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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

<p>HUSK TOMATO</p> <p>UPOV Code: PHYSA_IXO</p> <p><i>Physalis ixocarpa</i> Brot.</p>

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>Physalis ixocarpa</i> Brot., <i>Physalis philadelphica</i> Lam	Husk Tomato	Alkéenge du Mexique, Coqueret, Physalis, Tomatillo, Tomate fraise	Mexikanische Blasenkirsche, Tomatillo	Miltomate, Tomatillo, Tomate de cáscara, Tomate de hoja, Tomate verde

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.

* 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 *Physalis ixocarpa* Brot. ex Horm. (Syn: *Physalis philadelphica* Lam.).

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:

5 g or at least 2,500 seeds.

2.4 The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.

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

2.6 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 60 plants which should be divided between at least 2 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 30 plants or parts taken from each of 30 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 For the assessment of uniformity of cross-pollinated varieties, a population standard of 3% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 60 plants, 4 off-types are allowed.

4.2.3 For the assessment of uniformity of hybrids, a population standard of 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 60 plants, 3 off-types are 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) Stem: length of internodes (characteristic 4)
- (c) Stem: anthocyanin coloration of internodes (characteristic 5)
- (d) Fruit: size (characteristic 19)
- (e) Fruit: main color (at harvest maturity) (characteristic 27)
- (f) Calyx: anthocyanin coloration (characteristic 37)
- (g) Calyx: intensity of anthocyanin coloration (characteristic 38)
- (h) Peduncle: length (characteristic 39)
- (i) Peduncle: thickness at fruit end (characteristic 40)
- (j) Fruit: number of seeds (characteristic 43)

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*

(*) 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) to (d) 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: anthocyanin coloration of hypocotyl	Plantule : pigmentation anthocyanique des hypocotyles	Keimpflanze: Anthocyanfärbung des Hypokotyls	Plántula: pigmentación antociánica del hipocótilo		
QL	absent	absente	fehlend	ausente	Rendidora Precoz	1
	present	présente	vorhanden	presente	Morada R	9
2. VG (*) (+)	Plant: growth habit	Plante : port	Pflanze: Wuchsform	Planta: porte		
QN (a)	upright	dressé	aufrecht	erecto	Tamazula SM3	1
	semi-upright	demi-dressé	halbaufrecht	semi-erecto	Diamante	3
	prostrate	étalé	liegend	postrado	Milpero Tetela	5
3. MS/ MG (*)	Stem: height at first branching	Tige : hauteur à la première ramification	Stengel: Höhe der ersten Verzweigung	Tallo: altura a la primera ramificación		
QN (a)	low	faible	niedrig	baja	Salamanca	3
	medium	moyenne	mittel	intermedia	Tamazula SM3	5
	high	élevée	hoch	alta	Puebla SM3	7
4. MS/ MG (*)	Stem: length of internodes	Tige : longueur des entre-nœuds	Stengel: Länge der Internodien	Tallo: longitud de entrenudos		
QN (a)	short	courts	kurz	corto	Salamanca	3
	medium	moyens	mittel	intermedio	Diamante	5
	long	longs	lang	largo	Tecoautla 04	7
5. VG (*)	Stem: anthocyanin coloration of internodes	Tige : pigmentation anthocyanique des entre-nœuds	Stengel: Anthocyanfärbung der Internodien	Tallo: pigmentación antociánica en los entrenudos		
QL (c)	absent	absente	fehlend	ausente	Rendidora Precoz	1
	present	présente	vorhanden	presente	Morada R	9

