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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

AVOCADO *

UPOV Code: PERSE_AME

Persea americana Mill.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Mexico

to be considered by the Enlarged Editorial Committee at its meeting to be held in Geneva, Switzerland, January 10, 2006

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Persea americana Mill.	Avocado	Avocatier	Avocado	Aguacate, Palto

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 *Persea americana* Mill.

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 graft sticks.

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

8 graft sticks, sufficient to produce 8 trees.

The rootstock to be used is specified by the competent authority.

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

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

3.1.2 The growing cycle is considered to be the period ranging from the beginning of active vegetative growth or flowering, continuing through active vegetative growth or flowering and fruit development and concluding with the harvesting of fruit."

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. In particular, it is essential that the trees produce a satisfactory crop of fruit in each of the two growing cycles."

3.3.2 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least five plants.

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 should be made on 5 plants or parts taken from each of 5 plants. In the case of parts of plants, the number to be taken from each of the plants should be 2.

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, a population standard of 1% and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 5 plants, no 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 or plant 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) Leaf blade: anise aroma (characteristic 18);
(b) Ripe fruit: color (characteristic 49);
(c) Ripe fruit: thickness of skin (characteristic 50);
(d) Time of fruit maturity for harvesting (characteristic 67).

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

(a)-(h) 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. **(*)** **(+)**		**Tree: growth habit**	**Arbre : port**	**Baum: Wuchsform**	**Árbol: porte**		
PQ	**(a)**	upright	dressé	aufrecht	erecto	Bacon, Zutano	1
		spreading	étalé	auseinanderfallend	divergente	Fuerte, Hass	2
		drooping	retombant	überhängend	colgante	Colín V-33	3
		weeping	pleureur	lang überhängend	llorón		4
2. **(*)**		**Young shoot: color**	**Jeune tige : couleur**	**Junger Trieb: Farbe**	**Brote joven: color**		
PQ	**(a)**	yellow green	vert jaune	gelbgrün	verde amarillento	Collinson	1
		green	verte	grün	verde	Benedict, G-22, Teague	2
		reddish	rougeâtre	rötlich	rojizo	Duke 6	3
3.		**Young shoot: color of lenticels**	**Jeune tige : couleur des lenticelles**	**Junger trieb: Farbe der Lentizellen**	**Brote joven: color de las lenticelas**		
PQ	**(a)**	yellow	jaunes	gelb	amarillo		1
		green	vertes	grün	verde	Collinson, G-22	2
		red	rouges	rot	rojo	Benedict, Duke 6	3
		purple	violettes	purpurn	púrpura		4
4.		**Young leaf: color of pubescence of petiole**	**Jeune feuille : couleur de la pilosité du pétiole**	**Junges Blatt: Farbe der Behaarung des Blattstiels**	**Hoja joven: color de la pubescencia del peciolo**		
PQ	**(a)**	white	blanche	weiß	blanco	Edranol	1
	(b)	yellow	jaune	gelb	amarillo	Duke 6	2
		brown	brune	braun	marrón		3
		red brown	brun rouge	rotbraun	marrón rojizo	Fuerte	4

