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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

PUMPKIN

UPOV Code: CUCUR_MAX

Cucurbita maxima Duch.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by experts from South Africa and France**to be considered by the Enlarged Editorial Committee at its meeting
to be held in Geneva, Switzerland, on January 9, 2007*

Alternative Names:*

Botanical name	English	French	German	Spanish
<i>Cucurbita maxima</i> Duch.	Pumpkin	Giraumon, Potiron	Riesenkürbis	Calabaza, 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/CUC_MOS: *Cucurbita Moschata* / *Cucurbita pepo* L. / 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 de Castilla, Calabaza moscada, Calabaza pellejo, Chicamita, Lacayote, Sequaloa, Zapallo **[Office will finalize reference at adoption]**

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.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Cucurbita maxima* 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*

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

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

4.2.2 Hybrid varieties, inbred lines

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 12)
- (c) Fruit: diameter (characteristic 13)
- (d) Fruit: general shape in longitudinal section (characteristic 15)
- (e) Fruit: profile at blossom end (flower scar included) (characteristic 19)
- (f) Fruit: number of colors of skin (characteristic 23)
- (g) Fruit: main color of skin (characteristic 24)

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, MS, VG, VS: See Chapter 3.3.1

(a)-(b) 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	Seedling: shape of cotyledons	Plantule : forme des cotylédons	Jungpflanze: Form der Keimblätter	Plántula: forma del cotiledón		
PQ		medium elliptical	elliptique moyen	mittel elliptisch	elíptica media	Uchiki Kuri	1
		broad elliptical	elliptique large	breit elliptisch	elíptica ancha	Bush Prince, Jaune gros de Paris	2
		obovate	obovale	verkehrt eiförmig	oboval	Big Max, Pacifica	5
2.	VG	Plant: length of main stem	Plante : longueur de la tige principale	Pflanze: Länge des Haupttriebs	Planta: longitud del tallo principal		
QN	(a)	very short	très courte	sehr kurz	muy corta	Golden Nugget	1
		short	courte	kurz	corta	Sweet Mama	3
		medium	moyenne	mittel	media		5
		long	longue	lang	larga	Jaune gros de Paris	7
		very long	très longue	sehr lang	muy larga	Green Hubbard	9
3.	VG	Leaf blade: size	Limbe : taille	Blattspreite: Größe	Limbo: tamaño		
QN	(a)	very small	très petite	sehr klein	muy pequeño	Earli Dri-Crown, Royal Crown	1
		small	petite	klein	pequeño	Baby Blue, Bush Grey, Star 7025,	3
		medium	moyenne	mittel	medio	Delica, Marlborough Grey	5
		large	grande	groß	grande	Jaune gros de Paris, Star 7020, Star 7024	7
		very large	très grande	sehr groß	muy grande		9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
4.	VG	Leaf blade: margin	Limbe : taille	Blattspreite: Rand	Limbo: margen		
(+)							
QN	(a)	entire or very weakly encised	entière ou très faiblement incisée	ganzrandig oder sehr schwach eingeschnitten	entero o con incisiones muy leves	1	
		weakly encised	faiblement incisée	schwach eingeschnitten	con incisiones leves	3	
		moderately encised	modérément incisée	mäßig eingeschnitten	con incisiones moderadas	5	
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 del haz		
QN	(a)	light	claire	hell	clara	Elza	3
		medium	moyenne	mittel	media	Delica, Jamboree, Royal Crown	5
		dark	foncée	dunkel	oscura	Japan Cup, Star 7020	7
6.	VG	Petiole: length	Pétiole : longueur	Blattstiel: Länge	Pecíolo: longitud		
