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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

PERSIMMON *

(*Diospyros kaki* L.)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Latin	*English*	*French*	*German*	*Spanish*
Diospyros kaki L.	Persimmon	Plaqueminier	Kakipflaume	Caqui, Kaki

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as 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 *Diospyros kaki* L. and their hybrids.

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 one-year-old grafted plants on rootstocks of *Diospyros kaki* L. or *Diospyros lotus* L.

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

5 plants.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease. It should preferably not be obtained from *in vitro* propagation. If it has been produced by *in vitro* propagation, this fact must be stated by the applicant.

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 Duration of Tests

The minimum duration of tests should normally be two independent growing cycles. For the purposes of these Test Guidelines, a growing cycle refers to the fruiting cycle.

3.2 Testing Place

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be observed at that place, the variety may be tested at an additional place.

3.3 Conditions for Conducting the Examination

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.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 5 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 determined by measuring or counting 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 minimum duration of tests recommended in Section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.

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.

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 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 is 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) Fruit: general shape in lateral view (characteristic 21);

(b) Varieties with astringency always absent or sometimes present only: Fruit: color of skin (characteristic 37);

(c) Varieties with astringency always present only: Fruit: color of skin (characteristic 38);

(d) Varieties with astringency always absent or sometimes present only: Time of ripeness for eating (characteristic 48);

(e) Varieties with astringency always present only: Time of ripeness for eating (characteristic 49);

(f) Fruit: astringency (characteristic 50).

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 Section 6.1.2

QL Qualitative characteristic – see Section 6.3
QN Quantitative characteristic – see Section 6.3
PQ Pseudo-qualitative characteristic – see Section 6.3

(a)-(d) See Explanations on the Table of Characteristics in Chapter 8, Section 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8, Section 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.	**(a)**	**Tree: vigor**	**Arbre: vigueur**	**Baum: Wuchsstärke**	**Árbol: vigor**		
QN		weak	faible	gering	débil	Akagaki, Izu, Kurogaki	3
		medium	moyenne	mittel	medio	Shogatsu	5
		strong	forte	stark	fuerte	Hiratanenashi, Saijo	7
2. (*)	**(a)**	**Tree: habit**	**Arbre: port**	**Baum: Wuchsform**	**Árbol: porte**		
PQ		upright	dressé	aufrecht	erecto	Saijo	1
		semi-upright	demi-dressé	halbaufrecht	semierecto	Hiratanenashi	2
		spreading	divergent	breitwüchsig	rastrero	Fuyu	3
		drooping	retombant	überhängend	colgante	Shakokushi	4
3. (*)	**(a)**	**One-year-old shoot: length**	**Rameau d'un an: longueur**	**Einjähriger Trieb: Länge**	**Rama de un año: longitud**		
QN		short	court	kurz	corta	Izu	3
		medium	moyen	mittel	media	Suruga	5
		long	long	lang	larga	Fuyu	7
4.	**(a)**	**One-year-old shoot: thickness**	**Rameau d'un an: épaisseur**	**Einjähriger Trieb: Dicke**	**Rama de un año: grosor**		
QN		thin	fin	dünn	delgada	Gosho, Nishimurawase	3
		medium	moyen	mittel	media	Jiro	5
		thick	épais	dick	gruesa	Fuyu, Hiratanenashi	7
5.	**(a)**	**One-year-old shoot: length of internode**	**Rameau d'un an: longueur de l'entre-nœud**	**Einjähriger Trieb: Länge des Internodiums**	**Rama de un año: longitud del entrenudo**		
QN		short	court	kurz	corto	Nishimurawase	3
		medium	moyen	mittel	medio	Gosho	5
		long	long	lang	largo	Fuyu, Gionbo	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	**(a)**	**One-year-old shoot: number of lenticels**	**Rameau d'un an: nombre de lenticelles**	**Einjähriger Trieb: Anzahl Lentizellen**	**Rama de un año: número de lenticelas**		
QN		few	petit	gering	bajo	Toyoka	3
		medium	moyen	mittel	medio	Fuyu, Hiratanenashi, Jiro	5
		many	grand	groß	alto	Amahyakume, Takura	7
7.	**(a)**	**One-year-old shoot: size of lenticels**	**Rameau d'un an: taille des lenticelles**	**Einjähriger Trieb: Größe der Lenti-zellen**	**Rama de un año: tamaño de las lenticelas**		
QN		small	petites	klein	pequeñas	Aizumishirazu, Yotsumizo	3
		medium	moyennes	mittel	medias	Fuyu, Saijo	5
		large	grandes	groß	grandes	Moriya, Takura	7
8.	**(a)**	**One-year-old shoot: shape of lenticels**	**Rameau d'un an: forme des lenticelles**	**Einjähriger Trieb: Form der Lentizellen**	**Rama de un año: forma de las lenticelas**		
PQ		elliptic	elliptiques	elliptisch	elípticas	Fuyu, Hiratanenashi, Jiro	1
		circular	circulaires	kreisförmig	circulares	Hanagosho, Nishimurawase	2
		oblong	oblongues	rechteckig	oblongas	Koshuhyakume	3
9.	**(a)**	**One-year-old shoot: color (sunny side)**	**Rameau d'un an: couleur (face ensoleillée)**	**Einjähriger Trieb: Farbe (Sonnenseite)**	**Rama de un año: color (en la cara soleada)**		
PQ		grey brown	brun gris	graubraun	marrón grisáceo	Sanja, Yotsumizo	1
		yellow brown	brun jaune	gelbbraun	marrón amarillento	Hiratanenashi	2
		brown	brun	braun	marrón	Atago	3
		red brown	brun rouge	rotbraun	marrón rojizo	Fuyu	4
10. **(*)** **(+)**	**(a)**	**One-year-old shoot: shape of bud in profile view**	**Rameau d'un an: forme du bourgeon vu de profil**	**Einjähriger Trieb: Form der Knospe in der Seitenansicht**	**Rama de un año: forma de la yema vista de perfil**		
PQ		triangular	triangulaire	dreieckig	triangular	Aizumishirazu, Fuyu	1
		broad ovate	ovale large	breit eiförmig	ovalada ancha	Jiro, Saijo	2
		circular	circulaire	kreisförmig	circular	Hiratanenashi	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.	**(b)**	**Leaf blade: length**	**Limbe: longueur**	**Blattspreite: Länge**	**Limbo: longitud**		
QN		short	court	kurz	corto	Hanagosho, Hiratanenashi	3
		medium	moyen	mittel	medio	Fuyu, Nishimurawase	5
		long	long	lang	largo	Aizumishirazu, Saijo	7
12.	**(b)**	**Leaf blade: width**	**Limbe: largeur**	**Blattspreite: Breite**	**Limbo: anchura**		
QN		narrow	étroit	schmal	estrecho	Eboshi	3
		medium	moyen	mittel	medio	Fuyu, Jiro	5
		broad	large	breit	ancho	Koshuhyakume	7
13. **(*)** **(+)**	**(b)**	**Leaf blade: shape**	**Limbe: forme**	**Blattspreite: Form**	**Limbo: forma**		
PQ		elliptic	elliptique	elliptisch	elíptica	Aizumishirazu, Fuyu	1
		ovate	ovale	eiförmig	oval	Hanagosho, Hiratanenashi	2
		obovate	obovale	verkehrt eiförmig	oboval	Shakokushi	3
14. **(*)** **(+)**	**(b)**	**Leaf blade: shape of base**	**Limbe: forme de la base**	**Blattspreite: Form der Basis**	**Limbo: forma de la base**		
PQ		narrow acute	aiguë étroite	schmalspitz	aguda estrecha	Eboshi	1
		broad acute	aiguë large	breitspitz	aguda ancha	Aizumishirazu	2
		obtuse	obtuse	stumpf	obtusa	Fuyu, Gosho	3
		rounded	arrondie	abgerundet	redondeada	Amahyakume, Suruga	4
15. **(+)**	**(b)**	**Leaf blade: shape of apex**	**Limbe: forme du sommet**	**Blattspreite: Form der Spitze**	**Limbo: forma del ápice**		
PQ		acuminate	acuminé	mit aufgesetzter Spitze	acuminado	Aizumishirazu	1
		acute	aigu	spitz	agudo	Atago, Fuyu, Jiro, Saijo	2
		obtuse	obtus	stumpf	obtuso	Hiratanenashi, Suruga	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. **(*)**	**(a)**	**Tree: sex expression of flowers**	**Arbre: expression du sexe des fleurs**	**Baum: Geschlechtsausprägung der Blüten**	**Árbol: expresión del sexo de las flores**		
QL		female only	femelles seulement	nur weiblich	sólo femeninas	Fuyu, Hiratanenashi, Jiro	1
		female and male	femelles et mâles	weiblich und männlich	femeninas y masculinas	Hanagosho	2
		female, male and hermaphrodite	femelles, mâles et hermaphrodites	weiblich, männlich und zwittrig	femeninas, masculinas y hermafroditas	Kubogataobishi, Meotogaki	3
17. **(*)**	**(c)**	**Female flower: diameter of corolla**	**Fleur femelle: diamètre de la corolle**	**Weibliche Blüte: Durchmesser der Krone**	**Flor femenina: diámetro de la corola**		
QN		small	petit	klein	pequeño	Kubo, Yotsumizo	3
		medium	moyen	mittel	medio	Aizumishirazu	5
		large	grand	groß	grande	Amahyakume, Koshuhyakume	7
18. **(+)**	**(c)**	**Female flower: shape of calyx viewed from above**	**Fleur femelle: forme du calice vu de dessus**	**Weibliche Blüte: Form des Kelches von oben gesehen**	**Flor femenina: forma del cáliz visto desde arriba**		
PQ		circular	circulaire	kreisförmig	circular	Anzai	1
		rounded rhombic	losangique arrondi	abgerundet rautenförmig	rómbico redondeado	Izu	2
		rhombic	losangique	rautenförmig	rómbico	Aizumishirazu, Fuyu	3
		regular cruciform	cruciforme régulier	regelmäßig kreuzförmig	cruciforme regular	Hiratanenashi, Jiro	4
		irregular cruciform	cruciforme irrégulier	unregelmäßig kreuzförmig	cruciforme irregular	Oshorokaki	5
19. **(*)**	**(c)**	**Female flower: number of corolla lobes**	**Fleur femelle: nombre de lobes de la corolle**	**Weibliche Blüte: Anzahl Kronzipfel**	**Flor femenina: número de lóbulos de la corola**		
QL		four	quatre	vier	cuatro	Koshuhyakume	1
		more than four	plus de quatre	mehr als vier	más de cuatro	Marcatelli	2