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. **(+)**		**Shoot: length of internode**	**Tige : longueur de l'entre-nœud**	**Trieb: Länge des Internodiums**	**Brote: longitud del internodo**		
QN		short	court	kurz	corto	San Martín	1
		medium	moyen	mittel	medio	Fuerte, Hass	2
		long	long	lang	largo		3
6.		**Leaf: attitude relative to shoot**	**Feuille : orientation par rapport à la tige**	**Blatt: Haltung im Verhältnis zum Trieb**	**Hoja: porte en relación con el brote**		
QN	**(c)**	upwards	vers le haut	aufwärts gerichtet	hacia arriba	G-6	1
		outwards	vers l'extérieur	abstehend	perpendicular	Hass	2
		downwards	vers le bas	abwärts gerichtet	hacia abajo		3
7.		**Leaf blade: length**	**Limbe : longueur**	**Blattspreite: Länge**	**Limbo: longitud**		
QN	**(c)**	very short	très court	sehr kurz	muy corto	San Martín	1
		short	court	kurz	corto	Fuchsia, Puebla, Topa Topa	3
		medium	moyen	mittel	medio	Choquette, Colín V-33, Fuerte	5
		long	long	lang	largo	Barker	7
		very long	très long	sehr lang	muy largo	Encinos	9
8.		**Leaf blade: width**	**Limbe : largeur**	**Blattspreite: Breite**	**Limbo: anchura**		
QN	**(c)**	very narrow	très étroit	sehr schmal	muy estrecho	Duke 7, San Martín	1
		narrow	étroit	schmal	estrecho	Hass, Thomas	3
		medium	moyen	mittel	medio	Choquette, Fuerte	5
		broad	large	breit	ancho	Monroe, Pollock	7
		very broad	très large	sehr breit	muy ancho	Encinos, G755c	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9.		**Leaf blade: ratio length/width**	**Limbe : rapport longueur/largeur**	**Blattspreite: Verhältnis Länge/Breite**	**Limbo: relación longitud/anchura**		
QN	**(c)**	very small	très petit	sehr klein	muy pequeña	Santana	1
		small	petit	klein	pequeña	G755c	3
		medium	moyen	mittel	media	Choquette	5
		large	grand	groß	grande	Mike, Pinkerton	7
		very large	très grand	sehr groß	muy grande	Reed	9
10.		**Leaf blade: shape**	**Limbe : forme**	**Blattspreite: Form**	**Limbo: forma**		
(+)							
PQ	**(c)**	lanceolate	lancéolé	lanzettlich	lanceolada	Collinson	1
		ovate	ovale	eiförmig	oval	Teague	2
		elliptic	elliptique	elliptisch	elíptica	Duke	3
		circular	circulaire	rund	circular	Santana	4
		obovate	obovale	verkehrt eiförmig	oboval	Dilly	5
11.		**Leaf blade: shape of apex**	**Limbe : forme du sommet**	**Blattspreite: Form der Spitze**	**Limbo: forma del ápice**		
(+)							
PQ	**(c)**	acuminate	acuminé	zugespitzt	acuminada	Fuerte	1
		acute	pointu	spitz	aguda	Hass	2
		rounded	arrondi	abgerundet	redondeada	Santana	3
12.		**Leaf blade: twisting along whole length**	**Limbe : torsion sur toute la longueur**	**Blattspreite: Verdrehung auf der ganzen Länge**	**Limbo: torsión en toda la longitud**		
(+)							
QL	**(c)**	absent	absente	fehlend	ausente	Fuerte	1
		present	présente	vorhanden	presente	Zutano	9
13.		**Leaf blade: twisting <u>of apex</u>**	**Limbe : torsion <u>du sommet</u>**	**Blattspreite: Verdrehung der Spitze**	**Limbo: torsión del ápice**		
(+)							
QL	**(c)**	absent	absente	fehlend	ausente	Fuerte	1
		present	présente	vorhanden	presente	Collinson	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14. **(+)**		**Leaf blade: undulation of margin**	**Limbe : ondulation du bord**	**Blattspreite: Wellung des Randes**	**Limbo: ondulación del borde**		
QN	**(c)**	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Duke	1
		weak	faible	gering	débil	Frazer	3
		medium	moyenne	mittel	media	Ettinger	5
		strong	forte	stark	fuerte	Pinkerton	7
		very strong	très forte	sehr stark	muy fuerte	Arturo	9
15.		**Leaf blade: relief of venation on upper surface**	**Limbe : relief de la nervation sur la face supérieure**	**Blattspreite: Art der Aderung auf der Oberseite**	**Limbo: relieve de la nervadura en la parte superior**		
QN	**(c)**	sunken	en creux	eingesunken	hundido	G755c, Topa Topa	1
		level	intermédiaire	intermediär	plano	Duke 7, Fuerte	2
		raised	proéminente	vorgewölbt	protuberante	Edranol, Frazer, Teague	3
16.		**Leaf blade: number of secondary veins**	**Limbe : nombre de nervures secondaires**	**Blattspreite: Anzahl sekundärer Adern**	**Limbo: número de nervios secundarios**		
QN	**(c)**	few	petit	gering	bajo	Aguilar, Hass, Mike	1
		medium	moyen	mittel	medio	Duke 7, Fuerte, Pinkerton	2
		many	grand	groß	elevado	Encinos, G755c	3
17.		**Leaf blade: density of pubescence on lower surface**	**Limbe : densité de la pilosité sur la face inférieure**	**Blattspreite: Dichte der Behaarung an der Unterseite**	**Limbo: densidad de la pubescencia en la parte inferior**		
QN	**(b)**	absent or sparse	absente ou éparse	fehlend oder locker	ausente o laxa	Hass	1
	(c)	medium	moyenne	mittel	media	Edranol	2
		dense	dense	dicht	alta	Duke	3
18. **(*)**		**Leaf blade: anise aroma**	**Limbe : arôme anisé**	**Blattspreite: Anisaroma**	**Limbo: aroma de anís**		
QN	**(c)**	absent or weak	absent ou faible	fehlend oder gering	ausente o débil	Hass, Reed	1
		medium	moyen	mittel	medio	Duke 7	2
		strong	fort	stark	fuerte	Thomas	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.		**Petiole: length**	**Pétiole : longueur**	**Blattstiel: Länge**	**Peciolo: longitud**		
QN	**(c)**	very short	très court	sehr kurz	muy corto	San Martín	1
		short	court	kurz	corto	Aguilar, Reed	3
		medium	moyen	mittel	medio	Frazer, G755c, Mike	5
		long	long	lang	largo	Encinos, Hass	7
		very long	très long	sehr lang	muy largo	Fuerte	9
20. **(+)**		**Inflorescence: length of axis**	**Inflorescence : longueur de l'axe**	**Blütenstand: Länge der Achse**	**Inflorescencia: longitud del eje**		
QN	**(d)**	short	court	kurz	corto	Bacon	3
		medium	moyen	mittel	medio	Fuerte	5
		long	long	lang	largo	Pinkerton	7
21.		**Inflorescence: color of lenticels**	**Inflorescence : couleur des lenticelles**	**Blütenstand: Farbe der Lentizellen**	**Inflorescencia: color de las lenticelas**		
QL	**(d)**	green	vertes	grün	verde	Topa Topa	1
		red	rouges	rot	rojo	Teague	2
22. **(+)**		**Inflorescence: flowering type**	**Inflorescence : type floral**	**Blütenstand: Blühtyp**	**Inflorescencia: tipo de floración**		
QL	**(d)**	type A	type A	Typ A	tipo A	Hass	1
		type B	type B	Typ B	tipo B	Colín V-33, Fuerte	2
23. **(+)**		**Flower: nectary**	**Fleur : nectaire**	**Blüte: Nektarium**	**Flor: nectario**		
QL	**(e)**	sessile	sessile	ungestielt	sésil	Ettinger	1
		stalked	à pédoncules	gestielt	con pedúnculo	Fuerte	2
24. **(+)**		**Flower: style**	**Fleur : style**	**Blüte: Griffel**	**Flor: estilo**		
QL	**(e)**	straight	droit	gerade	derecho	Fuerte	1
		kinked	coudé	geknickt	acodado	Collinson	2

