



These Test Guidelines have been superseded by a later version. The latest adopted version of Test Guidelines can be found at http://www.upov.int/test_guidelines/en/list.jsp

Ces principes directeurs d'examen ont été remplacés par une version ultérieure. La version adoptée la plus récente des principes directeurs d'examen figure à l'adresse suivante : http://www.upov.int/test_guidelines/fr/list.jsp

Diese Prüfungsrichtlinien wurden durch eine neuere Fassung ersetzt. Die neueste angenommene Fassung von Prüfungsrichtlinien ist unter http://www.upov.int/test_guidelines/de/list.jsp zu finden.

Las presentes directrices de examen han sido reemplazadas por una versión posterior. La versión de las directrices de examen de más reciente aprobación está disponible en http://www.upov.int/test_guidelines/es/list.jsp.



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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

ACTINIDIA

UPOV Code: ACTIN

Actinidia Lindl.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names: *

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Actinidia</i> Lindl.	Actinidia, Kiwifruit	Actinidia, Kiwi	Strahlengriffel, Kiwi	Actinidia, Kiwi

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 *Actinidia* Lindl..

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 plants on their own roots or plants on a clonal rootstock. The competent authorities should specify the form of material to be supplied and select the most appropriate rootstock.

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

5 plants on their own roots or,
5 plants on the clonal rootstock as specified by the 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. In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles.

3.1.2 The growing cycle is considered to be the duration of a single growing season, beginning with vegetative bud burst, flowering and fruit harvest and concluding when the following dormant period ends with the swelling of new season buds.

3.2 *Testing Place*

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness".

3.3 *Conditions for Conducting the Examination*

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.3.2 For female varieties, the competent authorities should ensure that an appropriate male variety is available for adequate pollination.

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 *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.

4.1.4 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations should be made on 5 plants or parts taken from each of 5 plants. In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 2.

4.1.5 Method of observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation of characteristics”):

MG: single measurement of a group of plants or parts of plants

MS: measurement of a number of individual plants or parts of plants

VG: visual assessment by a single observation of a group of plants or parts of plants

VS: visual assessment by observation of individual plants or parts of plants

Type of observation: visual (V) or measurement (M)

“Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

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-type is allowed.

4.3 *Stability*

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the initial 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:

For male varieties

- (a) Time of beginning of flowering (characteristic 75)

For female and hermaphrodite varieties (fruiting varieties)

- (a) Fruit: weight (characteristic 46)
- (b) Fruit: shape (characteristic 50)
- (c) Fruit: stylar end (characteristic 52)
- (d) Fruit: hairiness of skin (characteristic 59)
- (e) Fruit: color of outer pericarp (characteristic 65)
- (f) Fruit: color of locules (characteristic 66)
- (g) Time of maturity for harvest (characteristic 76)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

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*

6.2.1 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.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	Note
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	Note
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 “Development of Test Guidelines”.

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. The varieties have particular relevance to *Actinidia arguta*, *A. chinensis*, *A. deliciosa*, *A. melanandra*, *A. kolomikta*, *A. eriantha*, *A. rufa*, *A. polygama* and interspecific hybrids of these species.

Example varieties are separated into two groups:

Group A: All varieties belonging to *A. deliciosa*, *A. chinensis*, *A. kolomikta*, *A. eriantha*, *A. rufa*

Group B: All varieties belonging to *A. arguta*, *A. polygama*, *A. melanandra*, *A. macrosperma*