QN	(a)	short	court	kurz	corta	Crown Prince, Doux d’Okkaïdo, Earli-Dri Crown	3
		medium	moyen	mittel	media	Bush Prince, Sweet Mama	5
		long	long	lang	larga	Star 7020, Uchiki Kuri	7
7.	VG	Petiole: diameter (at base)	Pétiole : diamètre (à la base)	Blattstiel: Durchmesser (an der Basis)	Pecíolo: diámetro (en la base)		
QN	(a)	small	petit	klein	pequeño	Crown Prince, Maxi Prince, Uchiki Kuri	3
		medium	moyen	mittel	medio	Bush Prince, Delica	5
		large	grand	groß	grande	Gladiator, Star 7020	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
8.	VG	Female flower: length of sepal	Fleur femelle : longueur du sépale	Weibliche Blüte: Länge des Kelchblattes	Flor femenina: longitud del sépal		
QN	(a)	short	court	kurz	corta	Uchiki Kuri	3
		medium	moyen	mittel	media	Jaune gros de Paris, Pacifica	5
		long	long	lang	larga	Crown Prince, Elza	7
9.	VG	Male flower: length of sepal	Fleur mâle : longueur du sépale	Männliche Blüte: Länge des Kelchblattes	Flor masculina: longitud del sépal		
QN	(a)	short	courte	kurz	corta	Delica, Turks Turban	3
		medium	moyenne	mittel	media	Hubbard Blue	5
		long	longue	lang	larga	Big Moon	7
10.	VG	Peduncle: length	Pédoncule : longueur	Blütenstiel: Länge	Pedúnculo: longitud		
QN	(b)	short	court	kurz	corta		3
		medium	moyen	mittel	media		5
		long	long	lang	larga		7
11.	VG	Peduncle: diameter	Pédoncule : diamètre	Blütenstiel: Durchmesser	Pedúnculo: diámetro		
QN	(b)	small	petit	klein	pequeño		3
		medium	moyen	mittel	medio		5
		large	grand	groß	grande		7
12.	MG / (*)	Fruit: length	Fruit : longueur	Frucht: Länge	Fruto: longitud		
QN	(b)	very short	très court	sehr kurz	muy corta	Golden Nugget	1
		short	court	kurz	corta	Uchiki Kuri	3
		medium	moyen	mittel	media	Golden Hubbard	5
		long	long	lang	larga	Big Moon	7
		very long	très long	sehr lang	muy larga	Banana Pink Jumbo	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
13. MG / Fruit: diameter (*) VG (+)		Fruit : diamètre	Frucht: Durchmesser	Fruto: diámetro		
QN (b)	small	petit	klein	pequeño	Uchiki Kuri	3
	medium	moyen	mittel	medio		5
	large	grand	groß	grande	Big Max, Rouge vif d'Etampes	7
	very large	très grand	sehr groß	muy grande	Prizewinner	9
14. MG / Fruit : ratio length/ VG diameter		Fruit : rapport longueur / diamètre	Frucht: Verhältnis Länge/Durchmesser	Fruto : relación longitud/ diámetro		
QN (b)	very small	très petit	sehr klein	muy pequeña		1
	small	petit	klein	pequeña		3
	medium	moyen	mittel	mediana		5
	large	grand	groß	grande		7
	very large	très grand	sehr groß	muy grande		9
15. VG Fruit: general shape (*) in longitudinal (+) section		Fruit : forme générale en section longitudinale	Frucht: allgemeine Form im Längsschnitt	Fruto: forma general en sección longitudinal		
PQ (b)	heart shape	cordiforme	herzförmig	acorazonada	Golden Delicious	1
	capped	en turban	turbanartig	en turbante	Giraumon Turban, Turks Turban	2
	transverse elliptical	elliptique transverse	quer elliptisch	elíptica transversal	Sweet Mama	3
	transverse broad elliptical	elliptique transversale large	quer breit elliptisch	elíptica transversal ancha	Jaune gros de Paris, Mammouth	4
	circular	circulaire	rund	circular	Big Mama	5
	narrow elliptical	elliptique étroit	schmal elliptisch	elíptica estrecha	Banana	6
	medium elliptical	elliptique moyen	mittel elliptisch	elíptica media	Banana Pink Jumbo	7
	rectangular	rectangulaire	rechteckig	rectangular		8
	trapezoid	trapézoïdale	trapezförmig	trapezoidal	[to be replaced]	9
	obovate	obovale	verkehrt eiförmig	oboval	Doux d'Okkaïdo, Green Baby	10
	pear shape	piriforme	birnenförmig	piriforme	Golden Hubbard	11