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.		**Flower: pollen**	**Fleur : pollen**	**Blüte: Pollen**	**Flor: polen**		
(+)							
QL		absent	absent	fehlend	ausente	Collinson	1
		present	présent	vorhanden	presente	Aguilar, Fuerte, Hass	9
26.		**Sepal: pubescence of inner surface**	**Sépale : pilosité de la face interne**	**Kelchblatt: Behaarung an der Innenseite**	**Sépalo: pubescencia de la parte interna**		
QL	**(b)**	absent	absente	fehlend	ausente	Pollock	1
	(e)	present	présente	vorhanden	presente	Duke, Hass	9
27.		**Sepal: density of pubescence of inner surface**	**Sépale : densité de la pilosité de la face interne**	**Kelchblatt: Dichte der Behaarung der Innenseite**	**Sépalo: densidad de la pubescencia de la parte interna**		
QN	**(b)**	sparse	faible	locker	laxa	Hass	3
	(e)	medium	moyenne	mittel	media		5
		dense	forte	dicht	elevada	Duke	7
28. **(*)**		**Mature fruit: length**	**Fruit à maturité de cueillette : longueur**	**Erntereife Frucht: Länge**	**Fruto maduro: longitud**		
QN	**(f)**	very short	très court	sehr kurz	muy corto	Mexicola, Northrup	1
		short	court	kurz	corto	Dickinson, Edranol, Fuerte	3
		medium	moyen	mittel	medio	Avis, Hellen	5
		long	long	lang	largo	Cellon's Hawaii Seedling	7
		very long	très long	sehr lang	muy largo	Lima Late, Telsen	9
29. **(*)**		**Mature fruit: maximum diameter**	**Fruit à maturité de cueillette : diamètre maximum**	**Erntereife Frucht: maximaler Durchmesser**	**Fruto maduro: diámetro máximo**		
QN	**(f)**	very small	très petit	sehr klein	muy pequeño	Mexicola, Northrup	1
		small	petit	klein	pequeño	Dickinson, Edranol, Fuerte	3
		medium	moyen	mittel	medio	Avis, Hellen	5
		large	gros	groß	grande	Cellon's Hawaii Seedling	7
		very large	très gros	sehr groß	muy grande	Lima Late, Telsen	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30. **(*)**		**Mature fruit: ratio length/maximum diameter**	**Fruit à maturité de cueillette : rapport longueur/diamètre maximum**	**Erntereife Frucht: Verhältnis Länge/maximaler Durchmesser**	**Fruto maduro: relación longitud/diámetro máximo**		
QN	**(f)**	very small	très petit	sehr klein	muy pequeña	Trapp	1
		small	petit	klein	pequeña	Monroe	3
		medium	moyen	mittel	media	Carlsbad, Lima Late, Topa Topa	5
		large	grand	groß	grande	#86	7
		very large	très grand	sehr groß	muy grande	Telsen	9
31. **(+)**		**Mature fruit: shape of stalk end**	**Fruit à maturité de cueillette : forme à l'extrémité du pédoncule**	**Erntereife Frucht: Form des Stielendes**	**Fruto maduro: forma del extremo peduncular**		
PQ	**(f)**	pointed	pointu	spitz	en punta	Dickinson, Frazer	1
		narrowly rounded	arrondi étroit	schmal abgerundet	redondeado estrecho	Carlsbad, Edranol, Sharwil	2
		broadly rounded	arrondi large	breit abgerundet	redondeado ancho	Esther, Hashimoto, Nimlioh	3
		truncate	tronqué	stumpf	truncada	Lamb Hass, Mayo, Puebla	4
32. **(+)**		**Mature fruit: presence of neck**	**Fruit à maturité de cueillette : présence d'un collet**	**Erntereife Frucht: Vorhandensein des Halses**	**Fruto maduro: cuello**		
QL	**(f)**	absent	absent	fehlend	ausente	Hashimoto, Hass, Lamat	1
		present	présent	vorhanden	presente	Akbal, Fuerte, Horshim	9
33. **(+)**		**Mature fruit: presence of depression at stalk end**	**Fruit à maturité de cueillette : présence d'une dépression à l'extrémité du pédoncule**	**Erntereife Frucht: Vorhandensein der Einsenkung am Stielende**	**Fruto maduro: depresión del extremo peduncular**		
QL	**(f)**	absent	absente	fehlend	ausente	Jim, Sharwil, Wurtz	1
		present	présente	vorhanden	presente	Maxima, Simmonds, Trapp	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
34. **(+)**		**Mature fruit: diameter of stalk attachment**	**Fruit à maturité de cueillette : diamètre de la fixation pédonculaire**	**Erntereife Frucht: Durchmesser des Stielansatzes**	**Fruto maduro: diámetro de la inserción peduncular**		
QN	**(f)**	small	petit	klein	pequeño	Frazer	3
		medium	moyen	mittel	medio	Fuerte	5
		large	grand	groß	grande	Encinos	7
35.		**Mature fruit: position of stalk**	**Fruit à maturité de cueillette : position du pédoncule**	**Erntereife Frucht: Sitz des Stiels**	**Fruto maduro: posición del pedúnculo**		
QN	**(f)**	along axis	le long de l'axe	entlang der Achse	a lo largo del eje	G-22, Nabal, Simmonds	1
		slightly oblique	légèrement oblique	leicht seitlich	ligeramente oblicuo	Fuerte, Rincon	2
		strongly oblique	fortement oblique	stark seitlich	muy oblicuo	Hayes, Whitsell	3
36. **(+)**		**Mature fruit: shape at stylar region**	**Fruit à maturité de cueillette : forme de la région stylaire**	**Erntereife Frucht: Form in der Griffelregion**	**Fruto maduro: forma de la parte en la que se encuentran los estilos**		
PQ	**(f)**	pointed	pointue	spitz	en punta	Lamat, Mexicola	1
		rounded	arrondie	abgerundet	redondeada		2
		flattened	aplatie	eben	aplanada	Dade, Stewart, Trapp	3
		slightly depressed	légèrement déprimée	leicht eingesenkt	ligeramente deprimida	Gordo, Irving, Nimlioh	4
		deeply depressed	profondément déprimée	tief eingesenkt	muy deprimida	Duke	5
37.		**Mature fruit: conspicuousness of lenticels**	**Fruit à maturité de cueillette : netteté des lenticelles**	**Erntereife Frucht: Ausprägung der Lentizellen**	**Fruto maduro: presencia de lenticelas**		
QN	**(f)**	inconspicuous or weak	peu nettes	undeutlich oder gering	imperceptible o débil	Topa Topa	1
		medium	moyennement nettes	mittel	media	Fuerte	2
		strong	très nettes	deutlich	elevada	Carlsbad, Stewart	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
38.		**Mature fruit: size of lenticels**	**Fruit à maturité de cueillette : taille des lenticelles**	**Erntereife Frucht: Größe der Lentizellen**	**Fruto maduro: tamaño de lenticelas**		
QN	**(f)**	small	petites	klein	pequeño	Rincon	3
		medium	moyennes	mittel	medio	Fuerte, Stewart	5
		large	grandes	groß	grande	Ettinger	7
39.		**Mature fruit: color of lenticels**	**Fruit à maturité de cueillette : couleur des lenticelles**	**Erntereife Frucht: Farbe der Lentizellen**	**Fruto maduro: color de las lenticelas**		
PQ	**(f)**	cream	crème	cremefarben	crema	Biscayne Seedling	1
		yellow	jaunes	gelb	amarillo	Fuerte	2
		light green	vert pâle	hellgrün	verde claro	Akbal	3
		brown	brunes	braun	marrón	Aycock Red 3, Carlsbad	4
40.		**Mature fruit: glossiness**	**Fruit à maturité de cueillette : brillance**	**Erntereife Frucht: Glanz**	**Fruto maduro: brillo**		
QN	**(f)**	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	Fuerte, Horshim	1
		medium	moyenne	mittel	medio	Ettinger, Zutano	2
		strong	forte	stark	fuerte	Simmonds, Topa Topa	3
41. **(*)**		**Mature fruit: surface**	**Fruit à maturité de cueillette : surface**	**Erntereife Frucht: Oberfläche**	**Fruto maduro: superficie**		
QN	**(f)**	very smooth	très lisse	sehr glatt	muy lisa	Duke, Simmonds, Topa Topa	1
		smooth	lisse	glatt	lisa	Bacon, Ettinger	3
		medium	moyenne	mittel	media	Alboyce, Fuerte, Horshim	5
		rough	rugueuse	rauh	rugosa	Hass, Whitsell	7
		very rough	très rugueuse	sehr rauh	muy rugosa	Dickinson	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
42.		**Mature fruit: persistence of perianth**	**Fruit à maturité de cueillette : persistance du périanthe**	**Erntereife Frucht: Ausdauern der Blütenhülle**	**Fruto maduro: persistencia del perianto**		
QN	**(f)**	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	Hass	1
		medium	moyenne	mittel	media	Colín V-33, Lypps	2
		strong	forte	stark	fuerte	Irving, Jim	3
43. **(+)**		**Pedicel: thickness compared to peduncle (at junction)**	**Pédicelle : épaisseur par rapport au pédoncule (à la jonction)**	**Fruchtstiel: Dicke im Verhältnis zum zum Fruchtstiel (an der Verbindungsstelle)**	**Pedicelo: grosor en comparación con el pedúnculo (en la intersección)**		