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20. (*)	**(d)**	**Fruit: size**	**Fruit: taille**	**Frucht: Größe**	**Fruto: tamaño**		
QN		small	petit	klein	pequeño	Yotsumizo	3
		medium	moyen	mittel	medio	Hiratanenashi, Izu	5
		large	gros	groß	grande	Fuyu, Koshuhyakume	7
21. (*) (+)	**(d)**	**Fruit: general shape in lateral view**	**Fruit: forme générale en vue latérale**	**Frucht: allgemeine Form in der Seitenansicht**	**Fruto: forma general en vista lateral**		
PQ		narrow elliptic	elliptique étroit	schmal elliptisch	elíptico estrecho		1
		elliptic	elliptique	elliptisch	elíptico	Saijo	2
		circular	circulaire	kreisförmig	circular	Aizumishirazu, Amahyakume	3
		oblate	aplati	breitrund	achatado	Fuyu, Izu, Jiro	4
		transverse broad oblong	oblong transversal large	quer breit rechteckig	oblongo ancho transversal	Hiratanenashi	5
		ovate	ovale	eiförmig	oval	Atago, Yotsumizo	6
		broad ovate	ovale large	breit eiförmig	oval ancho	Koshuhyakume	7
		very broad ovate	ovale très large	sehr breit eiförmig	oval muy ancho	Hanagosho	8
22. (*) (+)	**(d)**	**Fruit: general shape in cross section**	**Fruit: forme générale en section transversale**	**Frucht: allgemeine Form im Querschnitt**	**Fruto: forma general en sección transversal**		
PQ		circular	circulaire	kreisförmig	circular	Aizumishirazu, Fuyu	1
		irregular rounded	arrondi irrégulier	unregelmäßig abgerundet	redondeado irregular	Nishimurawase	2
		square	quadrangulaire	quadratisch	cuadrado	Hiratanenashi, Jiro	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23. **(*)** **(+)**	**(d)**	**Fruit: shape of apex in longitudinal section**	**Fruit: forme du sommet en section longitudinale**	**Frucht: Form der Spitze im Längsschnitt**	**Fruto: forma del ápice en sección longitudinal**		
PQ		acuminate	acuminé	mit aufgesetzter Spitze	acuminado	Hoshomaru	1
		obtuse	obtus	stumpf	obtuso		2
		rounded	arrondi	abgerundet	redondeado	Hanagosho, Nishimurawase	3
		truncate	tronqué	abgeflacht	truncado	Akagaki, Fuyu	4
		retuse	échancré	eingedrückt	retuso	Aizumishirazu, Zenjimaru	5
24. **(+)**	**(d)**	**Fruit: grooving at apex**	**Fruit: cannelures au sommet**	**Frucht: Riefung an der Spitze**	**Fruto: acanalado del ápice**		
QN		absent or weak	absentes ou faibles	fehlend oder gering	ausente o débil	Saijo, Suruga	1
		moderate	modérées	mäßig	moderado	Atago, Hanagosho	2
		strong	importantes	stark	fuerte	Aizumishirazu	3
25. **(+)**	**(d)**	**Fruit: shallow concentric cracking around apex**	**Fruit: craquelures concentriques superficielles autour du sommet**	**Frucht: flaches konzentrisches Platzen um die Spitze**	**Fruto: agrietamiento concéntrico superficial alrededor del ápice**		
QN		absent or weak	absentes ou faibles	fehlend oder gering	ausente o débil	Fuyu, Hiratanenashi, Jiro	1
		moderate	modérées	mäßig	moderado	Saijo	2
		strong	importantes	stark	fuerte	Dojohachiya, Ichidagaki	3
26. **(+)**	**(d)**	**Fruit: cracking of apex**	**Fruit: craquelures du sommet**	**Frucht: Platzen der Spitze**	**Fruto: agrietamiento del ápice**		
QN		absent or weak	absentes ou faibles	fehlend oder gering	ausente o débil	Fuyu, Hiratanenashi, Saijo	1
		moderate	modérées	mäßig	moderado	Gosho, Hanagosho	2
		strong	importantes	stark	fuerte	Jiro, Okugosho	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27. **(+)**	**(d)**	**Fruit: longitudinal grooving**	**Fruit: cannelures longitudinales**	**Frucht: Längs-riefung**	**Fruto: acanalado longitudinal**		
QN		absent to very shallow	absentes à très superficielles	fehlend bis sehr flach	ausente a muy superficial	Fuyu, Hiratanenashi	1
		shallow	superficielles	flach	superficial	Mizushima	3
		medium	moyennes	mittel	medio	Jiro	5
		deep	profondes	tief	profundo	Gionbo	7
28.	**(d)**	**Fruit: wrinkles at calyx end**	**Fruit: rides à l'œil**	**Frucht: Runzeln am Kelchende**	**Fruto: arrugas en el extremo del cáliz**		
QN		absent to very few	absentes à très rares	fehlend bis sehr wenige	ausentes a muy pocas	Fuyu, Hiratanenashi	1
		few	rares	wenige	pocas	Akagaki, Koshuhyakume	3
		medium	moyennes	mittel	medias	Jiro	5
		many	nombreuses	viele	muchas	Fujiwaragosho	7
29. **(+)**	**(d)**	**Fruit: calyx attachment**	**Fruit: attache du calice**	**Frucht: Kelchansatz**	**Fruto: inserción del cáliz**		
QN		level	plate	eben	al mismo nivel	Saijo	1
		slightly depressed	légèrement creuse	leicht eingesenkt	ligeramente deprimido	Yotsumizo	2