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
16. (*)	VG	Fruit : position of broadest part	Fruit : position de la partie la plus large	Frucht: Position des breitesten Teils	Fruto: posición de la parte más ancha		
QN	(b)	towards stem end	vers la base	zum Stielende hin	hacia la base	Golden Delicious	1
		at middle	au milieu	in der Mitte	en el medio	Rouge vif d'Etampes	2
		towards blossom end	vers le sommet	zum apikalen Teil hin	hacia el ápice	Golden Hubbard	3
17. (*) (+)	VG	Fruit: profile at stem end	Fruit : profil à la base	Frucht: Profil am Stielende	Fruto: perfil en la base		
PQ	(b)	depressed	déprimé	eingesenkt	deprimido	Rouge vif d'Etampes	1
		flat	plan	flach	plano	Delica	2
		raised	protubérant	vorgewölbt	elevado	Doux d' Okkaïdo	3
18. (+)	VG	<u>Only varieties with fruit: profile at stem end; depressed: Fruit: depth of depression at base</u>	<u>Seulement pour les variétés à fruit : profil à la base : déprimé : Fruit : profondeur de la dépression à la base</u>	<u>Nur für Sorten mit Frucht: Profil am Stielende: eingesenkt: Frucht: Tiefe der Einsenkung an der Basis</u>	<u>Únicamente variedades con fruto: perfil en la base: deprimido: Fruto: profundidad de la depresión en la base</u>		
QN	(b)	shallow	faible	flach	débil	[to be provided]	3
		medium	moyenne	mittel	media	[to be provided]	5
		deep	forte	tief	fuerte	[to be provided]	7
19. (*) (+)	VG	Fruit: profile at blossom end (flower scar included)	Fruit : profil au sommet (cicatrice florale incluse)	Frucht: Profil am apikalen Teil (Blütennarbe eingeschlossen)	Fruto: perfil en el ápice (incluida la cicatriz floral)		
PQ	(b)	depressed	déprimé	eingesenkt	deprimido	Rouge vif d'Etampes	1
		flat	plan	flach	plano		2
		raised	protubérant	vorgewölbt	elevado	Hubbard Blue	3
20. (*)	VG	Fruit: grooves	Fruit : cannelures	Frucht: Furchen	Fruto: surcos		
QL	(b)	absent	absent	fehlend	ausentes	Jaune gros de Paris	1
		present	présent	vorhanden	presentes	Big Moon, Rouge vif d'Etampes	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
21.	VG	Fruit : distance between grooves	Fruit : distance entre les cannelures	Frucht: Abstand zwischen den Furchen	Fruto: distancia entre surcos		
QN	(b)	small	court	klein	corta		3
		medium	moyen	mittel	media	Regal Early	5
		large	long	groß	larga	Big Moon	7
22.	VG	Fruit: depth of grooves	Fruit: profondeur des cannelures	Frucht: Tiefe der Furchen	Fruto: profundidad de los surcos		
QN	(b)	shallow	peu profonde	flach	poco profunda		3
		medium	moyennement profonde	mittel	media		5
		deep	profonde	tief	profunda		7
23.	VG (*)	Fruit: number of colors of skin	Fruit: nombre de couleurs de l'épiderme	Frucht: Anzahl Farben der Schale	Fruto: número de colores de la piel		
PQ	(b)	one	une	eine	uno	Gladiator	1
		two color intensities (with clear borders)	deux intensités de couleur (avec des limites nettes)	zwei Farbintensitäten (mit deutlichen Rändern)	dos intensidades cromáticas (con límites definidos)	Giraumon Turban	2
		two color hues	deux teintes de couleur	zwei Farbtöne	dos tonos cromáticos	Delica	3
		more than two color hues or intensities (with clear borders)	plus de deux teintes ou intensités de couleur (avec des limites nettes)	mehr als zwei Farbtöne oder Farbintensitäten (mit deutlichen Rändern)	más de dos tonos o intensidades cromáticas (con límites definidos)	Turks Turban	4