QL	**(g)**	same	même épaisseur	gleich	igual	Ettinger, Simmonds	1
		thicker	plus épais	dicker	mayor	Collinson, Dade	2
44. **(*)**		**Pedicel: length**	**Pédicelle : longueur**	**Fruchtstiel: Länge**	**Pedicelo: longitud**		
QN	**(g)**	short	court	kurz	corto	Pollock	3
		medium	moyen	mittel	medio	Fuerte	5
		long	long	lang	largo	G-22, Hass	7
45. **(*)** **(+)**		**Pedicel: shape**	**Pédicelle : forme**	**Fruchtstiel: Form**	**Pedicelo: forma**		
QL	**(g)**	cylindrical	cylindrique	zylindrisch	cilíndrica	Horshim, Iriet, Teague	1
		conical	conique	kegelförmig	cónica	Dunedin, Edranol, Monroe	2
46. **(*)** **(+)**		**Pedicel: "nailhead"**	**Pédicelle : en forme de tête de clou**	**Fruchtstiel: „Nagelkopfform“**	**Pedicelo: "cabeza de clavo"**		
QL	**(g)**	absent	absente	fehlend	ausente	Duke, Edranol, Wurtz	1
		present	présente	vorhanden	presente	Maxima, Pollock	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
47.		**Pedicel: color**	**Pédicelle : couleur**	**Fruchtstiel: Farbe**	**Pedicelo: color**		
PQ	**(g)**	yellow	jaune	gelb	amarillo	Aycock Red 3, Duke	1
		yellow green	vert jaune	gelbgrün	verde amarillento	Hass, Iriet	2
		green	vert	grün	verde	Alboyce, Lamat	3
		green brown	brun vert	grünbraun	marrón verdoso	Horshim	4
		reddish	rougeâtre	rötlich	rojizo	Wurtz	5
48.		**Pedicel: surface**	**Pédicelle : surface**	**Fruchtstiel: Oberfläche**	**Pedicelo: superficie**		
QL	**(g)**	smooth	lisse	glatt	lisa	Duke, Ferdyn, Topa Topa	1
		wrinkled	ridée	gerieft	arrugada	Edranol, Ettinger	2
49. **(*)**		**Ripe fruit: color**	**Fruit à maturité de consommation : couleur**	**Eßreife Frucht: Farbe**	**Fruto maduro: color**		
PQ	**(h)**	yellow green	vert jaune	gelbgrün	verde amarillo	Melendez	1
		light green	vert clair	hellgrün	verde claro	Marsheline, Mayo	2
		medium green	vert moyen	mittelgrün	verde medio	Greengold, Rincon, Zutano	3
		dark green	vert foncé	dunkelgrün	verde oscuro	Ahaheim, Colín V-33, Edranol	4
		reddish	rougeâtre	rötlich	rojizo	Los Moros	5
		medium purple	violet moyen	mittelpurpurn	púrpura medio		6
		dark purple or black	violet foncé ou noir	dunkelpurpurn oder schwarz	púrpura oscuro o negro	Hass, Topa Topa	7
50. **(*)**		**Ripe fruit: thickness of skin**	**Fruit à maturité de consommation : épaisseur de l'épiderme**	**Eßreife Frucht: Dicke der Schale**	**Fruto maduro: grosor de la cáscara**		
QN	**(h)**	very thin	très fin	sehr dünn	muy fina	Mexicola, Topa Topa	1
		moderately thin	modérément fin	mäßig dünn	moderadamente fina	Colín V-33, Fuerte	3
		medium	moyen	mittel	media	Edranol	5
		moderately thick	modérément épais	mäßig dick	moderadamente gruesa	Hass	7
		very thick	très épais	dick	muy gruesa	Dickinson	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
51. **(+)**		**Ripe fruit: consistency of skin**	**Fruit à maturité de consommation : consistance de l'épiderme**	**Eßreife Frucht: Konsistenz der Schale**	**Fruto maduro: consistencia de la cáscara**		
QL	**(h)**	membranous	membraneux	membranartig	membranosa	Ettinger, Teague, Topa Topa	1
		leathery	coriace	lederartig	áspera	Edranol, Pollock, Santana	2
		corky	liégeux	korkartig	rugosa	G-22, Nabal	3
52. **(+)**		**Ripe fruit: adherence of skin to flesh**	**Fruit à maturité de consommation : adhérence de l'épiderme à la chair**	**Eßreife Frucht: Anhaften der Schale am Fleisch**	**Fruto maduro: adherencia de la cáscara a la pulpa**		
QN	**(h)**	weak	faible	gering	débil	Edranol, Fuerte	1
		medium	moyenne	mittel	media	Sharwil	2
		strong	forte	stark	fuerte	Ettinger, Nabal, Teague	3
53.		**Ripe fruit: main color of flesh**	**Fruit à maturité de consommation : couleur principale de la chair**	**Eßreife Frucht: Hauptfarbe des Fleisches**	**Fruto maduro: color principal de la pulpa**		
PQ	**(h)**	whitish	blanchâtre	weißlich	blanquecino	Hazzard	1
		cream	crème	cremefarben	crema	Bacon, Ettinger, Zutano	2
		yellow	jaune	gelb	amarillo	Hayes, Nabal	3
		light green	vert clair	hellgrün	verde claro	G-6, San Miguel	4
54.		**Ripe fruit: color of layer next to skin**	**Fruit à maturité de consommation : couleur de la zone proche de l'épiderme**	**Eßreife Frucht: Farbe der Fleischschicht nahe der Schale**	**Fruto maduro: color de la capa pegada a la cáscara**		
PQ	**(h)**	light green	vert clair	hellgrün	verde claro	Santana	1
		medium green	vert moyen	mittelgrün	verde medio	Hass, Sharwil, Sir Prize	2
		yellow green	vert jaune	gelbgrün	verde amarillento	Duke	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
55.		**Ripe fruit: width of layer next to skin**	**Fruit à maturité de consommation : largeur de la zone proche de l'épiderme**	**Eßreife Frucht: Breite der Fleischschicht nahe der Schale**	**Fruto maduro: anchura de la capa pegada a la cáscara**		
QN	**(h)**	narrow	étroite	schmal	estrecha	Duke, Santana	3
		medium	moyenne	mittle	media	Colín V-33, Fuerte, Santana	5
		broad	large	breit	ancha	Edranol, Reed, Whitsell	7
56.		**Ripe fruit: conspicuousness of fibers in flesh**	**Fruit à maturité de consommation : netteté des fibres dans la chair**	**Eßreife Frucht: Ausprägung der Fasern im Fleisch**	**Fruto maduro: presencia de fibras en la pulpa**		
QL	**(h)**	inconspicuous	peu nettes	undeutlich	imperceptibles	Fuerte, Santana	1
		conspicuous	nettes	deutlich	presentes	Edranol, Ettinger, Ryan	2
57.		**Ripe fruit: consistency of flesh**	**Fruit à maturité de consommation : consistance de la chair**	**Eßreife Frucht: Konsistenz des Fleisches**	**Fruto maduro: consistencia de la pulpa**		
PQ	**(h)**	watery	aqueuse	wäßrig	acuosa	Simmonds	1
		buttery	beurrée	buttrig	grasienta	Fuerte, Hass	2
		dry	sèche	trocken	seca	Fundación II	3
		granular	granuleuse	körnig	granulosa		4
58.		**Ripe fruit: anise aroma of flesh**	**Fruit à maturité de consommation : arôme anisé de la chair**	**Eßreife Frucht: Anisaroma des Fleisches**	**Fruto maduro: aroma de anís de la pulpa**		
QL	**(h)**	absent	absent	fehlend	ausente	Aguilar, Hass, Lamb Hass	1
		present	présent	vorhanden	presente	Mexicola	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
59.		**Ripe fruit: ratio fruit length/seed length**	**Fruit à maturité de consommation : rapport longueur du fruit/longueur du noyau**	**Eßreife Frucht: Verhältnis Länge der Frucht/Länge des Kerns**	**Fruto maduro: relación longitud del fruto/longitud de la semilla**		
QN	**(h)**	very small	très petit	sehr klein	muy pequeña	Toltec	1
		small	petit	klein	pequeña	Bacon, Ettinger	3
		medium	moyen	mittel	media	Hashimoto, Hass, Lamat	5
		large	grand	groß	grande	T181	7
		very large	très grand	sehr groß	muy grande	Carlsbad	9
60. **(+)**		**Seed: shape in longitudinal section (lateral view)**	**Noyau : forme en section longitudinale (vue latérale)**	**Kern: Form im Längsschnitt**	**Semilla: forma en sección longitudinal (vista lateral)**		
PQ	**(h)**	triangular	triangulaire	dreieckig	triangular	Simmonds, Telsen, Zutano	1
		ovate	ovale	eiförmig	oval	Anaheim, Colín V-33, Rincon	2
		depressed ovate	ovale déprimé	eingesenkt eiförmig	oval deprimida	Carlsbad, Nowels	3
		elliptic	elliptique	elliptisch	elíptica	Jan Boyce, Lima Late, Topa Topa	4
		circular	circulaire	rund	circular	Lamat, Lamb Hass, Mayapan	5
		oblate	aplati	breitrund	achatada	Hayes, McDonald, Suardia	6
61.		**Seed: shape in cross section**	**Noyau : forme en section transversale**	**Kern: Form im Querschnitt**	**Semilla: forma en sección transversal**		
QL	**(h)**	circular	circulaire	rund	circular	Fuerte	1
		elliptic	elliptique	elliptisch	elíptica	Ryan	2