6.5 *Legend*

(*) Asterisked characteristic – see Chapter 6.1.2

QL Qualitative characteristic – see Chapter 6.3

QN Quantitative characteristic – see Chapter 6.3

PQ Pseudo-qualitative characteristic – see Chapter 6.3

MG, MS, VG, VS – see Chapter 4.1.5

(a)-(h) See Explanations on the Table of Characteristics in Chapter 8.1

(1) The characteristic only applies to varieties in Group A

(2) The characteristic only applies to varieties in Group B

See Chapter 6.4 and explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8.2

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. VG (*) (+)	Plant: sex	Plante : sexe	Pflanze: Geschlecht	Planta: sexo		
QL	female	femelle	weiblich	femenino	Hayward (A), Shinzan (B)	1
	male	mâle	männlich	masculino	a-Awaji (B), Matua (A)	2
	hermaphrodite	hermaphrodite	zwitterig	hermafrodita	Jenny (A)	3
2. VG (+)	Plant: self fruit setting	Plante : autonouaison	Pflanze: Fruchtbildung nach Selbstfruchtung	Planta: autofructificación		
QL	absent	absente	fehlend	ausente		1
	present	présente	vorhanden	presente		9
3. VG (+)	Plant: vigor	Plante : vigueur	Pflanze: Wuchsstärke	Planta: vigor		
QN	weak	faible	gering	débil		3
	medium	moyenne	mittel	medio	Hayward (A)	5
	strong	forte	stark	fuerte	Bruce (A)	7
	very strong	très forte	sehr stark	muy fuerte		9
4. VG (*)	Young shoot: density of hairs	Jeune pousse : densité de la pilosité	Junger Trieb: Dichte der Behaarung	Tallo joven: densidad de la vellosidad		
QN	(a) very sparse	très faible	sehr locker	muy escasa		1
	sparse	faible	locker	escasa	a-Awaji (B), Kuimi (A)	3
	medium	dense	mittel	media	Hayward (A), Shinzan (B)	5
	dense	dense	dicht	densa	King (A), Mitsukou (B)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
5. (*)	VG Young shoot: anthocyanin coloration of growing tip	Jeune pousse : pigmentation anthocyanique du sommet de croissance	Junger Trieb: Anthocyanfärbung der wachsenden Spitze	Tallo joven: pigmentación antociánica del ápice de crecimiento		
QN (a)	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Hort16A (A), Mitsukou (B)	1
(e)	weak	faible	gering	débil	King (A), Shinzan (B)	3
	medium	moyenne	mittel	media	Kousui (B), Tomua (A)	5
	strong	forte	stark	fuerte	Houkou (B), Koryoku (A)	7
6. (*)	VG Stem: thickness	Tige : épaisseur	Trieb: Dicke	Tallo: grosor		
QN (b)	thin	mince	dünn	fino	a-Gassan (B), Sparkler (A)	1
	medium	moyenne	mittel	medio	a-Awaji (B), Hayward (A)	2
	thick	épaisse	dick	grueso	Bruno (A), Shinzan (B)	3
7. (*)	VG Stem: color of shoot on sunny side	Tige : couleur de la pousse sur le côté ensoleillé	Trieb: Farbe des Triebs auf der Sonnenseite	Tallo: color del tallo en la parte soleada		
PQ (b)	green white	blanc vert	grünweiß	blanco verdoso		1
	grey brown	brun gris	graubraun	marrón grisáceo	King (A), Mitsukou (B)	2
	yellow brown	brun jaune	gelbbraun	marrón amarillento	Sparkler (A)	3
	light brown	brun clair	hellbraun	marrón claro	a-Hirano (B), Hort16A (A)	4
	red brown	brun rouge	rotbraun	marrón rojizo	Ranger (A)	5
	purple brown	brun pourpre	purpurbraun	marrón violáceo	Bruno (A)	6
	dark brown	brun foncé	dunkelbraun	marrón oscuro	Kousui (B)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
8.	VG Stem: texture of bark	Tige : texture de l'écorce	Trieb: Beschaffenheit der Rinde	Tallo: textura de la corteza		
QN (b)	smooth	lisse	glatt	lisa	Shinzan (B), Sparkler (A)	1
	moderately rough	modérément grossière	mäßig rauh	moderadamente rugosa	a-Gassan (B), Meteor (A)	2
	very rough	très grossière	sehr rauh	muy rugosa	a-Awaji (B), Hayward (A)	3
9.	VG Stem: density of hairs	Tige : densité de la pilosité	Trieb: Dichte der Behaarung	Tallo: densidad de la vellosidad		
QN (b)	absent or sparse	absente ou peu dense	fehlend oder locker	ausente o escasa	Meteor (A)	1
(1)	medium	moyenne	mittel	media	Hayward (A)	2
	dense	dense	dicht	densa		3
10. (*)	VG Stem: size of lenticels	Tige : taille des lenticelles	Trieb: Größe der Lentizellen	Tallo: tamaño de las lenticelas		
QN (b)	very small	très petite	sehr klein	muy pequeño	Kaimai (A)	1
	small	petite	klein	pequeño	Monty (A), Shinzan (B)	2
	medium	moyenne	mittel	medio	Hayward (A), r-Gassan (B)	3
	large	grande	groß	grande	Hort16A (A)	4
11. (*)	VG Stem: number of lenticels	Tige : nombre de lenticelles	Trieb: Anzahl der Lentizellen	Tallo: número de lenticelas		
QN (b)	few	rares	wenige	bajo	Meteor (A), Shigemidori (B)	3
	medium	moyen	mittel	medio	Hayward (A), Shinzan (B)	5
	many	nombreuses	viele	alto	Bruno (A), Mitsukou (B)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
12. VG (* (+)	Stem: prominence of bud support	Tige : proéminence du support des bourgeons	Trieb: Hervortreten des Knospenswulstes	Tallo: prominencia del soporte de la yema		
QN (b)	very weak	très faible	sehr gering	muy débil	Sparkler (A)	1
	weak	faible	gering	débil	Hayward (A)	2
	medium	moyenne	mittel	media	a-Awaji (B), King (A)	3
	strong	forte	stark	fuerte	Kaimai (A) Shinzan (B)	4
	very strong	très forte	sehr stark	muy fuerte	Kuimi (A)	5
13. VG (* (+)	Stem: presence of bud cover	Tige : présence de l'opercule du bourgeon	Trieb: Vorhandensein einer Knospenhülle	Tallo: presencia de opérculo		
QL (b)	absent	absente	fehlend	ausente	Hort16A (A), Kousui (B)	1
	present	présente	vorhanden	presente	Hayward (A) Mitsukou (B)	9
14. VG (* (+)	Stem: size of hole in bud cover	Tige : taille de l'ouverture de l'opercule du bourgeon	Trieb: Größe der Öffnung in der Knospenhülle	Tallo: tamaño del orificio del opérculo		
QN (b)	small	petite	klein	pequeño	Abbott (A) Mitsukou (B)	1
	medium	moyenne	mittel	medio	Hayward (A), r-Awaji (B)	2
	large	grande	groß	grande	Elmwood (A), r-Nagano (B)	3
15. VG (* (+)	Stem: leaf scar	Tige : cicatrice pétiolaire	Trieb: Blattnarbe	Tallo: cicatriz foliar		
QN (b)	flat	plate	flach	plana	Meteor (A), Shinzan (B)	1
	moderately depressed	modérément déprimée	mäßig eingesenkt	moderadamente deprimida	Hort16A (A), r-Nagano (B)	2
	strongly depressed	fortement déprimée	stark eingesenkt	fuertemente deprimida	Kousui (B), Monty (A)	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
16.	VG Stem: pith	Tige : moelle	Trieb: Mark	Tallo: médula		
(*) (+)						
PQ	absent	absente	fehlend	ausente		1
	lamellate	lamellaire	lamellenartig	laminada	Hayward (A)	2
	solid	solide	ganzflächig	maciza		3
17.	VG Leaf blade: shape	Limbe : forme	Blattspreite: Form	Limbo: forma		
(*) (+)						
PQ	(c) lanceolate	lancéolée	lanzettlich	lanceolado	Kaimai (A)	1
	(d) ovate	ovale	eiförmig	oval	Hayward (A)	2
	obovate	obovale	verkehrt eiförmig	oboval	Bruno (A)	3
18.	VG/ MS Leaf blade: ratio length/width	Limbe : rapport longueur/largeur	Blattspreite: Verhältnis Länge/Breite	Limbo: relación entre la longitud y la anchura		
(*)						
QN	(c) moderately elongated	modérément allongé	mäßig langgezogen	moderadamente alargado	Kaimai (A)	3
	(d) intermediate	intermédiaire	mittel	intermedio	Hayward (A)	5
	moderately compressed	modérément comprimé	mäßig zusammengedrückt	moderadamente comprimido	Matua (A)	7
19.	VG Leaf blade: shape of apex	Limbe : forme du sommet	Blattspreite: Form der Spitze	Limbo: forma del ápice		
(*) (+)						
PQ	(c) caudate	en forme de queue	geschwänzt	caudado	Hortgem Tahí (B)	1
	(d) acuminate	acuminée	zugespitzt	acuminado	Kaimai (A), Yukimusume (B)	2
	acute	aigüe	spitz	agudo	Hayward (A)	3
	emarginate with cuspidate	émargé avec cuspidé	eingekerbt mit längerer aufgesetzter Spitze	emarginado cuspidado		4
	rounded	arrondie	abgerundet	redondeado	Satoizumi (B)	5
	retuse	échancrée	eingedrückt	retuso	Shinzan (B)	6
	emarginate	émargée	eingekerbt	emarginado	Kuimi (A)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
20.	VG	Leaf blade: basal lobes	Limbe : disposition des lobes	Blattspreite: Basallappen	Limbo: lóbulos basales	
(*) (+)						
QN	(c)	none	aucun	keine	ninguno	1
	(d)	far apart	très éloignés	weit auseinanderstehend	muy alejados	Kaimai (A) 2
	(1)	slightly apart	légèrement éloignés	leicht auseinanderstehend	ligeramente alejados	Matua (A) 3
		touching each other	en contact l'un avec l'autre	sich berührend	en contacto uno con otro	Hort16A (A) 4
		slightly overlapping	légèrement chevauchants	leicht überlappend	ligeramente solapados	Hayward (A) 5
		strongly overlapping	très chevauchants	stark überlappend	muy solapados	6
21.	VG	Leaf blade: number of ciliate serrations	Limbe : nombre de denticulations ciliées	Blattspreite: Anzahl der bewimperten Zähne	Limbo: número de dientes ciliados	
(+)						
QN	(c)	few	faible	gering	bajo	a-Shouwa (B) 3
	(d)	medium	moyen	mittel	medio	a-Gassan (B) 5
	(2)	many	élevé	groß	alto	Mitsukou (B) 7
22.	VG	Leaf blade: density of hairs on <u>upper</u> side	Limbe : densité de la pilosité sur la face <u>supérieure</u>	Blattspreite: Dichte der Behaarung der <u>Oberseite</u>	Limbo: densidad de la vellosidad en el <u>haz</u>	
QN	(c)	absent or very sparse	absente ou très lâche	fehlend oder sehr locker	ausente o muy escasa	Hort16A (A) 1
	(d)	sparse	lâche	locker	escasa	Kaimai (A) 3
	(1)	medium	moyenne	mittel	media	Bruno (A) 5
		dense	dense	dicht	densa	Meteor (A) 7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
23. VG	Leaf blade: density of hairs on <u>lower side</u>	Limbe : densité de la pilosité sur la face <u>inférieure</u>	Blattspreite: Dichte der Behaarung der <u>Unterseite</u>	Limbo: densidad de la vellosidad en el <u>envés</u>		
QN	(c) absent or very sparse	absente ou très lâche	fehlend oder sehr locker	ausente o muy escasa	Hortgem Tahí (B), Kousui (B)	1
	(d) sparse	lâche	locker	escasa	a-Gassan (B), Kuimi (A)	3
	medium	moyenne	mittel	media	a-Shouwa (B), Hayward (A)	5
	dense	dense	dicht	densa	Ranger (A), Shinzan (B)	7
24. VG (*)	Leaf blade: intensity of green color of <u>upper side</u>	Limbe : intensité de la couleur verte de la face <u>supérieure</u>	Blattspreite: Intensität der Grünfärbung der <u>Oberseite</u>	Limbo: intensidad del color verde del <u>haz</u>		
QN	(c) light	claire	gering	claro	a- Gassan (B)	3
	(d) medium	moyenne	mittel	medio	Hayward (A), Satoizumi (B)	5
	dark	foncée	stark	oscuro	Bruno (A), Shinzan (B)	7
25. VG (*)	Leaf blade: color of <u>lower side</u>	Limbe : couleur de la face <u>inférieure</u>	Blattspreite: Farbe der <u>Unterseite</u>	Limbo: color del <u>envés</u>		
PQ	(c) whitish	blanchâtre	weißlich	blanquecino	Shinzan (B)	1
	(d) light green	vert clair	hellgrün	verde claro	a-Awaji (B), Hortgem Tahí (B)	2
	medium green	vert moyen	mittelgrün	verde medio	Bruno (A)	3
	yellow green	vert jaune	gelbgrün	verde amarillento	Hayward (A)	4
	yellow brown	brun jaune	gelbbraun	marrón amarillento		5
26. VG	Leaf blade: variegation	Limbe : panachure	Blattspreite: Panaschierung	Limbo: variegación		
QL	(c) absent	absente	fehlend	ausente		1
	(d) present	présente	vorhanden	presente		9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
27. VG	Leaf blade: color of variegation	Limbe : couleur de la panachure	Blattspreite: Farbe der Panaschierung	Limbo: color de la variegación		
PQ	(c) white only	blanc seulement	nur weiß	sólo blanco		1
	(d) white and yellow	blanc et jaune	weiß und gelb	blanco y amarillo		2
	yellow only	jaune seulement	nur gelb	sólo amarillo		3
28. VG (*)	Leaf: length of petiole relative to blade	Feuille : longueur du pétiole par rapport au limbe	Blatt: Länge des Blattstiels im Verhältnis zur Spreite	Hoja: longitud del peciolo respecto del limbo		
QN	(c) very small	très petite	sehr kurz	muy pequeño	Kaimai (A)	1
	(d) small	petite	kurz	pequeño	Gracie (A)	3
	medium	moyenne	mittel	medio	Kousui (B), Meteor (A)	5
	large	grande	lang	grande	Hayward (A), Satoizumi (B)	7
29. VG	Petiole: anthocyanin coloration of upper side	Pétiole : pigmentation anthocyanique de la face supérieure	Blattstiel: Anthocyanfärbung der Oberseite	Peciolo: pigmentación antocianica de la cara superior		
QN	(c) absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Kaimai (A), Mitsukou (B)	1
	(d) weak	faible	gering	débil	Houkou (B), Sparkler (A)	3
	(e) medium	moyenne	mittel	media	Hayward (A), Shinzan (B)	5
	strong	forte	stark	fuerte	a-Hirano (B), Tomua (A)	7
30. VG (+)	Inflorescence: type	Inflorescence : type	Blütenstand: Typ	Inflorescencia: tipo		
QL	solitary	solitaire	einzeln	aislada	Jinkui	1
	dichasium	dichasium	Dichasium	dicasio	Jinyan	2
	pleiochasium	pleiochasium	Pleiochasium	pleiocasio	Moshan No.4	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
31.	VG/	Inflorescence:	Inflorescence :	Blütenstand: Anzahl	Inflorescencia:	
(+)	MG	number of flowers	nombre de fleurs	der Blüten	número de flores	
QN	very few	très rares	sehr gering	muy bajo	Hayward (A), Hortgem Rua (B)	1
	few	rares	gering	bajo	Matua (A)	2
	medium	moyen	mittel	medio	Hort22D (A)	3
	many	nombreuses	groß	alto		4
32.	VG	Flower bud:	Bouton floral :	Blütenknospe:	Botón floral:	
(+)		position of first	position du premier	Position der ersten	posición de la	
		spike	épi	Dolde	primera espiga	
QN	(2) low	bas	gering	baja		1
	medium	moyen	mittel	media	a-Shouwa (B)	2
	high	haut	hoch	alta	a-Gassan (B)	3
33.	VG	Flower: number of	Fleur : nombre de	Blüte: Anzahl der	Flor: número de	
		sepals	sépales	Kelchblätter	sépalos	
QN	(f) few	rares	gering	bajo	Skelton (A)	1
	medium	moyen	mittel	medio	Hortgem Tahī (B)	2
	many	nombreux	groß	alto	Bruce (A)	3
34.	VG	Flower: main color	Fleur : couleur	Blüte: Hauptfarbe	Flor: color principal	
(*)		of sepals	principale	der Kelchblätter	de los sépalos	
(+)			des sépalos			
PQ	(f) white	blanche	weiß	blanco	Yukimusume (B)	1
	green	verte	grün	verde	Hort16A (A), Mitsukou (B)	2
	brown	brune	braun	marrón	Shinzan (B), Tomua (A)	3
	reddish brown	brune rougeâtre	rötlichbraun	marrón rojizo	a-Awaji (B), Hortgem Tahī (B)	4