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
24.	VG	Fruit: main color of skin	Fruit : couleur principale de l'épiderme	Frucht: Hauptfarbe der Schale	Fruto: color principal de la piel		
PQ	(b)	white	blanc	weiß	blanco	Valenciano	1
		cream	crème	cremefarben	crema	[to be provided]	2
		yellow	jaune	gelb	amarillo	Jaune gros de Paris	3
		orange	orange	orange	naranja	Regal Early	4
		red	rouge	rot	rojo	Rouge vif d'Etampes	5
		pink	rose	rosa	rosa	Giraumon Turban	6
		green	vert	grün	verde	Delica, Pacifica	7
		grey green	gris vert	graugrün	verde grisáceo	Japan Cup, Star 7024	8
		grey	gris	grau	gris	Baby Blue, Early Jarrah Grey, Hubbard Blue	9
25.	VG	Fruit: intensity of main color of skin (except for white and cream main color of skin)	Fruit : intensité de la couleur principale de l'épiderme (sauf pour les couleurs principales d'épiderme blanc et crème)	Frucht: Intensität der Hauptfarbe der Schale (außer für weiße und cremefarbene Farbe der Schale)	Fruto: intensidad del color principal de la piel (salvo para el color principal de la piel blanco y crema)		
QN	(b)	light	claire	hell	clara		3
		medium	moyenne	mittel	media		5
		dark	foncée	dunkel	oscura		7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
26. (*)	VG	<u>Only varieties with more than two color hues:</u> Fruit: secondary color of skin	<u>Seulement les variétés avec plus de deux teintes de couleur :</u> Fruit : couleur de l'épiderme	<u>Nur Sorten mit mehr als zwei Farbtönen:</u> Frucht: Sekundärfarbe der Schale	<u>Únicamente variedades con más de dos tonos cromáticos:</u> Fruto: color secundario de la piel		
PQ	(b)	white	blanc	weiß	blanco	[to be provided]	1
		cream	crème	cremefarben	crema	[to be provided]	2
		yellow	jaune	gelb	amarillo	[to be provided]	3
		orange	orange	orange	naranja	[to be provided]	4
		red	rouge	rot	rojo	[to be provided]	5
		pink	rose	rosa	rosa	[to be provided]	6
		green	vert	grün	verde	[to be provided]	7
		grey green	gris vert	graugrün	verde grisáceo	[to be provided]	8
		grey	gris	grau	gris	Delica	9
27. (*)	VG	<u>Only varieties with more than two color hues:</u> Fruit: intensity of secondary color of skin	<u>Seulement les variétés avec plus de deux teintes de couleur :</u> Fruit : intensité de la couleur secondaire de l'épiderme	<u>Nur Sorten mit mehr als zwei Farbtönen:</u> Frucht: Intensität der Sekundärfarbe der Schale	<u>Únicamente variedades con más de dos tonos cromáticos:</u> Fruto: intensidad del color secundario de la piel		
QN		light	claire	hell	clara		3
		medium	moyenne	mittel	media		5
		dark	foncée	dunkel	oscura		7
28. (*)	VG	<u>Only varieties with more than two color hues or intensities:</u> Fruit : distribution of secondary color of skin	<u>Seulement les variétés avec plus de deux teintes ou intensités de couleur :</u> Fruit : répartition de la couleur secondaire	<u>Nur Sorten mit mehr als zwei Farbtönen oder Farbtintensitäten:</u> Frucht: Verteilung der Sekundärfarbe der Schale	<u>Únicamente variedades con más de dos tonos o intensidades cromáticos:</u> Fruto: distribución del color secundario de la piel		
PQ	(b)	only patches	tâches uniquement	nur Flecken	únicamente en manchas	Atlantic Giant	1
		patches and stripes	tâches et rayures	Flecken und Streifen	en manchas y franjas	Delica	2
		only stripes	rayures uniquement	nur Streifen	únicamente en franjas	Turks Turban	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
29.	VG	Fruit: texture of surface	Fruit : texture de la surface	Frucht: Textur der Oberfläche	Fruto: textura de la superficie		
QL	(b)	smooth	lisse	glatt	lisa	Rouge vif d'Etampes, Uchiki Kuri	1
		rough	rugueuse	rauh	rugosa	Blue Hubbard, Delica	2
		warted	verruqueuse	warzig	verrugosa	Chicago Warted Hubbard	3
		bullate	gauffrée	blasig	abullonada	Marina di Chioggia	4
30.	VG	Fruit: cork formation	Fruit : formation de liège	Frucht: Korkbildung	Fruto: formación suberosa		
(*)							
PQ	(b)	absent or very sparse	absent ou très faible	fehlend oder sehr schwach	ausente o muy débil	Rouge vif d'Etampes	1
		in dots	en points	in Punkten	en puntos	Jaune gros de Paris	2
		netted	en filet	netzartig	reticular	Brodée galeuse d'Eysine	3
31.	VG	Fruit: thickness of cork	Fruit : épaisseur du liège	Frucht: Dicke des Korks	Fruto: espesor de la suberosidad		
QN	(b)	thin	faible	dünn	fino	Jaune gors de Paris	3
		medium	moyenne	mittel	medio		5
		thick	forte	dick	grueso	Brodée galeuse d'Eysine	7
32.	VG	Fruit: diameter of flower scar	Fruit : taille de la cicatrice florale	Frucht: Durchmesser der Blütennarbe	Fruto: diámetro de la cicatriz floral		
QN	(b)	small	petite	klein	pequeño	Blue Hubbard, Pondorosa	3
		medium	moyenne	mittel	medio	Pacific King	5
		large	grande	groß	grande	Crown Prince	7
		very large	très grande	sehr groß	muy grande	Turks Turban	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
33. (*)	VG	Fruit: main color of flesh	Fruit : couleur principale de la chair	Frucht: Hauptfarbe des Fleisches	Fruto: color principal de la pulpa		
PQ	(b)	yellow	jaune	gelb	amarillo	Giraumon Turban, Ponderosa, Star 7024	1
		orange	orange	orange	naranja	Jamboree	2
		reddish orange	orange rouge	orangerot	anaranjado rojizo	Rouge vif d’Etampes, Uchiki Kuri [to be checked]	3
34. (*)	VG	Seed: size	Graine: taille	Samen: Größe	Semilla: tamaño		
QN		small	petite	klein	pequeño		
		medium	moyenne	mittel	medio		
		large	grande	groß	grande		
35. (*) (+)	VG	Seed: shape	Graine: forme	Samen: Form	Semilla: forma		
QN		narrow elliptic [to be checked]	elliptique étroite	schmal elliptisch	elíptica estrecha [a verificar]		1
		medium elliptic [to be checked]	elliptique moyenne	mittel elliptisch	elíptica media [a verificar]		2
		broad elliptic [to be checked]	elliptique large	breit elliptisch	elíptica ancha [a verificar]		3
36. (*)	VG	Seed: color of coat	Graine : couleur du tégument	Samen: Farbe der Schale	Semilla: color del tegumento		
PQ	(b)	white	blanc	weiß	blanco	Jaune gros de Paris	1
		cream	crème	cremefarben	crema	[to be provided]	2
		light brown	brun clair	hellbraun	marrón claro	Uchiki Kuri	3