		strongly depressed	très creuse	stark eingesenkt	fuertemente deprimido	Fuyu, Hiratanenashi, Izu, Jiro	3
30. **(+)**	**(d)**	**Fruit: groove at calyx end**	**Fruit: cannelure à l'œil**	**Frucht: Furche am Kelchende**	**Fruto: acanaladura en el extremo del cáliz**		
QL		absent	absente	fehlend	ausente	Fuyu, Jiro	1
		present	présente	vorhanden	presente	Damopan, Fudegaki	9
31.	**(d)**	**Fruit: cracking at calyx end**	**Fruit: craquelures à l'œil**	**Frucht: Platzen am Kelchende**	**Fruto: agrieta-miento en el extremo del cáliz**		
QN		absent or weak	absentes ou faibles	fehlend oder gering	ausente o débil	Hiratanenashi, Zenjimaru	1
		moderate	modérées	mäßig	moderado	Fuyu	2
		strong	importantes	stark	fuerte	Hanagosho, Suruga	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
32. **(+)**	**(d)**	**Fruit: calyx size compared with fruit diameter**	**Fruit: taille du calice par rapport au diamètre du fruit**	**Frucht: Größe des Kelches im Vergleich zum Durchmesser der Frucht**	**Fruto: tamaño del cáliz en relación con el diámetro del fruto**		
QN		small	petit	klein	pequeño	Naganogosho	3
		medium	moyen	mittel	medio	Atago, Fuyu, Hiratanenashi	5
		large	grand	groß	grande	Amahyakume, Dojohachiya	7
33. **(*)** **(+)**	**(d)**	**Fruit: attitude of calyx**	**Fruit: port du calice**	**Frucht: Haltung des Kelches**	**Fruto: porte del cáliz**		
QN		erect	dressé	aufrecht	erecto	Aizumishirazu, Saijo	1
		semi-erect	demi-dressé	halbaufrecht	semierecto	Hiratanenashi, Jiro	2
		horizontal	horizontal	waagerecht	horizontal	Dojohachiya, Fuyu, Izu	3
34. **(+)**	**(d)**	**Fruit: width of sepal**	**Fruit: largeur du sépale**	**Frucht: Breite des Kelchblattes**	**Fruto: anchura del sépalo**		
QN		narrow	étroit	schmal	estrecho	Kubo, Saijo	3
		medium	moyen	mittel	medio	Akagaki, Hanagosho	5
		broad	large	breit	ancho	Fuyu, Gosho, Jiro, Yotsumizo	7
35.	**(d)**	**Fruit: length of stalk**	**Fruit: longueur du pédoncule**	**Frucht: Länge des Stieles**	**Fruto: longitud del pedúnculo**		
QN		short	court	kurz	corto	Fuyu, Hanagosho, Jiro	3
		medium	moyen	mittel	medio	Hiratanenashi, Saijo	5
		long	long	lang	largo	Fudegaki, Zenjimaru	7
36.	**(d)**	**Fruit: thickness of stalk**	**Fruit: épaisseur du pédoncule**	**Frucht: Dicke des Stieles**	**Fruto: grosor del pedúnculo**		
QN		thin	fin	dünn	delgado	Saijo, Yotsumizo	3
		medium	moyen	mittel	medio	Nishimurawase	5
		thick	épais	dick	grueso	Fuyu, Jiro	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
37. (*) (+)	**(d)**	**Varieties with astringency always absent or sometimes present only: Fruit: color of skin**	**Variétés toujours ou parfois non astringentes seulement: Fruit: couleur de la peau**	**Nur nie oder manchmal adstringierende Sorten: Frucht: Farbe der Haut**	**Sólo variedades que son siempre o a veces no astringentes: Fruto: color de la epidermis**		
PQ		yellow orange	orange jaune	gelborange	naranja amarillento	Shogatsu	1
		orange	orange	orange	naranja	Hazegosho, Yamatogosho	2
		orange red	rouge orangé	orangerot	rojo anaranjado	Fuyu, Izu, Jiro, Nishimurawase	3
		dark purple	pourpre foncé	dunkelpurpurn	púrpura oscuro	Kurogaki	4
38. (*) (+)	**(d)**	**Varieties with astringency always present only: Fruit: color of skin**	**Variétés toujours astringentes seulement: Fruit: couleur de la peau**	**Nur immer adstringierende Sorten: Frucht: Farbe der Haut**	**Sólo variedades que son siempre astringentes: Fruto: color de la epidermis**		
PQ		yellow orange	orange jaune	gelborange	naranja amarillento	Gionbo, Saijo	1
		orange	orange	orange	naranja	Aizumishirazu, Hiratanenashi	2
		red orange	orange rouge	rotorange	naranja rojizo	Koshuhyakume	3
39. (*) (+)	**(d)**	**Varieties with astringency always absent or sometimes present only: Fruit: color of flesh**	**Variétés toujours ou parfois non astringentes seulement: Fruit: couleur de la chair**	**Nur nie oder manchmal adstringierende Sorten: Frucht: Farbe des Fleisches**	**Sólo variedades que son siempre o a veces no astringentes: Fruto: color de la pulpa**		
PQ		yellow	jaune	gelb	amarillo		1
		yellow orange	orange jaune	gelborange	naranja amarillento	Hana-fuyu	2
		orange	orange	orange	naranja	Fuyu, Jiro	3
		orange red	rouge orangé	orangerot	rojo anaranjado	Gosho, Izu, Suruga	4
		brown orange	orange brun	braunorange	naranja pardo	Tipo	5
		brown	brun	braun	marrón	Mercatelli	6