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6. VG	Stem: intensity of anthocyanin coloration of internodes	Tige : intensité de la pigmentation anthocyanique des entre-nœuds	Stengel: Intensität der Anthocyanfärbung der Internodien	Tallo: intensidad de pigmentación antocianica en los entrenudos		
QN	(c) weak	faible	gering	débil	Tecozautla 04	3
	medium	moyenne	mittel	media	Milpero Tetela	5
	strong	forte	stark	fuerte	Morada R	7
7. VG	Stem: pubescence of internodes	Tige : pubescence des entre-nœuds	Stengel: Behaarung der Internodien	Tallo: pubescencia de los entrenudos		
QL	(c) absent	absente	fehlend	ausente	Rendidora Precoz	1
	present	présente	vorhanden	presente	Milpero Tetela	9
8. VG	Leaf blade: shape	Limbe : forme	Blattspreite: Form	Hoja: forma		
(+)						
QN	(c) narrow elliptic	elliptique étroit	schmal elliptisch	elíptica estrecha		1
	medium elliptic	elliptique moyen	mittel elliptisch	elíptica media	CHF1 Chapingo	2
	broad elliptic	elliptique large	breit elliptisch	elíptica ancha		3
9. MS	Leaf blade: length	Limbe : longueur	Blattspreite: Länge	Hoja: longitud		
QN	(c) short	court	kurz	corta	Milpero Tetela	3
	medium	moyen	mittel	mediana	Diamante	5
	long	long	lang	larga	Tecozautla 04	7
10. MS	Leaf blade: width	Limbe : largeur	Blattspreite: Breite	Hoja: anchura		
QN	(c) narrow	étroit	schmal	estrecha	Rendidora Precoz	3
	medium	moyen	mittel	media	Diamante	5
	broad	large	breit	ancha	Manzano Tepetlixpa	7
11. VG	Leaf blade: dentation of margin	Limbe : dentelure du bord	Blattspreite: Zähnung des Randes	Hoja: dentado del margen		
(+)						
QN	(c) absent or weak	nulle ou faible	fehlend oder gering	ausente o débil	Rendidora Precoz	1
	medium	moyenne	mittel	media	Yema de Huevo	2
	strong	forte	stark	fuerte	Tecozautla 04	3

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
12. VG	Leaf blade: color	Limbe : couleur	Blattspreite: Farbe	Hoja: color		
PQ (c)	yellowish green	vert jaunâtre	gelblichgrün	verde amarillento	Yema de Huevo	1
	green	vert	grün	verde	Diamante	2
	purplish green	vert violacé	purpurgrün	verde violáceo	Tamazula SM3	3
13. VG	Leaf blade: intensity of green color	Limbe : intensité de la couleur verte	Blattspreite: Intensität der Grünfärbung	Hoja: intensidad del color verde		
QN (c)	weak	claire	gering	débil	Salamanca	3
	medium	moyenne	mittel	media	Puebla SM3	5
	strong	foncée	stark	fuerte	Morada R	7
14. VG	Petiole: attitude	Pétiole : port	Blattstiel: Haltung	Pecíolo: porte		
(+)						
QN (c)	semi-erect	demi-dressé	halbaufrecht	semi-erecto	Yema de Huevo	1
	intermediate	intermédiaire	intermediär	intermedio	Salamanca	2
	drooping	retombant	hängend	colgante	Tecozautla 04	3
15. MS	Petiole: length	Pétiole : longueur	Blattstiel: Länge	Pecíolo: longitud		
QN (c)	short	court	kurz	corto	Rendidora Precoz	3
	medium	moyen	mittel	medio	Puebla SM3	5
	long	long	lang	largo	Manzano Tepetlixpa	7
16. VS	Flower: attitude of pedicel	Fleur : port du pédoncule	Blüte: Haltung des Blütenstiels	Flor: porte del pedicelo		
QN (b)	erect	dressé	aufrecht	erecto		1
	intermediate	intermédiaire	intermediär	intermedio		3
	drooping	retombant	hängend	colgante		5

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
17. VG/MS	Flower: diameter	Fleur : diamètre	Blüte: Durchmesser	Flor: diámetro		
QN (b)	small	petit	klein	pequeño	Milpero Tetela	3
	medium	moyen	mittel	medio	Manzano Tepetlixpa	5
	large	grand	groß	grande	Yema de Huevo	7
18. VG	Flower: number of anthers	Fleur : nombre d'anthères	Blüte: Anzahl Antheren	Flor: número de anteras		
QL (b)	five	cinq	fünf	cinco	Tamazula SM3	1
	more than five	plus de cinq	mehr als fünf	más de cinco	Puebla SM3	2
19. VG (*)	Fruit: size	Fruit : taille	Frucht: Größe	Fruto: tamaño		
QN (c)	small	petit	klein	pequeño	Milpero Tetela	3
	medium	moyen	mittel	mediano	Tamazula SM3	5
	large	grand	groß	grande	Diamante	7
	very large	très grand	sehr groß	muy grande	Tecoautla 04	9
20. MS (*) (+)	Fruit: length	Fruit : longueur	Frucht: Länge	Fruto: longitud		
QN (c)	short	court	kurz	corta	Milpero Tetela	3
	medium	moyen	mittel	media	CHF1 Chapingo	5
	long	long	lang	larga	Tecoautla 04	7
21. MS (*) (+)	Fruit: diameter	Fruit : diamètre	Frucht: Durchmesser	Fruto: diámetro		
QN (c)	narrow	étroit	schmal	estrecho	Milpero Tetela	3
	medium	moyen	mittel	medio	CHF1 Chapingo	5
	broad	large	breit	ancho	Tecoautla 04	7