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
62.		**Seed coat: degree of adherence to flesh**	**Téguments : degré d'adhérence à la chair**	**Schale des Kerns: Grad des Anhaftens am Fleisch**	**Tegumento: grado de adherencia a la pulpa**		
QN	**(h)**	absent or weak	nulle ou faible	fehlend oder gering	ausente o débil	Zutano	1
		medium	moyenne	mittel	media	Northrup, Topa Topa	2
		strong	forte	stark	fuerte	Colín V-33, Fuerte, Hass	3
63.		**Seed coat: degree of adherence to cotyledon**	**Téguments : degré d'adhérence au cotylédon**	**Schale des Kerns: Grad des Anhaftens am Keimblatt**	**Tegumento: grado de adherencia al cotiledón**		
QN	**(h)**	absent or weak	nulle ou faible	fehlend oder gering	ausente o débil	Akbal, Aycock Red #3, Hardee	1
		medium	moyenne	mittel	medio	Dade	2
		strong	forte	stark	fuerte	Hass, Fuerte	3
64.		**Seed coat: surface**	**Téguments : surface**	**Schale des Kerns: Oberfläche**	**Tegumento: superficie**		
QN	**(h)**	smooth or slightly wrinkled	lisse ou légèrement ridée	glatt oder leicht geschrumpft	lisa o ligeramente arrugada	Hass	1
		moderately wrinkled	modérément ridée	mäßig geschrumpft	moderadamente arrugada	Lula	2
		strongly wrinkled	fortement ridée	stark geschrumpft	muy arrugada	Trapp	3
65.		**Cotyledon: surface**	**Cotylédon : surface**	**Keimblatt: Oberfläche**	**Cotiledón: superficie**		
QL	**(h)**	smooth	lisse	glatt	lisa	Bacon	1
		wrinkled	ridée	geschrumpft	arrugada	Collinson	2
66.		**Time of beginning of flowering**	**Époque du début de la floraison**	**Zeitpunkt des Blühbeginns**	**Época de inicio de la floración**		
QN		early	précoce	früh	precoz	Duke	3
		medium	moyenne	mittel	media	Fuerte	5
		late	tardive	spät	tardía	Hass	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
67. (*)		**Time of fruit maturity for harvesting**	**Époque de maturité de cueillette des fruits**	**Zeitpunkt der Erntereife der Frucht**	**Época de madurez del fruto para la cosecha**		
QN	**(f)**	very early	très précoce	sehr früh	muy precoz	Topa Topa	1
		early	précoce	früh	precoz	Ettinger	3
		medium	moyenne	mittel	media	Fuerte	5
		late	tardive	spät	tardía	Hass, Ryan	7
		very late	très tardive	sehr spät	muy tardía	Reed	9
68.		**Seed multiple sprouting**	**Germination multiple du noyau**	**Mehrfaches Sprießen des Kerns**	**Germinación múltiple de semillas**		
QL		absent	absente	fehlend	ausente	Hass	1
		present	présente	vorhanden	presente	Lula	9