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
40. **(*)** **(+)**	**(d)**	**Varieties with astringency always present only: Fruit: color of flesh**	**Variétés toujours astringentes seulement: Fruit: couleur de la chair**	**Nur immer adstringierende Sorten: Frucht: Farbe des Fleisches**	**Sólo variedades que son siempre astringentes: Fruto: color de la pulpa**		
PQ		yellow	jaune	gelb	amarillo	Damopan	1
		orange yellow	jaune orangé	orangegelb	amarillo anaranjado	Aizumishirazu, Atago, Costata, Saijo	2
		orange	orange	orange	naranja	Cicopersicon, Farmacista-honorati, Triumph, Yokono	3
		red orange	orange rouge	rotorange	naranja rojizo	Tamamoto, Yotsumizo	4
		brown	brun	braun	marrón		5
41. **(+)**	**(d)**	**Fruit: presence of brown specks in flesh**	**Fruit: présence de points bruns dans la chair**	**Frucht: Vorhandensein brauner Flecken im Fleisch**	**Fruto: presencia de manchas marrones en la pulpa**		
QL		always absent	toujours absents	immer fehlend	siempre ausentes	Atago, Saijo	1
		sometimes present	parfois présents	manchmal vorhanden	a veces presentes	Zenjimaru	2
		always present	toujours présents	immer vorhanden	siempre presentes	Fuyu, Jiro	3
42.	**(d)**	**Fruit: size of brown specks in flesh**	**Fruit: taille des points bruns dans la chair**	**Frucht: Größe der braunen Flecken im Fleisch**	**Fruto: tamaño de las manchas marrones en la pulpa**		
QN		small	petits	klein	pequeñas	Fuyu, Jiro	3
		medium	moyens	mittel	medias	Amahyakume, Shogatsu	5
		large	gros	groß	grandes	Nishimurawase, Zenjimaru	7
43.		**Seed: size**	**Pépin: taille**	**Samen: Größe**	**Semilla: tamaño**		
QN		small	petit	klein	pequeña	Gosho	3
		medium	moyen	mittel	media	Nishimurawase	5
		large	gros	groß	grande	Atago, Fuyu	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
44. **(+)**	**Seed: shape in lateral view**	**Pépin: forme en vue latérale**	**Samen: Form in der Seitenansicht**	**Semilla: forma en vista lateral**		
PQ	narrow elliptic	elliptique étroite	schmal elliptisch	elíptica estrecha	Atago, Mercatelli, Saijo	1
	ovate	ovale	eiförmig	oval	Hanagosho, Yokono	2
	broad ovate	ovale large	breit eiförmig	oval ancha	Maekawajiro	3
	semi broad elliptic	semi-elliptique large	halb breitelliptisch	semi elíptica ancha		4
	semi oblate	semi-aplatie	halb breitrund	semi oblata	Fuyu	5
45.	**Seed: color**	**Pépin: couleur**	**Samen: Farbe**	**Semilla: color**		
PQ	green brown	brun gris	grünbraun	marrón verdoso	Saijo	1
	medium brown	brun moyen	mittelbraun	marrón medio	Aizumishirazu, Akagaki	2
	dark brown	brun foncé	dunkelbraun	marrón oscuro	Fuyu, Jiro	3
46. **(*)**	**Time of flowering of female flower (80% open)**	**Époque de floraison de la fleur femelle (80% des fleurs épanouies)**	**Blühzeitpunkt der weiblichen Blüte (80% offen)**	**Época de floración de la flor femenina (80% de las flores abiertas)**		
QN	early	précoce	früh	temprana	Hiratanenashi, Nishimurawase	3
	medium	moyenne	mittel	media	Izu, Jiro	5
	late	tardive	spät	tardía	Fuyu, Gosho	7
47.	**Time of vegetative bud burst**	**Époque de débourrement**	**Zeitpunkt des Aufbruchs der vegetativen Knospe**	**Época de brotación de las yemas de madera**		
QN	early	précoce	früh	temprana	Hiratanenashi	3
	medium	moyenne	mittel	media	Koshuhyakume	5
	late	tardive	spät	tardía	Fuyu	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
48. **(*)** **(+)**	**Varieties with astringency always absent or sometimes present only: Time of ripeness for eating**	**Variétés toujours ou parfois non astringentes seulement: Époque de maturité pour la consommation**	**Nur nie oder manchmal adstringierende Sorten: Zeitpunkt der Genußreife**	**Sólo variedades que son siempre o a veces no astringentes: Época de madurez para el consumo**		
QN	early	précoce	früh	temprana	Izu, Nishimurawase	3
	medium	moyenne	mittel	media	Matsumotowase-fuyu, Mizushima	5
	late	tardive	spät	tardía	Amahyakume, Fuyu, Gosho	7
49. **(*)** **(+)**	**Varieties with astringency always present only: Time of ripeness for eating**	**Variétés toujours astringentes seulement: Époque de maturité pour la consommation**	**Nur immer adstringierende Sorten: Zeitpunkt der Genußreife**	**Sólo variedades que son siempre astringentes: Época de madurez para el consumo**		
QN	early	précoce	früh	temprana	Ichidagaki, Tonewase	3
	medium	moyenne	mittel	media	Hiratanenashi, Koshuhyakume	5
	late	tardive	spät	tardía	Aizumishirazu, Atago	7
50. **(+)**	**Fruit: astringency**	**Fruit: astringence**	**Frucht: Adstringenz**	**Fruto: astringencia**		
QL	always absent	toujours absente	immer fehlend	siempre ausente	Fuyu, Gosho, Jiro	1
	sometimes present	parfois présente	manchmal vorhanden	a veces presente	Nishimurawase, Shogatsu	2
	always present	toujours présente	immer vorhanden	siempre presente	Aizumishirazu, Atago, Koshuhyakume, Saijo	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) Tree/One-year-old shoot: Observations on the tree and the one-year-old shoot should be made during the dormant season. Observations on the one-year-old shoot should be made on the middle third of the shoot.