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
22.	MS	Fruit: ratio length/diameter	Fruit : rapport longueur/diamètre	Frucht: Verhältnis Länge/Breite	Fruto: relación longitud/diámetro	
QN	(c)	small	petit	klein	pequeña	Diamante 3
		medium	moyen	mittel	media	Milpero Tetela 5
		large	grand	groß	grande	Salamanca 7
23.	VG	Fruit: shape in longitudinal section	Fruit : forme en section longitudinale	Frucht: Form im Längsschnitt	Fruto: forma en sección longitudinal	
(+)						
PQ	(c)	oblate	aplatis	breitrund	aplanada	1
		circular	circulaire	kreisförmig	circular	2
		cordate	cordiforme	herzförmig	cordiforme	3
		triangular	triangulaire	dreieckig	triangular	4
24.	VG	Fruit: shape in cross section	Fruit : forme en section transversale	Frucht: Form im Querschnitt	Fruto: forma en sección transversal	
(+)						
PQ	(c)	elliptic	elliptique	elliptisch	elíptica	1
		circular	circulaire	kreisförmig	circular	CHF1 Chapingo 2
		angular	anguleux	winklig	angular	3
25.	VG	Fruit: depth of stalk cavity	Fruit : profondeur de la cavité du pédoncule	Frucht: Tiefe der Stielhöhle	Fruto: profundidad de la cavidad peduncular	
(+)						
QN	(c)	absent or very shallow	nulle ou très peu profonde	fehlend oder sehr flach	ausente o muy poco profunda	1
		shallow	peu profonde	flach	poco profunda	3
		medium	moyenne	mittel	media	5
		deep	profonde	tief	profunda	7
26.	VS	Fruit: shape of apex	Fruit : forme du sommet	Frucht: Form der Spitze	Fruto: forma del ápice	
(+)						
PQ	(c)	pointed	pointu	zugespitzt	puntiaguda	1
		rounded	arrondi	abgerundet	redondeada	Milpero Tetela 2
		depressed	déprimé	eingesenkt	hendida	3

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
27. VG (*)	Fruit: main color (at harvest maturity)	Fruit : couleur principale (à maturité de récolte)	Frucht: Hauptfarbe (zur Erntereife)	Fruto: color principal (en la madurez para la cosecha)		
PQ	(c) white	blanc	weiß	blanco	Mutante	1
	green	vert	grün	verde	Rendidora Precoz	2
	yellow	jaune	gelb	amarillo	Manzano Tepetlixpa	3
	orange	orange	orange	anaranjado	Yema de Huevo	4
	purple	pourpre	purpurn	púrpura	Tamazula SM3	5
28. VG (+)	Fruit: intensity of main color (at harvest maturity)	Fruit : intensité de la couleur principale (à maturité de récolte)	Frucht: Intensität der Hauptfarbe (zur Erntereife)	Fruto: intensidad del color (en la madurez para la cosecha)		
QN	(c) light	claire	hell	claro		1
	intermediate	intermédiaire	mittel	medio		2
	dark	foncée	dunkel	oscuro		3
29. VG (*)	Fruit: main color (at physiological maturity)	Fruit : couleur principale (à maturité physiologique)	Frucht: Hauptfarbe (zur physiologischen Reife)	Fruto: color principal (en la madurez fisiológica)		
PQ	(d) white	blanc	weiß	blanco	Mutante	1
	green	vert	grün	verde	Rendidora Precoz	2
	yellow	jaune	gelb	amarillo	Manzano Tepetlixpa	3
	orange	orange	orange	anaranjado	Yema de Huevo	4
	purple	pourpre	purpurn	púrpura	Tamazula SM3	5
30. VG (+)	Fruit: intensity of main color (at physiological maturity)	Fruit : intensité de la couleur principale (à maturité physiologique)	Frucht: Intensität der Hauptfarbe (zur physiologischen Reife)	Fruto: intensidad del color principal (en la madurez fisiológica)		
QN	(d) light	claire	hell	débil		1
	intermediate	intermédiaire	mittel	media		2
	dark	foncée	dunkel	fuerte		3