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) Young shoot / Young leaf: All observations on the young shoot and young leaf should be made on the current season's growth, during a period of active growth (flush).

(b) Pubescence: All observations on pubescence should be made with the aid of a magnifying glass.

(c) Leaf: Unless otherwise indicated, all observations on the leaf should be made on mature leaves from branches which are neither bearing fruit nor showing signs of new flush on the outside of the tree. They should be made in the middle third of the current season's growth.

(d) Inflorescence: All observations on the inflorescence should be made at the time of full flowering.

(e) Flower: All observations on the flower should be made during female opening. To determine the flowering type of a variety, the average night and day minimum temperatures should not be below 15 °C and 25 °C, respectively.

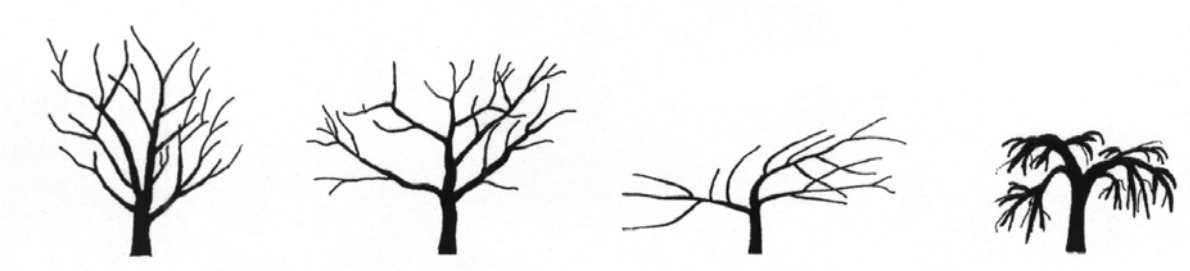
(f) Mature fruit: The mature fruit is defined as the fruit ready for harvesting.

(g) Pedicel: All observations on the pedicel should be made on mature fruits.

(h) Ripe fruit, seed, cotyledon: observations on the ripe fruit, seed and cotyledon which should be made when the fruit is ready for eating.

8.2 Explanations for individual characteristics

Ad. 1: Tree: growth habit

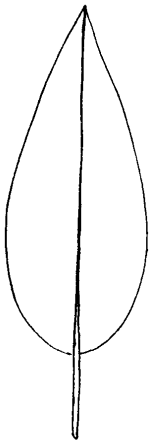


1	2	3	4
upright	spreading	drooping	weeping

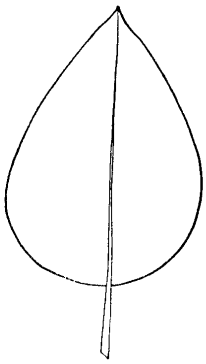
Ad. 5: Shoot: length of internode

To be observed on the middle part of the shoot, after the current season's growth has stopped.