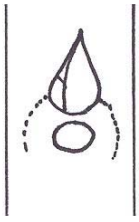
(b) Leaf: Observations on the leaf should be made in summer on fully developed leaves from the middle third of a current season's shoot.

(c) Flower: Observations on the flower should be made on fully developed flowers at full flowering.

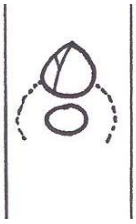
(d) Fruit: Observations on the fruit should be made on fruits at the time of harvest maturity.

8.2 Explanations for individual characteristics

Ad. 10: One-year-old shoot: shape of bud in profile view



1
triangular

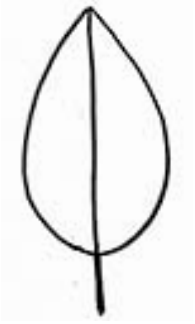


2
broad ovate

3
circular

Ad. 13: Leaf blade: shape

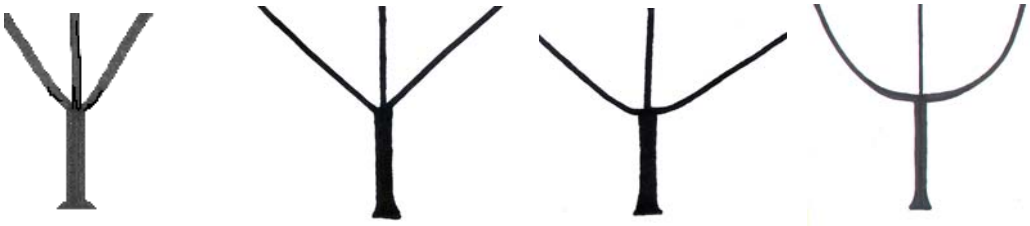
1
elliptic



2
ovate

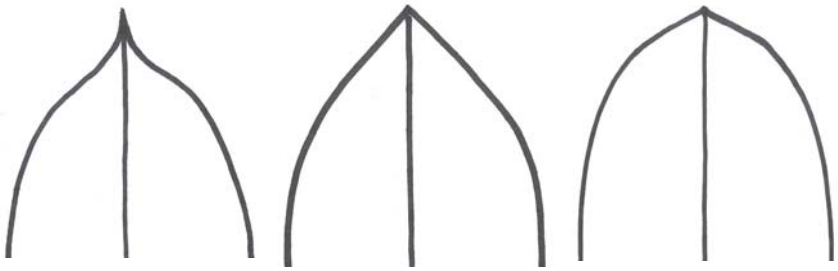
3
obovate

Ad. 14: Leaf blade: shape of base



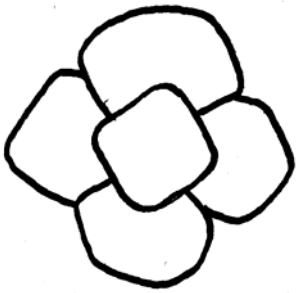
1	2	3	4
narrow acute	broad acute	obtuse	rounded