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
35.	VG	Flower: density of sepal hairs	Fleur : densité de la pilosité des sépales	Blüte: Dichte der Behaarung der Kelchblätter	Flor: densidad de la vellosidad de los sépalos	
QN	(f)	absent or sparse	absente ou peu dense	fehlend oder locker	ausentes o escasa	1
	(1)	medium	moyenne	mittel	media	2
		dense	dense	dicht	densa	Bruce (A) 3
36.	MG/ (*) MS	Flower: diameter	Fleur : diamètre	Blüte: Durchmesser	Flor: diámetro	
QN	(f)	small	petit	klein	pequeño	a-Gassan (B), Sparkler (A) 3
		medium	moyen	mittel	medio	Matua (A), Satoizumi (B) 5
		large	grand	groß	grande	Hort51-1785 (A), Shinzan (B) 7
		very large	très grand	sehr groß	muy grande	Hayward (A) 9
37.	VG (*) (+)	Flower: arrangement of petals	Fleur : disposition des pétales	Blüte: Anordnung der Blütenblätter	Flor: disposición de los pétalos	
QN	(f)	free	libres	auseinanderstehend	separados	Abbott (A), a-Shouwa (B) 1
		touching	tangents	sich berührend	en contacto	Matua (A), Satoizumi (B) 2
		overlapping	chevauchants	überlappend	solapados	Hayward (A) Shinzan (B) 3
38.	VG	Flower: shape in profile	Fleur : forme de profil	Blüte: Form im Profil	Flor: forma de perfil	
PQ	(f)	concave	concave	konkav	cóncava	Hayward (A) 1
		flat	plate	flach	plana	Bruno (A) 2
		convex	convexe	konvex	convexa	Tamara (A) 3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
39. VG	Flower: number of styles	Fleur : nombre de styles	Blüte: Anzahl Griffel	Flor: número de estilos		
QN (f)	few	petit	gering	bajo	Yamagatamusume (B)	1
	medium	moyen	mittel	medio	Hort16A (A), Satoizumi (B)	2
	many	grand	groß	alto	Hayward (A), Shinzan (B)	3
40. VG (*) (+)	Flower: attitude of styles	Fleur : port des styles	Blüte: Stellung der Griffel	Flor: porte del estilo		
PQ (f)	erect	dressé	aufrecht	erecto		1
	semi-erect	demi-dressé	halbaufrecht	semierecto	Houkou (B)	2
	horizontal	horizontal	waagrecht	horizontal	Bruno (A), Shinzan (B)	3
	irregular	irrégulier	unregelmäßig	irregular	Hayward (A)	4
41. VG (*) (+)	Petal: main color on adaxial side	Pétale : couleur principale de la face ventrale	Blütenblatt: Hauptfarbe der adaxialen Seite	Pétalo: color principal en el lado adaxial		
PQ	white	blanc	weiß	blanco	Hayward (A), Shinzan (B)	1
	greenish white	blanc verdâtre	grünlichweiß	blanco verdoso	Hortgem Tahi (B), Satoizumi (B)	2
	yellowish white	blanc jaunâtre	gelblichweiß	blanco amarillento	Bruce (A), Mitsukou (B)	3
	yellowish green	vert jaunâtre	gelblichgrün	verde amarillento		4
	yellow	jaune	gelb	amarillo		5
	light pink	rose clair	hellrosa	rosa claro		6
	red pink	rose rouge	rotrosa	rosa rojizo		7
	red	rouge	rot	rojo		8