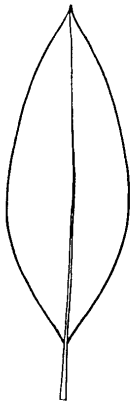
Ad. 10: Leaf blade: shape



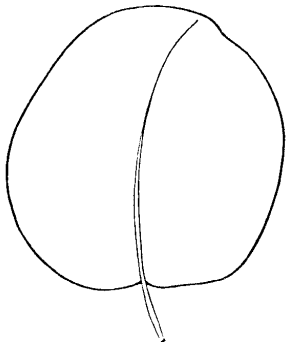
1
lanceolate



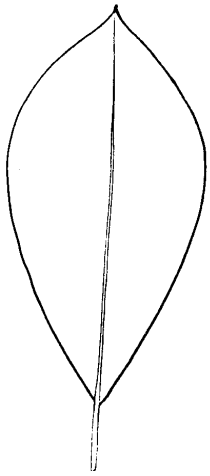
2
ovate



3
elliptic

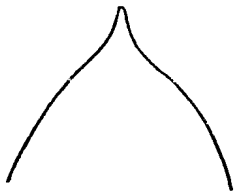


4
circular



5
obovate

Ad. 11: Leaf blade: shape of apex



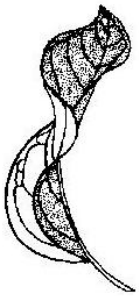
1
acuminate

2
acute

3
rounded

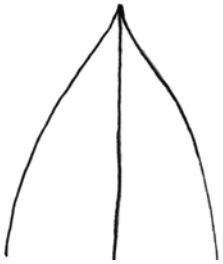
Ad. 12: Leaf blade: twisting along whole length

1
absent

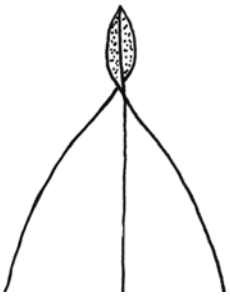


9
present

Ad. 13: Leaf blade: twisting of apex



1
absent



9
present

Ad. 14: Leaf blade: undulation of margin

1
absent or very weak

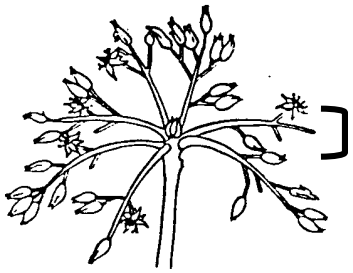
3
weak

5
medium

7
strong

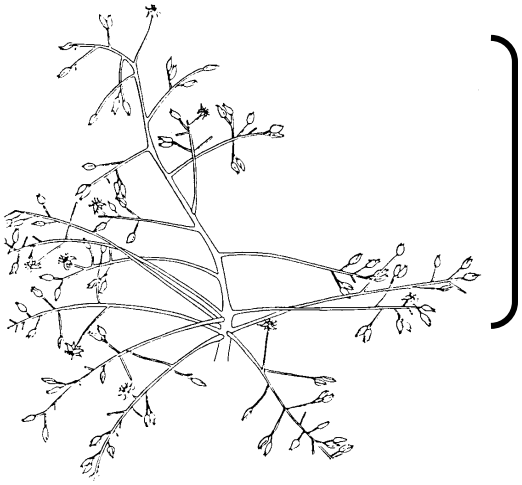
9
very strong

Ad. 20: Inflorescence: length of axis



3
short

5
medium



7
long

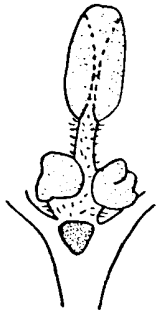
Ad. 22: Inflorescence: flowering type

A flower from inflorescence

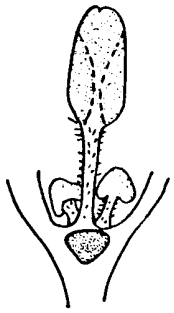
Type		A	B
Day 1	a.m.	open with female parts functional	closed
	p.m.	closed	open with female parts functional
Day 2	a.m.	closed	open with male parts functional
	p.m.	open with male parts functional	closed

Observations should be carried out according to Ish-Am, G. and D. Eisikowitch. 1991: New insight into avocado flowering in relation to its pollination. California Avocado Society Yearbook 75: 125-137.

Ad. 23: Flower: nectary



1
sessile



2
stalked

Ad. 24: Flower: style

1
straight

2
kinked

Ad. 25: Flower: pollen

Observations on the pollen should be made at anther dehiscence of the male stage flower.

Ad. 31: Mature fruit: shape of stalk end

1 pointed | 2 narrowly rounded | 3 broadly rounded | 4 truncate

Ad. 32: Mature fruit: presence of neck

1 absent | 9 present

Ad. 33: Mature fruit: presence of depression at stalk end

1 absent | 9 present

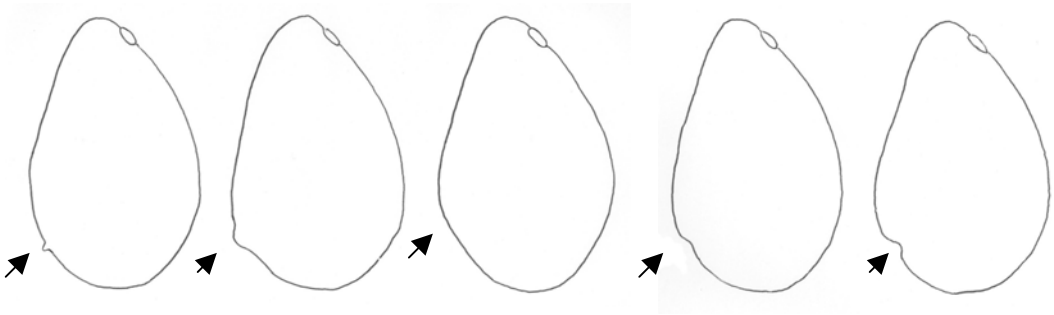
Ad. 34: Mature fruit: diameter of stalk attachment

3
small

5
medium

7
large

Ad. 36: Mature fruit: shape at stylar region



1
pointed

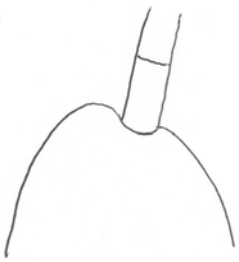
2
rounded

3
flattened

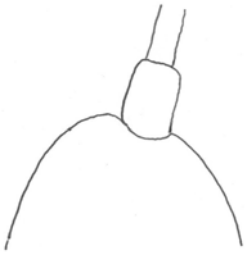
4
slightly
depressed

5
deeply
depressed

Ad. 43: Pedicel: thickness compared to peduncle (at junction)