Ad. 15: Leaf blade: shape of apex

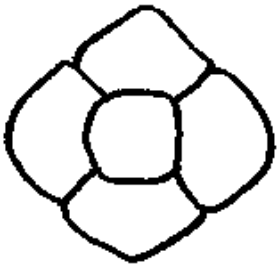


1	2	3
acuminate	acute	obtuse

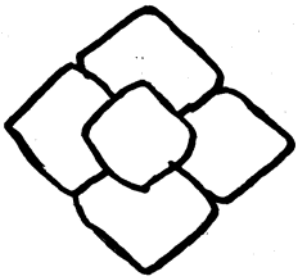
Ad. 18: Female flower: shape of calyx viewed from above



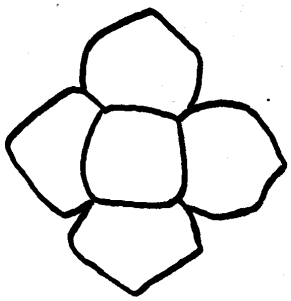
1
circular



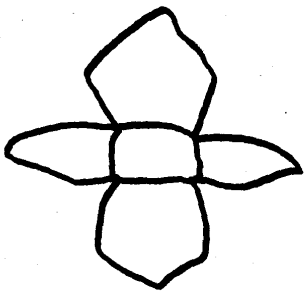
2
rounded rhombic



3
rhombic



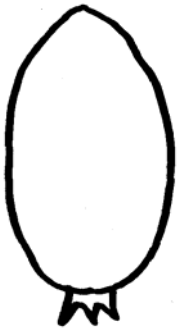
4
regular cruciform



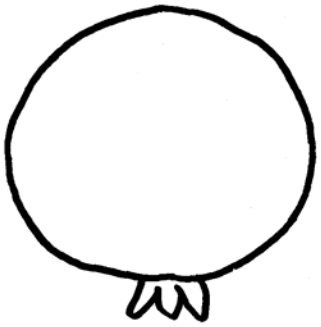
5
irregular cruciform

Ad. 21: Fruit: general shape in lateral view

1
narrow elliptic

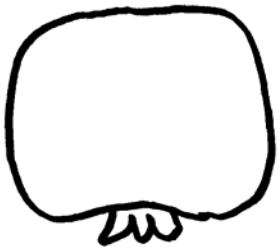


2
elliptic

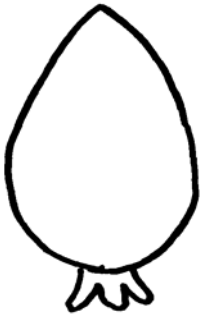


3
circular

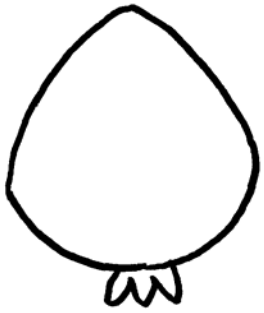
4
oblate



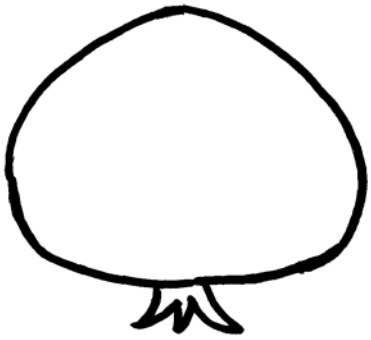
5
transverse broad oblong



6
ovate



7
broad ovate



8
very broad ovate

Ad. 22: Fruit: general shape in cross section

1
circular

2
irregular rounded

3
square

Ad. 23: Fruit: shape of apex in longitudinal section

1
acuminate

2
obtuse

3
rounded

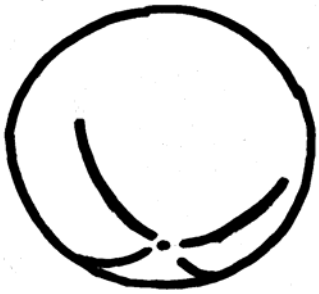
4
truncate

5
retuse

Ad. 24: Fruit: grooving at apex

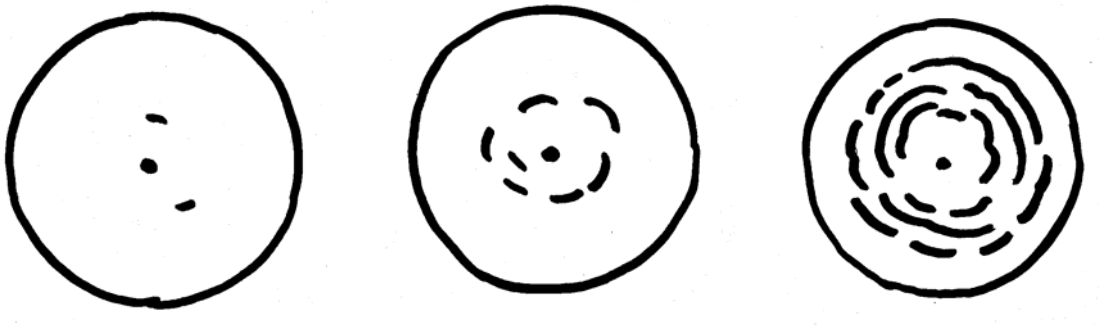
1
absent or weak

2
moderate



3
strong

Ad. 25: Fruit: shallow concentric cracking around apex

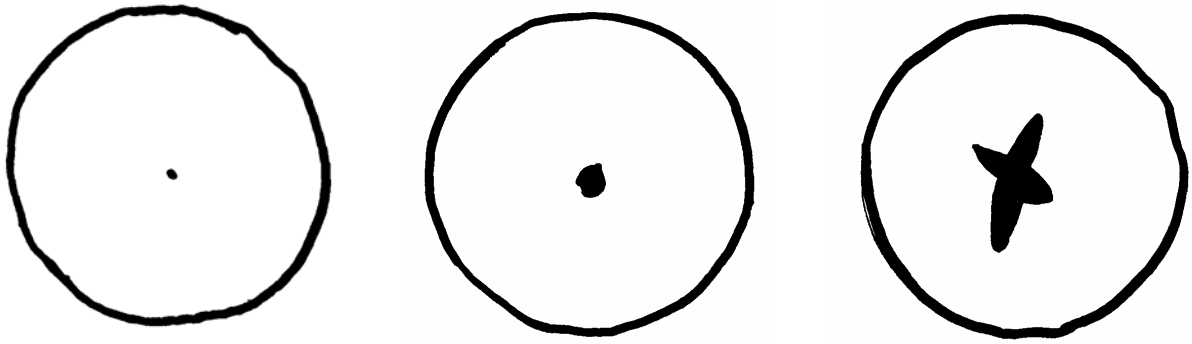


1
absent or weak

2
moderate

3
strong

Ad. 26: Fruit: cracking of apex



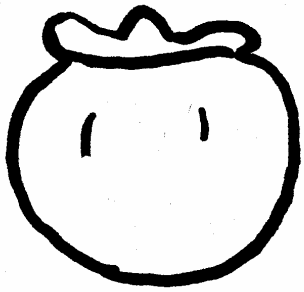
1
absent or weak

2
moderate

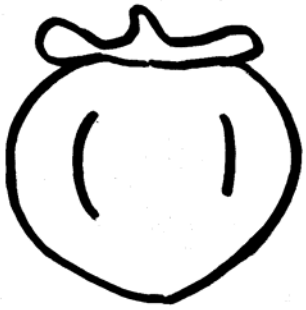
3
strong

Ad. 27: Fruit: longitudinal grooving

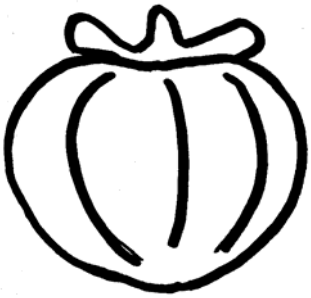
1
absent to very shallow



3
shallow

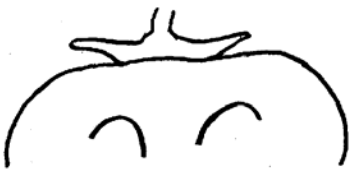


5
medium



7
deep

Ad. 29: Fruit: calyx attachment



1
level

2
slightly depressed

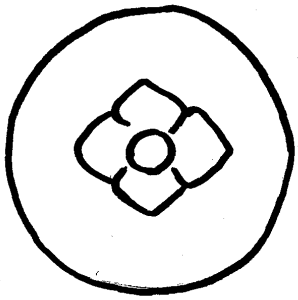
3
strongly depressed

Ad. 30: Fruit: groove at calyx end

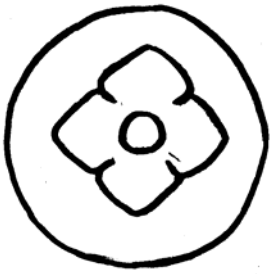
1
absent

9
present

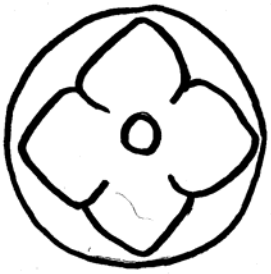
Ad. 32: Fruit: calyx size compared with fruit diameter



3
small

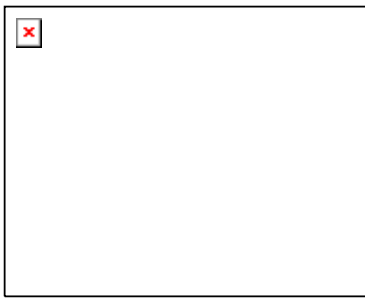


5
medium

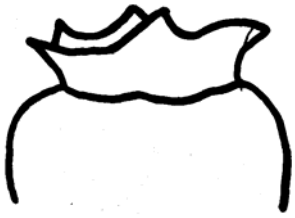


7
large

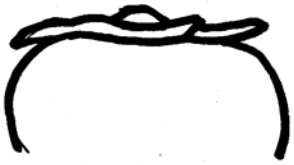
Ad. 33: Fruit: attitude of calyx



1
erect



2
semi-erect



3
horizontal

Ad. 34: Fruit: width of sepal

The width of sepal should be measured as the width of the broadest of the sepals.