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
42.	VG	Petal: shading of main color	Pétale : dégradé de la couleur principale	Blütenblatt: Schattierung der Hauptfarbe	Pétalo: sombreado del color principal	
(+)						
QN	(f)	lighter towards base	plus claire vers la base	heller zur Basis hin	más claro hacia la base	1
		even	régulier	gleichmäßig	uniforme	Hort16A (A) 2
		lighter towards apex	plus claire vers le sommet	heller zur Spitze hin	más claro hacia el ápice	3
43.	VG	Petal: second color on adaxial side	Pétale : couleur secondaire de la face ventrale	Blütenblatt: Sekundärfarbe der adaxialen Seite	Pétalo: segundo color en el lado adaxial	
(+)						
PQ	(f)	none	aucune	keine	ninguno	1
		white	blanche	weiß	blanco	2
		green	verte	grün	verde	Hayward (A) 3
		light pink	rose clair	hellrosa	rosa claro	4
		dark pink	rose foncé	dunkelrosa	rosa oscuro	Meteor (A) 5
44.	VG	Petal: distribution of second color	Pétale : répartition de la couleur secondaire	Blütenblatt: Verteilung der Sekundärfarbe	Pétalo: distribución del segundo color	
(+)						
PQ	(f)	marginal only	marginale seulement	nur am Rand	sólo en el borde	1
		irregular spotted	moucheté irrégulier	unregelmäßig gepunktet	manchado irregular	Meteor (A) 2
		basal spot only	tache à la base seulement	nur Basalfleck	sólo mancha basal	Hayward (A) 3
45.	VG	Anther: color	Anthère : couleur	Anthere: Farbe	Antera: color	
PQ	(f)	yellow	jaune	gelb	amarillo	r-Nagano (B) 1
		yellow orange	jaune orangé	gelborange	naranja amarillento	Bruce (A) 2
		grey	gris	grau	gris	3
		dark purple	pourpre foncé	dunkelpurpurn	púrpura oscuro	Mitsukou (B) 4
		black	noir	schwarz	negro	a-Shouwa (B) 5

