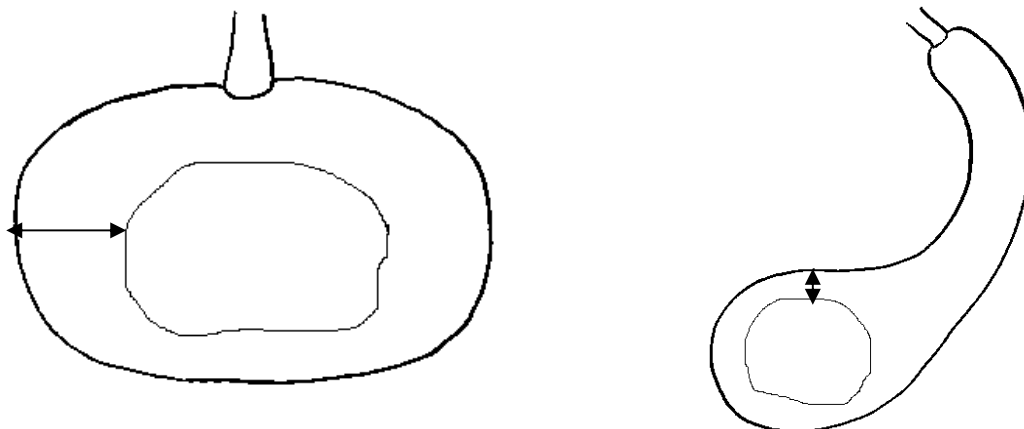


Ad. 23: Fruit: profile at blossom end



Ad. 33: Fruit thickness of flesh (at level of seed cavity)

Thickness should be measured at the widest part of the flesh, at the level of the seed cavity.



Ad. 36: Seed: ratio width / length

Ratio width / length		note
smaller than 0.5	small	3
close to 0.5	medium	5
higher than 0.5	large	7

8.3 *Synonyms of example varieties*

Example variety	Synonyms
Futsu Kurokawa	Futsu, Futsu black, Futsu black rinded

9. Literature

Brancucci, M., Bänziger, E., Das grosse Buch vom Kürbis. Midena & FONA Verlag GmbH, Aarau/Küttigen, Oldenburg, D, 173 pp.

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."/>	
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	<input type="text"/>	
Breeder's reference (if available)	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross []
(please state parent varieties)

(b) partially known cross []
(please state known parent variety(ies))

(c) unknown cross []

4.1.2 Mutation []
(please state parent variety)

4.1.3 Discovery and development []
(please state where and when discovered
and how developed)

4.1.4 Other []
(please provide details)

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:
-------------------------	-----------------	-------------------

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

- (a) Self-pollination []
- (b) Cross-pollination
 - (i) population []
 - (ii) synthetic variety []
- (c) Hybrid []
- (d) Other []
(please provide details)

4.2.2 Other []

(please provide details)

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

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).

Characteristics	Example Varieties	Note
5.1 Plant: length of main stem		
(2)		
short		3[]
medium	Butterbush	5[]
long	Ponca, Nippon, Nugget, Sunset	7[]
5.2 Fruit: length		
(14)		
very short		1[]
short	Ponca	3[]
medium	Muscade	5[]
long	Aegean Gold	7[]
very long	Longue de Nice, Trombolino d'Albenga	9[]
5.4 Fruit: diameter		
(15)		
small	Ponca	3[]
medium	Pleine de Naples	5[]
large	Muscade	7[]
5.5 Fruit: shape in longitudinal section		
(18)		
transverse broad elliptic	Muscade	1[]
transverse medium elliptic	Tancheese, Nippon	2[]
round	Buckskin	3[]
ovate		4[]
quadrangular	Hayato	5[]
trapezoidal	Fagtoong	6[]
pear shaped	Sucrine du Berry, Nugget	7[]
club shaped	Longue de Nice, Trombolino d'Albenga	8[]
cylindrical	Ponca	9[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
Characteristics	Example Varieties	Note	
5.6 Fruit: curving (longitudinal axis) (21)			
absent or very weak		1[]	
weak	Ponca	3[]	
medium	Longue de Nice	5[]	
strong		7[]	
very strong	Trombolino d'Albenga	9[]	
5.7 Fruit: grooves (24)			
absent	Sucrine du Berry	1[]	
present	Muscade	9[]	
5.8 Fruit: main color of skin (28)			
green		1[]	
cream	Sunset	2[]	
yellow	Aegean Gold	3[]	
orange brown	Muscade, Ponca	4[]	
brown	Hyuga 14	5[]	
5.9 Fruit: warts (31)			
absent	Ponca	1[]	
present	Futsu Kurokawa	9[]	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

6. Similar varieties and differences from these varieties

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.

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 brown</i>

Comments:

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

#7. Additional information which may help in the examination of the variety

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?

Yes [] No []

(If yes, please provide details)

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes [] No []

(If yes, please provide details)

7.3 Other information

A representative color photograph of the fruit of the variety should accompany the Technical Questionnaire.

8. Authorization for release

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

Yes [] No []

(b) Has such authorization been obtained?

Yes [] No []

If the answer to (b) is yes, please attach a copy of the authorization.

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:
-------------------------	-----------------	-------------------

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”.

.....

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

Applicant's name

Signature

Date

[End of document]