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 which should be made on fully developed leaves, when the first fruit is fully developed.
- (b) Observations which should be made on fully developed fruit at maturity.

8.2 *Explanations for individual characteristics*

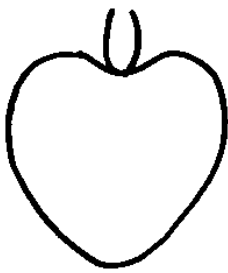
Ad. 4: Leaf blade: margin

[Illustration to be provided]

Ad. 13: Fruit: diameter

The diameter should be observed at the broadest part.

Ad. 15: Fruit: general shape in longitudinal section



1

heart shape



2

capped



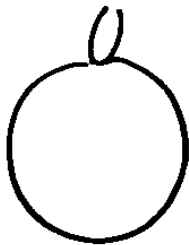
3

transverse elliptical



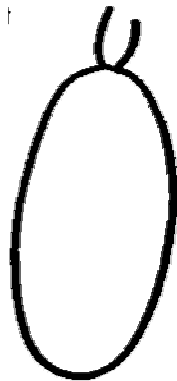
4

transverse broad
elliptical



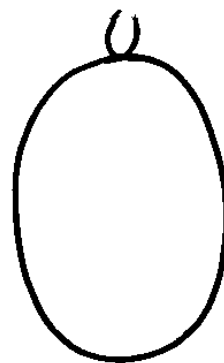
5

circular



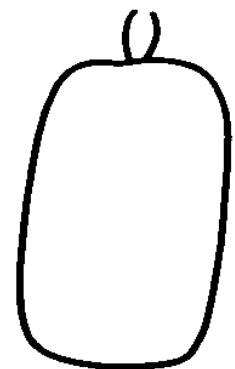
6

narrow elliptical



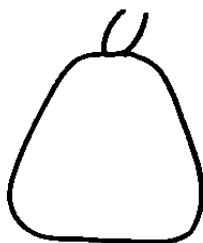
7

medium elliptical



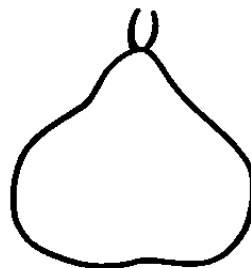
8

rectangular



9

trapezoid



10

obovate



11

pear shape

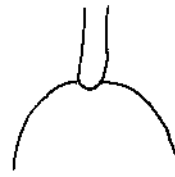
Ad. 17: Fruit: profile at stem end



1
depressed



2
flat



3
raised

Ad. 18: Only varieties with fruit: profile at stem end: depressed: Fruit: depth of depression at base



3
shallow



5
medium



7
deep

Ad. 19: Fruit: profile of blossom end (flower scar included)



1
depressed



2
flat
[to be improved]



3
raised

Ad. 24: Fruit: main color of skin

The main color is the color with the largest area over the whole fruit excluding the scar area.
The secondary color is the color with the second largest area over the whole fruit excluding the scar area.