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
46.	MG	Fruit: weight	Fruit : poids	Frucht: Gewicht	Fruto: peso	
(*)						
(+)						
QN	(g)	very low	très bas	sehr gering	muy bajo	1
		low	bas	gering	bajo	Huaguang2 (A) 3
		medium	moyen	mittel	medio	Hort16 (A), Hortgem Tahī (B), Tomua (A) 5
		high	élevé	hoch	elevado	Hayward (A), Jin Feng (A) 7
		very high	très élevé	sehr hoch	muy elevado	Jade Moon (A) 9
47.	VG/ MS	Fruit: length	Fruit : longueur	Frucht: Länge	Fruto: longitud	
(*)						
(+)						
QN	(g)	short	petit	kurz	corto	Kuimi (A), Hortgem Tahī (B) 3
		medium	moyen	mittel	medio	Hayward (A) 5
		long	long	lang	largo	Bruno (A), Hortgem Toru (B) 7
48.	VG/ MS	Fruit: width	Fruit : largeur	Frucht: Breite	Fruto: anchura	
(*)						
(+)						
QN	(g)	narrow	étroit	schmal	estrecho	Bruno (A) 3
		medium	moyen	mittel	medio	Hayward (A) 5
		broad	large	breit	ancho	Kuimi (A) 7
49.	VG/ MG	Fruit: ratio length/width	Fruit : rapport longueur/largeur	Frucht: Verhältnis Länge/Breite	Fruto: relación entre la longitud y la anchura	
(*)						
(+)						
QN	(g)	weakly elongated	faiblement allongé	leicht langgezogen	levemente alargada	Bruno (A) 3
		medium	moyen	mittel	medio	Hayward (A) 5
		weakly compressed	faiblement comprimé	leicht zusammengedrückt	levemente comprimido	Kuimi (A) 7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
50.	VG	Fruit: shape	Fruit : forme	Frucht: Form	Fruto: forma		
(*)							
(+)							
PQ	(g)	ovate	ovale	eiförmig	oval	Hort16A (A), Jecy Gold (A), Yamagatamusume (B)	1
		oblong	oblongue	breitrund	oblongo	Hortgem Toru (B), Wilkins Super (A)	2
		elliptic	elliptique	elliptisch	elíptico	Hayward (A), Mitsukou (B)	3
		circular	circulaire	rund	circular	Hort51-1785 (A)	4
		oblate	aplatie	breitrund	oblato	Kuimi (A), Shinzan (B)	5
		obovate	obovale	verkehrt eiförmig	oboval	Monty (A)	6
51.	VG	Fruit: shape in cross section (at median)	Fruit : forme en section transversale (au milieu)	Frucht: Form im Querschnitt (in der Mitte)	Fruto: forma en la sección transversal (en el medio)		
(*)							
(+)							
PQ	(g)	circular	circulaire	rund	circular	Bruno (A), Mitsukou (B)	1
		oblate	aplatie	breitrund	oblata	Hortgem Tahí (B), Kousui (B), Wilkins Super (A)	2
		transverse elliptic	elliptique transverse	quer elliptisch	elíptica transversal	Hayward (A)	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
52.	VG	Fruit: stylar end	Fruit : extrémité stylaire	Frucht: Griffelende	Fruto: extremo estilar	
(*) (+)						
PQ	(g)	strongly depressed	fortement déprimée	stark eingesenkt	muy deprimido	1
		weakly depressed	légèrement déprimée	leicht eingesenkt	levemente deprimido	Jade Moon (A) 2
		flat	plate	flach	plano	Hayward (A), Satoizumi (B) 3
		rounded	arrondie	abgerundet	redondeado	Kousui (B), Tomua (A) 4
		weakly blunt protruding	saillante légèrement tronquée	leicht stumpf herausragend	saliente levemente truncado	Skelton (A) 5
		strongly blunt protruding	saillante fortement tronquée	stark stumpf herausragend	saliente muy truncado	Hort16A (A) 6
		pointed protrusion	fortement saillante	spitz herausragend	protusión puntiaguda	Hortgem Toru (B) 7
53.	VG	Fruit: degree of pointed protusion	Fruit : degré de protubérance pointue	Frucht: Grad der spitzen Vorwölbung	Fruto: grado de la protusión puntiaguda	
(+)						
QN	(g)	weak	faible	schwach	débil	1
	(2)	medium	moyen	mittel	medio	2
		strong	fort	stark	fuerte	3
54.	VG	Fruit: presence of calyx ring	Fruit : présence de l'anneau du calice	Frucht: Vorhandensein eines Kelchrings	Fruto: presencia del anillo del cáliz	
(+)						
QN	(g)	absent or weakly expressed	absente ou faiblement exprimée	fehlend oder schwach ausgeprägt	ausente o débilmente expresada	Bruno (A) 1
	(1)	medium expressed	moyennement exprimée	mittel ausgeprägt	intensidad de expresión media	Hayward (A) 2
		strongly expressed	fortement exprimée	stark ausgeprägt	fuertemente expresada	Hort16A (A), Qinmei (A) 3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
55.	VG	Fruit: shape of shoulder at stalk end	Fruit : forme de l'épaulement à l'extrémité pédonculaire	Frucht: Form der Schulter am Stielende	Fruto: forma del hombro en el extremo peduncular		
(*)							
(+)							
PQ	(g)	truncate	tronquée	stumpf	truncado	Hortgem Tahí (B), Mitsukou (B)	1
		weakly sloping	faiblement inclinée	leicht zugespitzt	levemente inclinado	Hayward (A), Kousui (B)	2
		strongly sloping	fortement inclinée	stark zugespitzt	muy inclinado	Skelton (A)	3
56.	VG/MS	Fruit: length of stalk	Fruit : longueur du pédoncule	Frucht: Länge des Stiels	Fruto: longitud del pedúnculo		
(*)							
(+)							
QN	(g)	short	court	kurz	corto	Hortgem Tahí (B), Houmitu (A)	3
		medium	moyen	mittel	medio	Sanuki Gold (A), Shinzan (B)	5
		long	long	lang	largo	Hayward (A)	7
57.	VG/MS	Fruit: length of stalk relative to length of fruit	Fruit : longueur du pédoncule par rapport à celle du fruit	Frucht: Länge des Stiels im Verhältnis zur Länge der Frucht	Fruto: longitud del pedúnculo respecto de la longitud del fruto		
(*)							
(+)							
QN	(g)	very short	très court	sehr kurz	muy corta	Wuzhi3 (A)	1
		short	court	kurz	corta	Bruno (A), Kousui (B)	3
		medium	moyen	mittel	media	Allison (A), Shinzan (B)	5
		long	long	lang	larga	Hayward (A)	7
		very long	très long	sehr lang	muy larga	Jade Moon (A)	9
58.	VG	Fruit: conspicuousness of lenticels on skin	Fruit : netteté des lenticelles sur l'épiderme	Frucht: Ausprägung der Lentizellen auf der Schale	Fruto: notabilidad de las lenticelas en la epidermis		
(*)							
(+)							
QN	(g)	weak	faible	gering	débil	Hort16A (A), Mitsukou (B)	1
		medium	moyenne	mittel	media	Hayward (A)	2
		strong	forte	stark	fuerte	Kousui (B), Topstar Vantini (A)	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
59. (*)	VG Fruit: hairiness of skin	Fruit : pilosité de l'épiderme	Frucht: Behaarung der Schale	Fruto: vellosidad de la epidermis		
QL (g)	absent	absente	fehlend	ausente	Shinzan (B), a-Shouwa (B)	1
	present	présente	vorhanden	presente	Hayward (A)	9
60. (*)(+)	VG Fruit: density of hairs	Fruit : densité de la pilosité	Frucht: Dichte der Behaarung	Fruto: densidad de la vellosidad		
QN (g)	very sparse	très faible	sehr locker	muy escasa	Topstar Vantini (A)	1
(1)	sparse	faible	locker	escasa	Hort16A (A)	3
	medium	moyenne	mittel	media	Hayward (A)	5
	dense	dense	dicht	densa	Bruno (A)	7
61.	VG Fruit: color of hairs	Fruit : couleur des poils	Frucht: Farbe der Haare	Fruto: color del vello		
PQ (g)	white	blanc	weiß	blanco		1
(1)	yellow	jaune	gelb	amarillo		2
	yellow brown	jaune brun	gelbbraun	marrón amarillento	Hort16A (A)	3
	reddish brown	brun rougeâtre	rötlichbraun	marrón rojizo		4
	medium brown	brun moyen	mittelbraun	marrón medio	Hayward (A)	5
	dark brown	brun foncé	dunkelbraun	marrón oscuro	Bruno (A)	6
62. (*)(+)	VG Fruit: adherence of hairs to skin	Fruit : adhérence des poils à l'épiderme	Frucht: Anhaften der Haare an der Schale	Fruto: adherencia del vello a la epidermis		
QN (g)	very weak	très faible	sehr schwach	muy débil	Tomua (A)	1
(1)	weak	faible	schwach	débil	Hort16A (A)	3
	medium	moyenne	mittel	medio	Abott (A)	5
	strong	forte	stark	fuerte	Hayward (A)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
63.	VG	Fruit: color of skin	Fruit : couleur de l'épiderme	Frucht: Farbe der Schale	Fruto: color de la piel		
(*) (+)							
PQ	(h)	light green	vert clair	hellgrün	verde claro	Hortgem Rua (B)	1
		medium green	vert moyen	mittelgrün	verde medio	Hortgem Tahī (B), Mitsukou (B)	2
		reddish green	vert rougeâtre	rötlichgrün	rojizo verde		3
		yellow	jaune	gelb	amarillo		4
		greenish brown	brun verdâtre	grünlichbraun	marrón verdoso	Hayward (A), Shinzan (B)	5
		reddish brown	brun rougrâtre	rötlichbraun	marrón rojizo		6
		light brown	brun clair	hellbraun	marrón claro	Hort16A (A)	7
		medium brown	brun moyen	mittelbraun	marrón medio	Sanuki Gold (A)	8
		dark brown	brun foncé	dunkelbraun	marrón oscuro	Kousui (B), Tomua (A)	9
		purple red	rouge pourpre	purpurrot	rojo púrpura		10
64.	VG	Fruit: adherence of skin to flesh	Fruit: adhérence de l'épiderme à la chair	Frucht: Anhaften der Schale am Fleisch	Fruto: adherencia de la epidermis a la pulpa		
QN	(h)	weak	faible	schwach	débil		1
	(2)	medium	moyenne	mittel	media	Hortgem Tahī (B)	2
		strong	forte	stark	fuerte	Hortgem Toru (B)	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
65.	VG	Fruit: color of outer pericarp	Fruit : couleur du péricarpe externe	Frucht: Farbe des äußeren Perikarps	Fruto: color del pericarpio exterior		
(*) (+)							
PQ	(h)	light green	vert clair	hellgrün	verde claro	Shinzan (B)	1
		medium green	vert moyen	mittelgrün	verde medio	Hayward (A)	2
		dark green	vert foncé	dunkelgrün	verde oscuro	Hortgem Toru (B)	3
		greenish yellow	jaune verdâtre	grünlichgelb	amarillo verdoso	Hort22D (A), Satoizumi (B)	4
		medium yellow	jaune moyen	mittelgelb	amarillo medio	Hort16A (A), Kousui (B)	5
		dark yellow	jaune foncé	dunkelgelb	amarillo oscuro	Hort51-1785 (A)	6
		yellowish orange	orange jaunâtre	gelblichorange	anaranjado amarillento		7
		orange	orangé	orange	anaranjado		8
		red	rouge	rot	rojo		9
		red purple	rouge pourpre	rotpurpurn	púrpura rojizo		10
66.	VG	Fruit: color of locules	Fruit : couleur des loges	Frucht: Farbe der Kammern	Fruto: color de los lóculos		
(*) (+)							
PQ	(h)	light green	vert clair	hellgrün	verde claro	Shinzan (B)	1
		medium green	vert moyen	mittelgrün	verde medio	Hayward (A), Hortgem Tahí (B)	2
		dark green	vert foncé	dunkelgrün	verde oscuro	Hortgem Toru (B)	3
		greenish yellow	jaune verdâtre	grünlichgelb	amarillo verdoso	Satoizumi (B)	4
		medium yellow	jaune moyen	mittelgelb	amarillo medio	Hort16A (A), Kousui (B)	5
		dark yellow	jaune foncé	dunkelgelb	amarillo oscuro	Hort51-1785 (A)	6
		red	rouge	rot	rojo	Hort22D (A), Hortgem Rua (B)	7
		red purple	rouge pourpre	rotpurpurn	púrpura rojizo		8