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
31. VG	Fruit: color of flesh	Fruit : couleur de la chair	Frucht: Farbe des Fleisches	Fruto: color de la pulpa		
PQ (d)	white	blanc	weiß	blanco	Mutante	1
	yellow	jaune	gelb	amarillo	Manzano Tepetlixpa	2
	greenish yellow	jaune verdâtre	grünlichgelb	amarillo verdoso	CHF1 Chapingo	3
	green	vert	grün	verde	Puebla SM3	4
	purplish green	vert violacé	purpurgrün	verde morado	Tamazula SM3	5
	purple	pourpre	purpurn	púrpura	Morada R	6
32. MS	Fruit: predominant number of locules	Fruit : nombre prédominant de loges	Frucht: vorwiegende Anzahl Kernkammern	Fruto: número predominante de lóculos		
QN (d)	two	deux	zwei	dos		1
	three	trois	drei	tres		2
	four	quatre	vier	cuatro		3
	five	cinq	fünf	cinco		4
	more than five	plus de cinq	mehr als fünf	más de cinco		5
33. VS	Fruit: adherence of calyx	Fruit : adhérence du calice	Frucht: Anhaften des Kelches	Fruto: adherencia del cáliz		
QN (d)	weak	faible	gering	débil	Puebla SM3	3
	medium	moyenne	mittel	media	Diamante	5
	strong	forte	stark	fuerte	CHF1 Chapingo	7
34. VS (+)	Fruit: enclosure of calyx	Fruit : position du calice	Frucht: Umhüllung des Kelches	Fruto: cobertura del cáliz		
QN (d)	fully enclosed	complètement fermé	vollständig umhüllt	completamente cerrada	CHF1 Chapingo	1
	slightly open	faiblement ouvert	etwas offen	ligeramente abierta	Tecozautla 04	2
	widely open	largement ouvert	weit offen	muy abierta	Puebla SM3	3

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
35. VG	Calyx: pubescence	Calice : pubescence	Kelch: Behaarung	Cáliz: pubescencia		
QL	(c) absent	absentes	fehlend	ausente	Rendidora Precoz	1
	present	présentes	vorhanden	presente	Salamanca	9
36. VG	Calyx: ribbing	Calice : nervures	Kelch: Rippung	Cáliz: acostillado		
	(+)					
QL	(c) absent	absentes	fehlend	ausente	CHF1 Chapingo	1
	present	présentes	vorhanden	presente	Puebla SM3	9
37. VG (*)	Calyx: anthocyanin coloration	Calice : pigmentation anthocyanique	Kelch: Anthocyanfärbung	Cáliz: pigmentación antociánica		
QL	(d) absent	absente	fehlend	ausente	CHF1 Chapingo	1
	present	présente	vorhanden	presente	Tamazula SM3	9
38. VG (*)	Calyx: intensity of anthocyanin coloration	Calice : intensité de la pigmentation anthocyanique	Kelch: Intensität der Anthocyanfärbung	Cáliz: intensidad de la pigmentación antociánica		
QN	(d) very weak	très faible	sehr gering	muy débil		1
	weak	faible	gering	débil	Manzano Tepetlixpa	3
	medium	moyenne	mittel	media	Salamanca	5
	strong	forte	stark	fuerte	Morada R	7
	very strong	très forte	sehr stark	muy fuerte	Tamazula SM3	9
39. MS (*)	Peduncle: length	Pédoncule : longueur	Blütenstiel: Länge	Pedúnculo: longitud		
QN	(c) short	court	kurz	corto	Milpero Tetela	3
	medium	moyen	mittel	medio	Diamante	5
	long	long	lang	largo	Puebla SM3	7