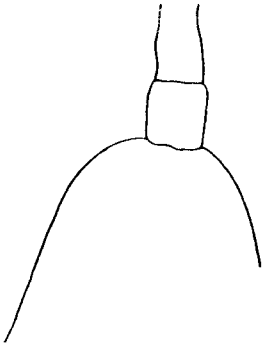


1
same

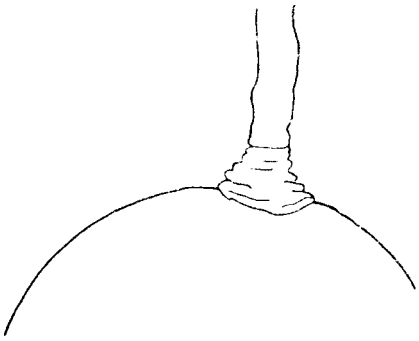


2
thicker

Ad. 45: Pedicel: shape

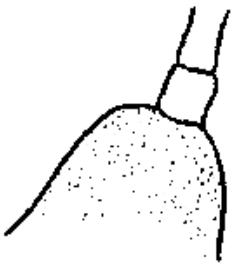


1
cylindrical

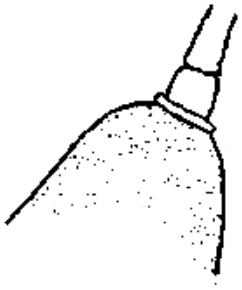


2
conical

Ad. 46: Pedicel: "nailhead"



1
absent



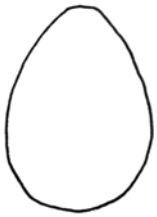
9
present

Ad. 51: Ripe fruit: consistency of skin
Ad. 52: Ripe fruit: adherence of skin to flesh

Should be evaluated by peeling the ripe fruit with the aid of the fingers.

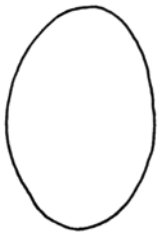
Ad. 60: Seed: shape in longitudinal section (lateral view)

1
triangular

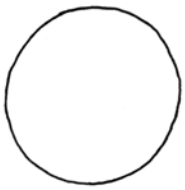


2
ovate

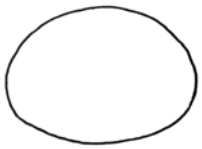
3
depressed ovate



4
elliptic



5
circular



6
oblate

9. Literature

Avilán Rovira, L.; Avilán Rodríguez, L. A,. 1997: Sistema de Información de las fichas de variedades de aguacate del banco de germoplasma – CENIAP. Manual de Usuario y Disco. Fondo Nacional de Investigaciones Agropecuarias, Centro Nacional de Investigaciones Agropecuarias-IICA/CReA/PROCIANDINO/FRUTHEX. Serie D No. 34. Maracay, Venezuela. 19 p.

Barrientos-Priego, A. F.; Ben-Ya'acov, A. D.; de la Cruz-Torres, E.; López-López, L.; Bufler, G.; Borys, M. W., 1991: "Descriptores para aguacate-Descriptors for avocado". Fundación Salvador Sánchez Colín-CICTAMEX, S. C. Coatepec Harinas, Estado de México. México 69 p.

IPGRI, 1995: Descriptors for Avocado (*Persea americana* Mill.). International Genetic Resources Institute (IPGRI-FAO). Rome, Italy. 52 p.

Ish-Am, G.; Eisikowitch, D., 1991: New insight into avocado flowering in relation to its pollination. California Avocado Society Yearbook 75: 125-137. (can be downloaded at www.avocadosource.com)

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	*Persea americana* Mill.
1.2 Common Name	Avocado

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

4.2.1 Vegetative propagation

(a) grafting [ ]

(b) layering (clonal) [ ]

(c) other (state method) [ ]

4.2.2 Seed [ ]

4.2.3 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:

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 (2)	**Young shoot: color**		
	yellow green	Collinson	1[ ]
	green	Benedict, G-22, Teague	2[ ]
	reddish	Duke 6	3[ ]
5.2 (18)	**Leaf blade: anise aroma**		
	absent or weak	Hass, Reed	1[ ]
	medium	Duke 7	2[ ]
	strong	Thomas	3[ ]
5.3 (45)	**Pedicel: shape**		
	cylindrical	Horshim, Iriet, Teague	1[ ]
	conical	Dunedin, Edranol, Monroe	2[ ]
5.4 (46)	**Pedicel: “nailhead”**		
	absent	Duke, Edranol, Wurtz	1[ ]
	present	Maxima, Pollock	9[ ]
5.5 (49)	**Ripe fruit: color**		
	yellow green	Melendez	1[ ]
	light green	Marsheline, Mayo	2[ ]
	medium green	Greengold, Rincon, Zutano	3[ ]
	dark green	Ahaheim, Colín V-33, Edranol	4[ ]
	reddish	Los Moros	5[ ]
	medium purple		6[ ]
	dark purple or black	Hass, Topa Topa	7[ ]

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

	Characteristics	Example Varieties	Note
5.6 (50)	**Ripe fruit: thickness of skin**		
	very thin	Mexicola, Topa Topa	1[ ]
	moderately thin	Colín V-33, Fuerte	3[ ]
	medium	Edranol	5[ ]
	moderately thick	Hass	7[ ]
	very thick	Dickinson	9[ ]
5.7 (67)	**Time of fruit maturity for harvesting**		
	very early	Topa Topa	1[ ]
	early	Ettinger	3[ ]
	medium	Fuerte	5[ ]
	late	Hass, Ryan	7[ ]
	very late	Reed	9[ ]

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
Example	*Mature fruit: stalk cavity*	*e.g. note 1*	*note 9*
		e.g. absent	*present*

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 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]