Ad. 35: Seed: shape

[To add Table of Ratios]

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.

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

Higgins, J., 1980: Species Identification of some Curcubita Cultivars, J. Natn. Inst. Agric. Bot., 15, 281-287.

Tapley, William T., Enzie, Walter D., Van Eseltine, Glen P., 1937: The Vegetables of New York, Vol. 1, Part IV The Cucurbits, Albany, New York.

Whitaker, T.W., Bohn, G.W., 1950: The Taxonomy, Genetics, Production and Uses of the Cultivated Species of Curcubita, Econ. Bot., 4, 52-81.

Whitaker, T.W., Davis, G.N., 1962: Curcubits, Botany, Cultivation and Utilization, World Crop Books, London, New York.

[Further references to be added]

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	<i>Cucurbita maxima</i> Duch.	
1.2 Common name	Pumpkin	
1.3 Advisory note	The applicant should check that the variety is of <i>Cucurbita maxima</i> Duch and not another species of <i>Cucurbita</i> .	
2. Applicant		
Name		
Address		
Telephone No.		
Fax No.		
E-mail address		
Breeder (if different from applicant)		
3. Proposed denomination and breeder's reference		
Proposed denomination (if available)		
Breeder's reference		

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)

4.2 Method of propagating the variety

Seed-propagated varieties

(a) Cross-pollination []

(b) Hybrid []

(c) 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:
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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)		
very short	Golden Nugget	1 [...]
short	Sweet Mama	3 [...]
medium		5 [...]
long	Jaune gros de Paris	7 [...]
very long	Green Hubbard	9 [...]
5.2 Fruit: length (12)		
very short	Golden Nugget	1 [...]
short	Uchiki Kuri	3 [...]
medium	Golden Hubbard	5 [...]
long	Big Moon	7 [...]
very long	Banana Pink Jumbo	9 [...]
5.3 Fruit: diameter (13)		
small	Uchiki Kuri	3 [...]
medium		5 [...]
large	Big Max, Rouge vif d'Etampes	7 [...]
very large	Prizewinner	9 [...]

TECHNICAL QUESTIONNAIRE		Page {x} of {y}	Reference Number:
5.4 Fruit: general shape in longitudinal section (15)			
heart shape	Golden Delicious	1 [...]	
capped	Giraumon Turban, Turks Turban	2 [...]	
transverse elliptical	Sweet Mama	3 [...]	
transverse broad elliptical	Jaune gros de Paris, Mammouth	4 [...]	
circular	Big Mama	5 [...]	
narrow elliptical	Banana	6 [...]	
medium elliptical	Banana Pink Jumbo	7 [...]	
rectangular		8 [...]	
trapezoïd	[to be replaced]	9 [...]	
obovate	Doux d'Okkaïdo, Green Baby	10 [...]	
pear shape	Golden Hubbard	11 [...]	
5.5 Fruit: grooves (20)			
absent	Jaune gros de Paris	1 [...]	
present	Big Moon, Rouge vif d'Etampes	9 [...]	
5.6 Fruit: number of colors of skin (23)			
one	Gladiator	1 [...]	
two color intensities (with clear borders)	Giraumon Turban	2 [...]	
two color hues	Delica	3 [...]	
more than two color hues or intensities (with clear borders)	Turks Turban	4 [...]	
5.7 Fruit: main color of skin (24)			
white	Valenciano	1 [...]	
cream		2 [...]	
yellow	Jaune gros de Paris	3 [...]	
orange	Regal Early	4 [...]	
red	Rouge vif d'Etampes	5 [...]	
pink	Giraumon Turban	6 [...]	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
green	Pacifica, Delica	7 [...]
grey green	Japan Cup, Star 7024	8 [...]
grey	Baby Blue, Early Jarrah Grey, Hubbard Blue	9 [...]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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</i>

Comments:

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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:
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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”.

.....

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

Applicant's name					
Signature					

[End of document]