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
40. MS (*)	Peduncle: thickness at fruit end	Pédoncule : épaisseur à l'extrémité du fruit	Blütenstiel: Dicke am Fruchttende	Pedúnculo: grosor en el extremo proximal		
QN (c)	thin	fin	dünn	delgado	Milpero Tetela	3
	medium	moyen	mittel	intermedio	Diamante	5
	thick	épais	dick	grueso	Tecozautla 04	7
41. VS (+)	Fruit: firmness	Fruit : fermeté	Frucht: Festigkeit	Fruto: firmeza		
QN (c)	soft	mou	weich	blanda	Rendidora Precoz	3
	medium	moyen	mittel	mediana	Diamante	5
	firm	ferme	fest	firme	Tamazula SM3	7
42. MG (+)	Fruit: density of flesh (ratio weight/volume)	Fruit : densité de la chair (rapport poids/volume)	Frucht: Dichte des Fleisches (Verhältnis Gewicht/Volumen)	Fruto: densidad de la pulpa (relación peso/volumen)		
QN (c)	low	faible	gering	baja	Milpero Tetela	3
	medium	moyenne	mittel	media	Diamante	5
	high	forte	hoch	alta	Yema de Huevo	7
43. MS (*)	Fruit: number of seeds	Fruit : nombre de graines	Frucht: Anzahl Samen	Fruto: número de semillas		
QN (d)	few	petit	gering	pocas	Milpero Tetela	3
	medium	moyen	mittel	medio	Manzano Tepetlixpa	5
	many	grand	groß	muchas	Puebla SM3	7
44. VG	Seed: color	Graine : couleur	Samen: Farbe	Semilla: color		
QL (d)	yellow	jaune	gelb	amarillo	Puebla SM3	1
	brown yellow	jaune brunâtre	braungelb	amarillo pardo	Rendidora Precoz	2
45. VG	Seed: size	Graine : taille	Samen: Größe	Semilla: tamaño		
QN (d)	small	petite	klein	pequeño	Tamazula SM3	3
	medium	moyenne	mittel	medio	Yema de Huevo	5
	large	grande	groß	grande	Tecozautla 04	7

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
46. MG	Time of flowering	Époque de floraison	Zeitpunkt der Blüte	Tiempo a floración		
(+)						
QN	early	précoce	früh	precoz	CHF1 Chapingo	3
	medium	moyenne	mittel	media	Diamante	5
	late	tardive	spät	tardía	Puebla SM3	7
47. MG	Time of harvest maturity	Époque de maturité de récolte	Zeitpunkt der Erntereife	Fruto: Época de madurez comercial		
(+)						
QN	early	précoce	früh	precoz	Yema de Huevo	3
	medium	moyenne	mittel	media	Tecozautla 04	5
	late	tardive	spät	tardía	Salamanca	7
48. MG	Time of physiological maturity	Époque de maturité physiologique	Zeitpunkt der physiologischen Reife	Fruto: época de madurez fisiológica		
(+)						
QN	early	précoce	früh	precoz	CHF1 Chapingo	3
	medium	moyenne	mittel	media	Tamazula SM3	5
	late	tardive	spät	tardía	Cerro Gordo	7
49. MG	Shelf life	Durée de conservation	Haltbarkeit	Vida útil		
(+)						
QN	short	courte	kurz	corta	Manzano Tepetlixpa	3
	medium	moyenne	mittel	intermedia	Tecozautla 04	5
	long	longue	lang	larga	Tamazula SM3	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) Characteristics which should be examined when flowering begins at the fifth node of the four principal branches.
- (b) Characteristics which should be examined at flowering (see Ad. 46). For flower measurements, take at least one of the first three nodes (see Fig. 1).
- (c) Characteristics which should be examined at harvest maturity (see Ad. 47). For fruit observations, take at least one of the first three nodes (see Fig. 1).
- (d) Characteristics which should be examined at physiological maturity (see Ad. 48). For fruit observations, take at least one of the first three nodes (see Fig. 1).