Ad. 37; 39; 48: Varieties with astringency always absent or sometimes present only: Fruit: color of skin (37); Fruit: color of flesh (39); Time of ripeness for eating (48)

The time of ripeness for non-astringent varieties is reached when the flesh is still firm and the color of skin changes.

Ad. 38; 40; 49: Varieties with astringency always present only: Fruit: color of skin (38); Fruit: color of flesh (40); Time of ripeness for eating (49)

The time of ripeness for astringent varieties is reached when the flesh becomes soft after post harvest storage. The fruits should be stored at normal room temperature (about 15 ^{o}C), without any chemical or other treatments.

Ad. 41: Fruit: presence of brown specks in flesh

For some varieties, the presence of brown specks in the flesh is pollination variant (state 2). For those varieties, the presence and number of seeds influence the presence of brown specks (see also 8.3 Classification of Persimmon).

Ad. 44: Seed: shape in lateral view

1
narrow elliptic

2
ovate

3
broad ovate

4
semi broad elliptic

5
semi oblate

Ad. 50: Fruit: astringency

For some varieties, astringency is not consistent (state 2). For those varieties, the presence and number of seeds determine astringency (see also 8.3 Classification of Persimmon).

8.3 Classification of Persimmon

Varieties of Persimmon can be classified into Pollination Constant (PC) and Pollination Variant (PV) types, as follow:

(A = Astringent; NA = Non-Astringent)

PC (Pollination Constant) varieties:

- are always astringent or always not astringent;
- have brown specks always present in the flesh or always absent.

PV (Pollination Variant) varieties:

- are always astringent or sometimes astringent (depending on the presence and number of seeds);
- sometimes have brown specks in the flesh (depending on the presence and number of seeds). PV Astringent (PVA) varieties only have brown specks around the seed. PV Non Astringent (PVNA) varieties have brown specks around the seed and sometimes these extend over a wide area of flesh (depending on the number of seeds).

This classification is explained in relation to the states of expression of certain characteristics in the Table of Characteristics in Table 1. Table 2 presents a classification on the basis of a combination of pollination types (PC/PV) and astringency types (A/NA). Table 3 presents the example varieties according to the classification provided in Table 2.