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota	
67.	VG	Fruit: spread of reddish color along locules	Fruit : distribution de la couleur rougeâtre le long des loges	Frucht: Ausbreitung der rötlichen Farbe entlang der Kammern	Fruto: distribución del color rojizo a lo largo de los lóculos		
(+)							
QN	(h)	very weak	très faible	sehr gering	muy débil	Red Princess (A)	1
		weak	faible	gering	débil	Honghua (A)	2
		medium	moyenne	mittel	medio	Chuhong (A)	3
		strong	forte	groß	fuerte		4
		very strong	très forte	sehr groß	muy fuerte	Hort22D (A)	5
68.	VG	Fruit: intensity of reddish color in locules	Fruit : intensité de la couleur rougeâtre dans les loges	Frucht: Intensität der rötlichen Farbe in den Kammern	Fruto: intensidad del color rojizo en los lóculos		
QN	(h)	light	légère	hell	claro	Red Princess (A)	3
		medium	moyenne	mittel	medio		5
		dark	foncée	dunkel	oscuro	Hort22D (A)	7
69.	VG	Fruit: width of core relative to fruit	Fruit : largeur du cœur par rapport au fruit	Frucht: Breite der Mittelzone im Verhältnis zur Frucht	Fruto: anchura del corazón respecto del fruto		
(*)							
(+)							
QN	(h)	small	petite	klein	pequeña	Hort16A (A)	3
		small to medium	petite à moyenne	klein bis mittel	pequeña a media		4
		medium	moyenne	mittel	media	Bruno (A)	5
		medium to large	moyenne à large	mittel bis groß	media a grande	Tomua (A)	6
		large	large	groß	grande	Hayward (A)	7
70.	VG	Fruit: general shape of core in cross section	Fruit : forme générale du cœur en section transversale	Frucht: allgemeine Form der Mittelzone im Querschnitt	Fruto: forma general del corazón en la sección transversal		
(*)							
(+)							
PQ	(h)	circular	circulaire	rund	circular	Jintao (A), Yukimusume (B)	1
		oblate	aplatie	breitrund	oblata	Hort22D (A), Hortgem Tahi (B), Shinzan (B)	2
		transverse elliptic	elliptique transverse	quer elliptisch	elíptica transversal	Hort16A (A), Mitsukou (B)	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
71. VG	Fruit: color of core	Fruit : couleur du cœur	Frucht: Farbe der Mittelzone	Fruto: color del corazón		
(*)						
PQ	(h) white	blanc	weiß	blanco	Hort22D (A)	1
	greenish white	blanc verdâtre	grünlichweiß	blanco verdoso	Hayward (A), Hortgem Tahi (B)	2
	yellow white	blanc jaunâtre	gelbweiß	blanco amarillento	Hort16A (A), Shinzan (B)	3
	red purple	rouge pourpre	rotpurpurn	púrpura rojizo		5
72. MS	Fruit: sweetness	Fruit : goût sucré	Frucht: Süße	Fruto: dulzura		
(+)						
QN	(h) very low	très faible	sehr gering	muy baja	Jade Moon (A)	1
	low	faible	gering	baja	Hayward (A), Satoizumi (B)	3
	medium	moyen	mittel	media	Tomua (A), Yukimusume (B)	5
	high	élevé	hoch	alta	Hort16A (A), Kousui (B)	7
73. MG	Fruit: acidity	Fruit : acidité	Frucht: Säure	Fruto: acidez		
(+)						
QN	(h) low	faible	gering	baja	Sanuki Gold (A), Satoizumi (B)	3
	medium	moyenne	mittel	media	Hayward (A), Yamagatamusume (B)	5
	high	élevé	hoch	alta	a-Gassan (B), Bruno (A)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
74. (*)	VG/ MG	Time of vegetative bud burst	Époque du début du débourrement	Zeitpunkt des vegetativen Knospenaufbruchs	Época de brotación de las yemas de madera	
QN	very early	très précoce	sehr früh	muy temprana	Hort16A (A), Hortgem Rua (B)	1
	early	précoce	früh	temprana	Tomua (A), Yukimusume (B)	3
	medium	moyenne	mittel	media	Hayward (A), Shinzan (B)	5
	late	tardive	spät	tardía	Mitsukou (B)	7
75. (*)(+)	VG/ MG	Time of beginning of flowering	Époque du début de la floraison	Zeitpunkt des Blühbeginns	Época del inicio de la floración	
QN	early	précoce	früh	temprana	Hort16A (A), Yukimusume (B)	3
	medium	moyenne	mittel	media	Abbott (A), Kousui (B)	5
	late	tardive	spät	tardía	Hayward (A)	7
76. (*)(+)	VG/ MG	Time of maturity for harvest	Époque de la maturité pour la récolte	Zeitpunkt der Pflückreife	Época de madurez para la cosecha	
QN	(g) very early	très précoce	sehr früh	muy temprana	Hortgem Rua (B)	1
	early	précoce	früh	temprana	Hort22D (A), Hortgem Tahī (B), Yamagatamusume (B)	3
	medium	moyenne	mittel	media	Kousui (B), Tomua (A)	5
	late	tardive	spät	tardía	Hayward (A), Yukimusume (B)	7

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

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

- (1) Applies to Group A type varieties only
- (2) Applies to Group B type varieties only
 - (a) All observations on the young shoot should be made during active vegetative growth. Observation of hairs should be made on internodes from the middle third of growing shoots.
 - (b) All observations on the stem (including observations on the buds and bud support) should be made in the middle third of the replacement stem after leaf fall.
 - (c) The shape, size and hairiness of leaves can vary greatly according to the type and vigor of the shoot on which they are borne. Unless specified, the shoots should be replacement canes, i.e., those that will be tied down and retained for the following season's flowering.
 - (d) All observations on the leaf should be made near the middle of the current season's growth on sufficiently mature, but not old leaves. The most basal leaves of a shoot should be excluded since they do not usually attain full size or typical shape.
 - (e) All observations on the presence or absence of anthocyanin coloration in vegetative organs refer to the general appearance of the organ, irrespective of whether red pigments are present in hairs or in the underlying surface.
 - (f) All observations on the flower should be made on recently fully-opened terminal (king) flowers.
 - (g) Observations on fruit characteristics should be made at harvest maturity.
 - (h) Observations on fruit characteristics should be made when ripe for eating.