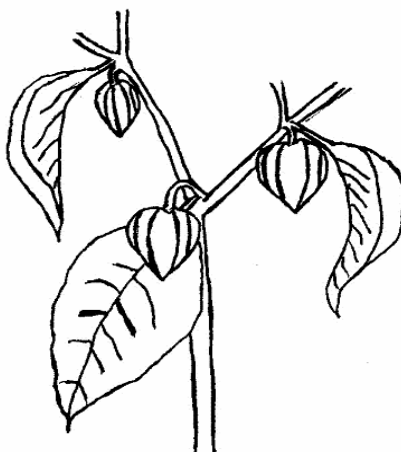


Figure 1. First three nodes of a plant.

8.2 *Explanations for individual characteristics*

Ad. 1: Seedling: anthocyanin coloration of hypocotyl

This characteristic refers to the plant immediately before the development of the first true leaf.

Ad. 2: Plant: growth habit



1
upright



3
semi-upright



5
prostrate

Ad. 8: Leaf blade: shape



1
narrow elliptic



2
medium elliptic



3
broad elliptic

Ad. 11: Leaf blade: dentation of margin



1
absent or weak



2
medium



3
strong

Ad. 14: Petiole: attitude



1
semi-erect



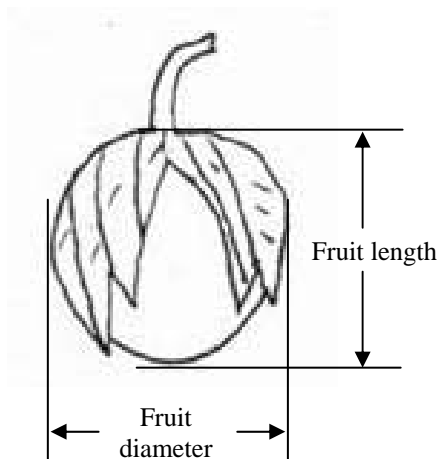
2
intermediate