Table1: Classification of Persimmon Varieties in Relation to States of Expression for Characteristics 41 and 50

	State 1 (always absent)	State 2 (sometimes present)	State 3 (always present)
Char. 41 Fruit: presence of brown speck	PCA	PVA PVNA	PCNA
Char. 50 Fruit: astringency	PCNA	PVNA	PVA PCA

Table 2: Classification of Persimmon Varieties on the Basis of a Combination of Pollination Types (PC/PV) and Astringency Types (A/NA)

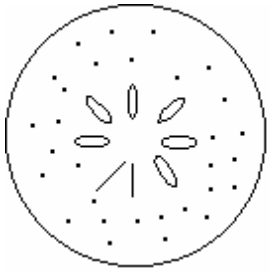
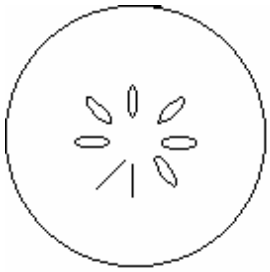
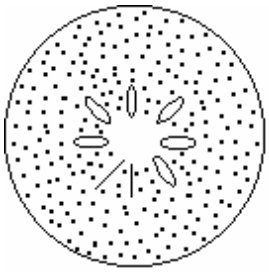
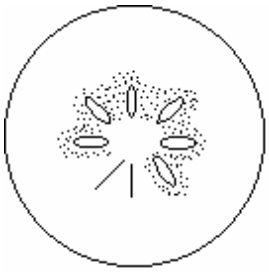
Class	Cross-section	Features
PCNA		Always non-astringent at maturity. Always have small number of brown specks in flesh.
PCA		Always astringent at maturity. Never have brown specks in flesh.
PVNA		Sometimes non-astringent at maturity. Brown specks around seeds and sometimes over a wide area of flesh (the area depends on numbers of seeds).
PVA		Always astringent at maturity. Brown specks around seeds.

Table 3: Classification of Example Varieties

Example Varieties	Type	Example Varieties	Type
Aizumishirazu	PVA	Meotogaki	PCA
Akagaki	PVNA	Marcatelli	PVNA
Akoumankaki	PVNA	Matsumotowase-fuyu	PCNA
Amahyakume	PVNA	Mercatelli	PVNA
Anzai	PVNA	Mikatanigosho	PVNA
Atago	PCA	Mizushima	PVNA
Costata	PCA	Moriya	PCA
Damopan	PCA	Naganogosho	PVNA
Dojohachiya	PCA	Nishimurawase	PVNA
Eboshi	PCA	Obishi	PVNA
Farmacista-honorati	PCA	Ogosho	PCNA
Fudegaki	PVNA	Okugosho	PCA
Fujiwaragosho	PCNA	Oshorokaki	PVNA
Fuyu	PCNA	Saijo	PCA
Gionbo	PCA	Sanja	PCA
Gosho	PCNA	Shakokushi	PCA
Hana–fuyu	PCNA	Shogatsu	PVNA
Hanagosho	PCNA	Square	PCA
Hazegosho	PCNA	Suruga	PCNA
Hiratanenashi	PVA	Takura	PCA
Hoshomaru	PVA	Tamamoto	PCA
Ichidagaki	PCA	Tonewase	PVA
Izu	PCNA	Tipo	PVNA
Jiro	PCNA	Toyoka	PVNA
Koshuhyakume	PVA	Tsurunohashi	PCA
Kubo	PVNA	Yamato	PCA
Kubogataobishi	PVNA	Yamatogosho	PCNA
Kurogaki	PVNA	Yokono	PCA
Lycopersicon	PCA	Yotsumizo	PCA
Maekawajiro	PCNA	Zenjimaru	PVNA

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 Latin Name	*Diospyros kaki* L.
1.2 Common Name	Persimmon

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 unknown 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 Vegetatively propagated varieties

(a) *in vitro* propagation [ ]

(b) other (e.g. leaf cutting, hardwood cutting, layer) [ ]
(state method)

4.2.2 Seed-propagated varieties [ ]

4.2.3 Other [ ]
(please provide details)

4.3 Virus status

4.3.1 The variety is free from all known viruses as follows: [ ]
(indicate from which viruses)

4.3.2 The plant material is virus tested: [ ]
(indicate against which viruses)

4.3.3 The virus status is unknown [ ]

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 (21)	**Fruit: general shape in lateral view**		
	narrow elliptic		1[ ]
	elliptic	Saijo	2[ ]
	circular	Aizumishirazu, Amahyakume	3[ ]
	oblate	Fuyu, Izu, Jiro	4[ ]
	transverse broad oblong	Hiratanenashi	5[ ]
	ovate	Atago, Yotsumizo	6[ ]
	broad ovate	Koshuhyakume	7[ ]
	very broad ovate	Hanagosho	8[ ]
5.2 (37)	**Varieties with astringency always absent or sometimes present only: Fruit color of skin**		
	yellow orange	Shogatsu	1[ ]
	orange	Hazegosho, Yamatogosho	2[ ]
	orange red	Fuyu, Izu, Jiro, Nishimurawase	3[ ]
	dark purple	Kurogaki	4[ ]
5.3 (38)	**Varieties with astringency always present only: Fruit color of skin**		
	yellow orange	Gionbo, Saijo	1[ ]
	orange	Aizumishirazu, Hiratanenashi	2[ ]
	red orange	Koshuhyakume	3[ ]
5.4 (48)	**Varieties with astringency always absent or sometimes present only: Time of ripeness for eating**		
	early	Izu, Nishimurawase	3[ ]
	medium	Matsumotowase-fuyu, Mizushima	5[ ]
	late	Amahyakume, Fuyu, Gosho	7[ ]

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

	Characteristics	Example Varieties	Note
5.5 (49)	**<u>Varieties with astringency always present only</u>: Time of ripeness for eating**		
	early	Ichidagaki, Tonewase	3[ ]
	medium	Hiratanenashi, Koshuhyakume	5[ ]
	late	Aizumishirazu, Atago	7[ ]

6. Similar varieties and differences from these varieties

Please use the table, and space provided for comments, below 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	*Fruit: general shape in lateral view*	*elliptic*	*circular*

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 Special conditions for the examination of the variety

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

Yes [ ] No [ ]

7.2.2 If yes, please give details:

7.3 Other information

A representative colour 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.

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

9. Information on plant material to be examined.

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 or 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]