8.2 Explanations for individual characteristics

Ad. 1: Plant: sex

A hermaphrodite variety has flowers with stigmas and anthers with pollen.

Ad. 2: Plant: self fruit setting

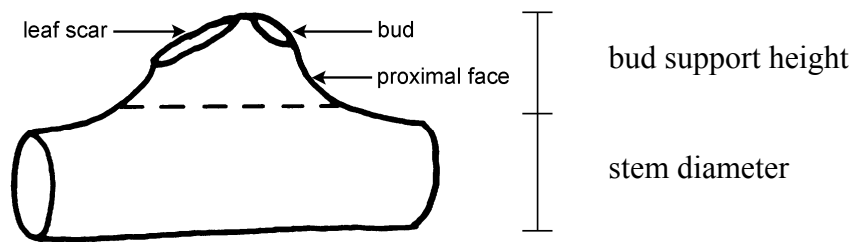
A self fruiting variety will set viable fruit without the presence of polliniser male plants or if flowers are bagged to prevent cross pollination.

Ad. 3: Plant: vigor

Plant vigor is determined by the evaluation of the overall abundance of vegetative growth.

Ad. 12: Stem: prominence of bud support

Ad. 15: Stem: leaf scar



The prominence of the bud support is determined by the bud support height/stem diameter contrast.

Ad. 13: Stem: presence of bud cover



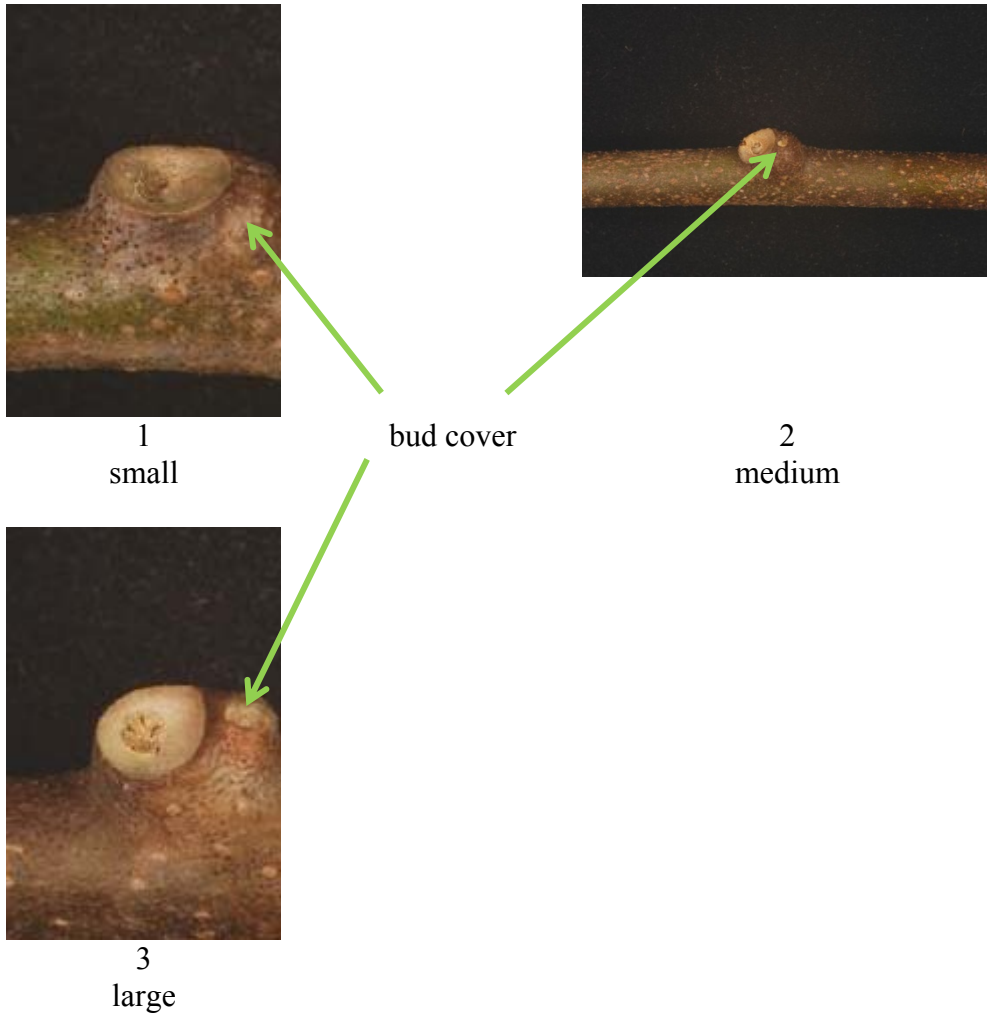
1
absent



9
present

The absence or presence of the bud cover is indicated by the visibility of the bud. A variety with no bud cover has a strongly protruding bud which is clearly visible. A variety with a bud cover has an almost invisible bud that appears sunk into the stem.

Ad. 14: Stem: size of hole in bud cover



Ad. 16: Stem: pith

The stem is cut in longitudinal section and the inner part is observed from above.

- 1 absent: The inner part is empty or hollow.
- 2 lamellate: The pith consists of layers of thin plates, one against another.
- 3 solid: The pith consists of a dense mass.

Ad. 17: Leaf blade: shape



1
lanceolate



2
ovate






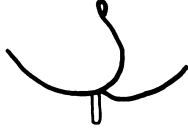


3
obovate

Ad. 19: Leaf blade: shape of apex

pointed				
	1 caudate	2 acuminate	3 acute	4 emarginate with cuspidate
rounded				
	5 rounded			
notched				
	6 retuse	7 emarginate		

Ad. 20: Leaf blade: basal lobes

		
1 none	2 far apart	3 slightly apart
		
4 touching each other	5 slightly overlapping	6 strongly overlapping

Ad. 21: Leaf blade: number of ciliate serrations



3
few



5
medium



7
many

Ad. 30: Inflorescence: type



1
solitary



2
dichasium



3
pleiochasium



Ad. 31: Inflorescence: number of flowers

Flowers occur on the first 1-6 nodes on a current season's shoot. The observation should be made immediately before flower opening, when at least 2 nodes have developed. The number of flowers present at each node is recorded. It is recommended that at least two shoots are observed per plant.

Ad. 32: Flower bud: position of first spike

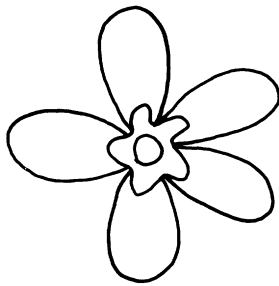
The position of the first spike is determined by node order, of which the first spike is set, from the base. Some varieties set the first spike at the lowest node from the base.

Ad. 34: Flower: main color of sepals

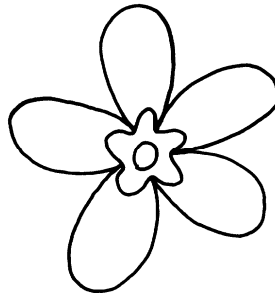
The sepal may have more than one color. The main color is the color with the largest surface area on the organ

Ad. 37: Flower: arrangement of petals

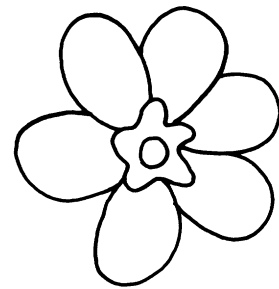
Flowers are viewed from beneath as shown in the diagrams.