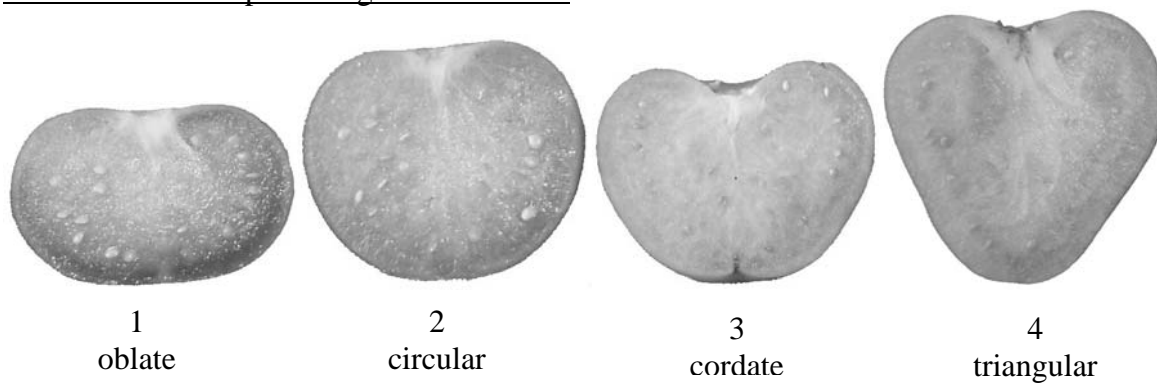
3
drooping

Ad. 20: Fruit: length

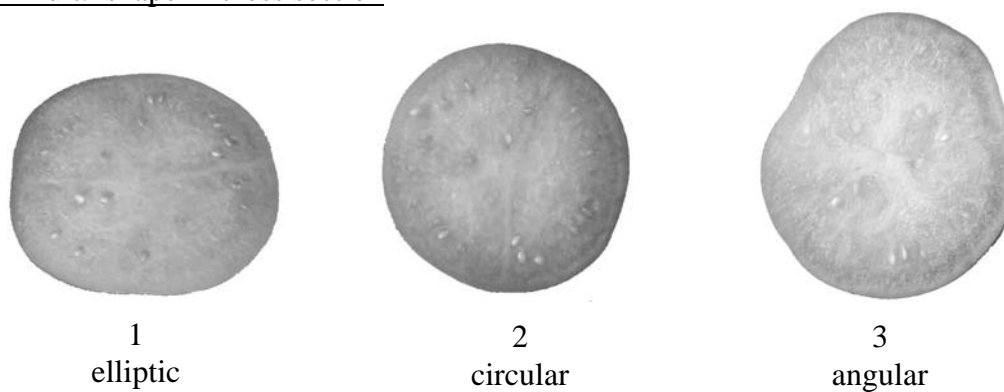
Ad. 21: Fruit: diameter



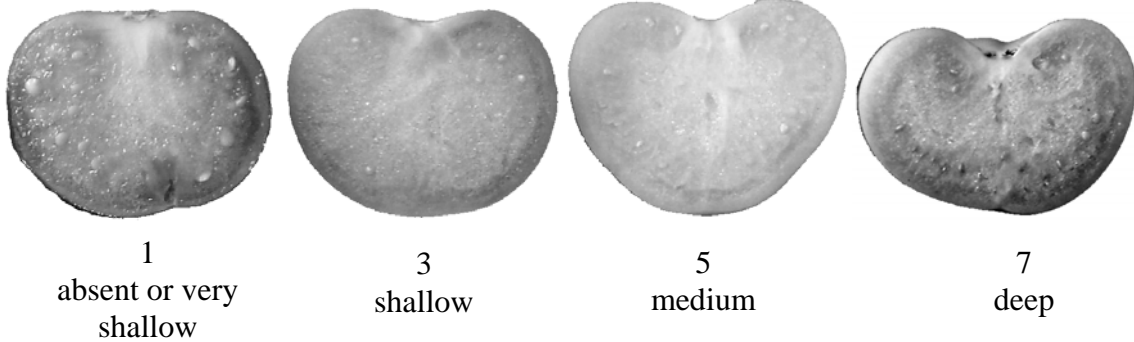
Ad. 23: Fruit: shape in longitudinal section



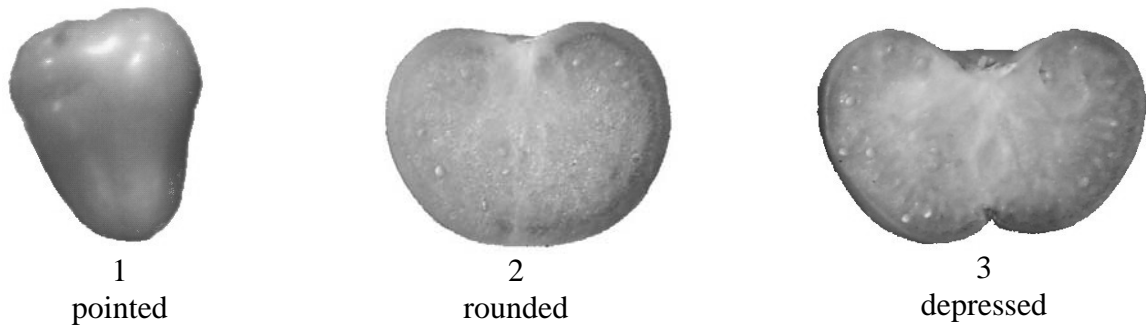
Ad. 24: Fruit: shape in cross section



Ad. 25: Fruit: depth of stalk cavity



Ad. 26: Fruit: shape of apex



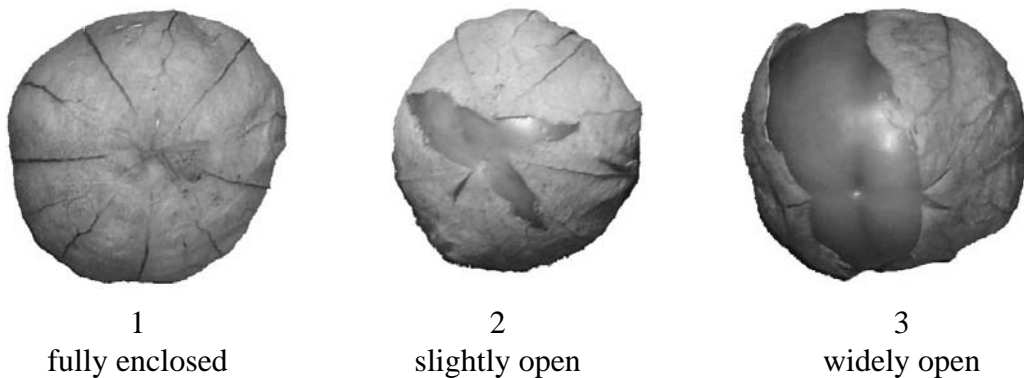
Ad. 28: Fruit: intensity of main color (at harvest maturity)

The intensity of color in each example variety of characteristic 27 should be considered as the intermediate state of expression for each color.

Ad. 30: Fruit: intensity of main color (at physiological maturity)

The intensity of color in each example variety of characteristic 29 should be considered as the intermediate state of expression for each color.

Ad. 34: Fruit: enclosure of calyx



Ad. 36: Calyx: ribbing



1
absent



9
present

Ad. 41: Fruit: firmness

This characteristic should be evaluated by comparing and contrasting the firmness of the candidate variety against the example varieties, using the index finger and the thumb.

Ad. 42: Fruit: density of flesh (ratio weight/volume)

This characteristic should be evaluated by weighing three 10-fruit samples from each replication and measuring their volume by water displacement. The ratio weight/volume is calculated by division.

Ad. 46: Time of flowering

This is the time at which half of the plants have at least one open flower.

Ad. 47: Time of harvest maturity

The time of harvest maturity is when the fruit is fully developed.

Ad. 48: Time of physiological maturity

The time of physiological maturity is when the seed color changes from white to another color.

Ad. 49: Shelf life

The test begins at harvest maturity. One fruit from each plant in each replication and environment is harvested and the 10 fruits from each replication are put in a polyethylene bag. The bags need to be stored inside. The classification is done by comparing and contrasting the candidate variety against the example varieties, verifying the shelf-life of each variety.

9. Literature

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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="Physalis ixocarpa Brot."/>	
1.2 Common Name	<input type="text" value="Husk Tomato"/>	
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:
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#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

4.2.1 Seed-propagated varieties

- (a) Self-pollination []
- (b) Cross-pollination []
- (c) Hybrid []
- (d) Other []
(please provide details)

4.2.2 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: growth habit (2)		
upright	Tamazula SM3	1[]
semi-upright	Diamante	3[]
prostrate	Milpero Tetela	5[]
5.2 Stem: length of internodes (4)		
short	Salamanca	3[]
medium	Diamante	5[]
long	Tecozautla 04	7[]
5.3 Stem: anthocyanin coloration of internodes (5)		
absent	Rendidora Precoz	1[]
present	Morada R	9[]
5.4 Fruit: size (19)		
small	Milpero Tetela	3[]
medium	Tamazula SM3	5[]
large	Diamante	7[]
very large	Tecozautla 04	9[]
5.5 Fruit: main color (at harvest maturity) (27)		
white	Mutante	1[]
green	Rendidora Precoz	2[]
yellow	Manzano Tepetlixpa	3[]
orange	Yema de Huevo	4[]
purple	Tamazula SM3	5[]

TECHNICAL QUESTIONNAIRE		Page {x} of {y}	Reference Number:
Characteristics		Example Varieties	Note
5.6 Calyx: anthocyanin coloration (37)			
absent		CHF1 Chapingo	1[]
present		Tamazula SM3	9[]
5.7 Calyx: intensity of anthocyanin coloration (38)			
very weak			1[]
weak		Manzano Tepetlixpa	3[]
medium		Salamanca	5[]
strong		Morada R	7[]
very strong		Tamazula SM3	9[]
5.8 Peduncle: length (39)			
short		Milpero Tetela	3[]
medium		Diamante	5[]
long		Puebla SM3	7[]
5.9 Peduncle: thickness at fruit end (40)			
thin		Milpero Tetela	3[]
medium		Diamante	5[]
thick		Tecoquantla 04	7[]
5.10 Fruit: number of seeds (43)			
few		Milpero Tetela	3[]
medium		Manzano Tepetlixpa	5[]
many		Puebla SM3	7[]

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
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<i>Example</i>	<i>Fruit: main color (at physiological maturity)</i>	<i>yellow</i>	<i>orange</i>
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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 of 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]