1
free



2
touching



3
overlapping

Ad. 40: Flower: attitude of styles

State 4 irregular: The attitude of the styles is a mixture of erect, semi erect and horizontal in any combination of two of three different attitudes. The general impression of the flowers is one of no consistency of style attitude or a single predominant style attitude.

Ad. 41: Petal: main color on adaxial side

Ad. 42: Petal: shading of main color

The main color is the color with the largest surface area on the petal. The main color may be shaded, being darker or lighter from base to apex. This is also referred to as a different intensity of color or color gradient on an organ.

The adaxial side is facing the axis of the flower, the upper side. Note that the upper side may be facing downwards when observed on the plant.

Ad. 43: Petal: second color on adaxial side

Ad. 44: Petal: distribution of second color

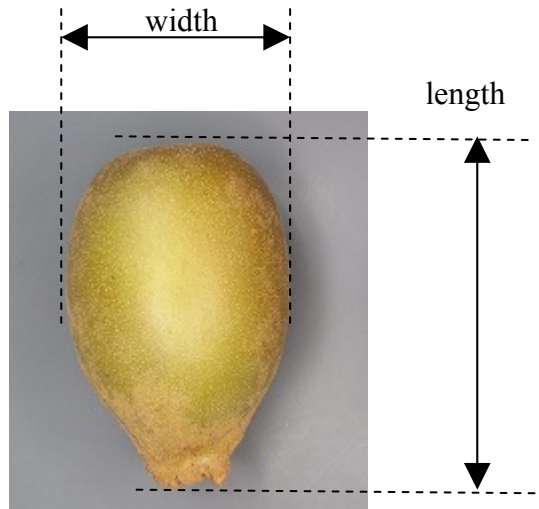
The secondary color is identified as the color with the second largest surface area on the organ. The second color occurs as a single basal spot, irregular spotting over the entire petal or solid coloration on or near the margin.

Ad. 46: Fruit: weight

Fruit weight should be determined by a sample size of 25 harvested fruits, 5 each from 5 plants.

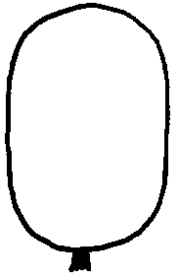
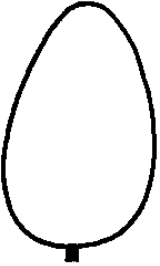
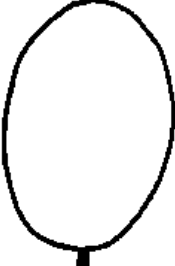

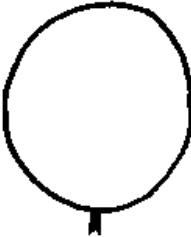
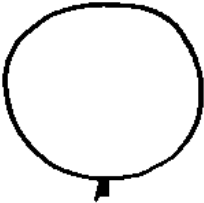
Ad 47: Fruit: length

Ad 48: Fruit: width

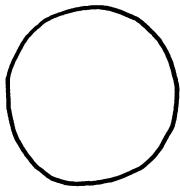


Ad. 49: Fruit: ratio length/width

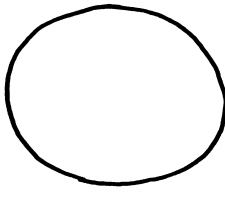
Ad. 50: Fruit: shape

← broadest part →				
		below the middle	at middle	above middle
elongated				
			2 oblong	
length/width ratio	↑			
		1 ovate	3 elliptic	6 obovate
	↓			
			4 circular	
compressed				
			5 oblate	

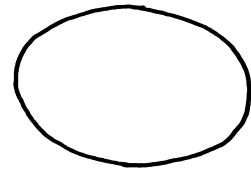
Ad. 51: Fruit: shape in cross section (at median)



1
circular



2
oblate



3
transverse elliptic

Ad. 52: Fruit: stylar end



1
strongly depressed



2
weakly depressed



3
flat



4
rounded



5
weakly blunt protruding



6
strongly blunt protruding



7
pointed protrusion

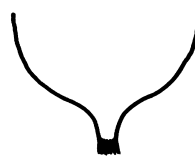
Ad. 53: Fruit: degree of pointed protrusion



1
weak

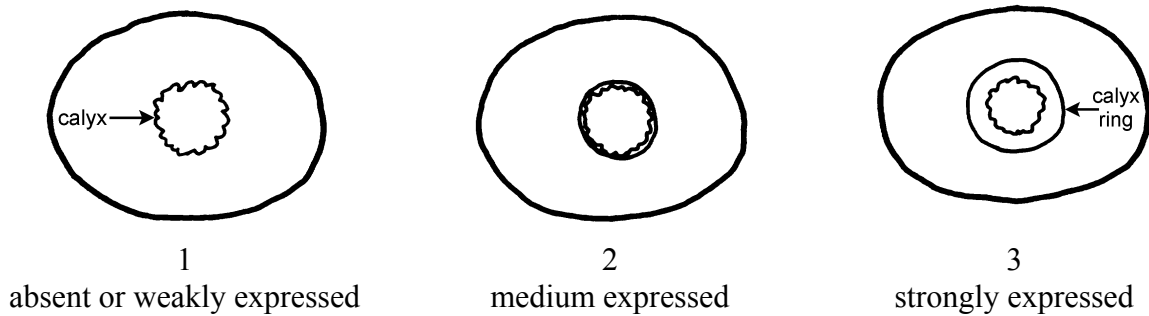


2
medium

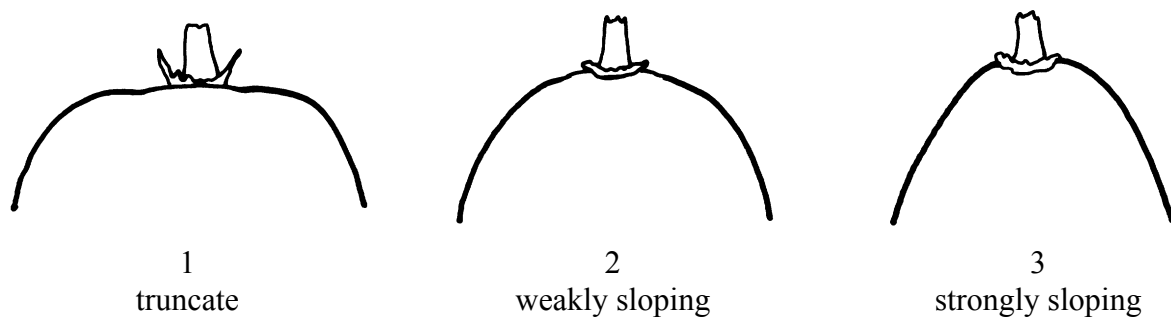


3
strong

Ad. 54: Fruit: presence of calyx ring



Ad. 55: Fruit: shape of shoulder at stalk end



Ad. 57: Fruit: length of stalk relative to length of fruit

The relativity is determined by the size of the difference between the length of the stalk and the length of the fruit.

short means moderately shorter stalk to length of fruit

medium means similar stalk length to fruit length

long means moderately longer stalk to length of fruit

Ad. 58: Fruit: conspicuousness of lenticels on skin

The conspicuousness of lenticels is determined by the size and number on the skin

Ad. 60: Fruit: density of hairs

The density is determined by the combination of the number of hairs and length of individual hairs

Ad. 62: Fruit: adherence of hairs to skin

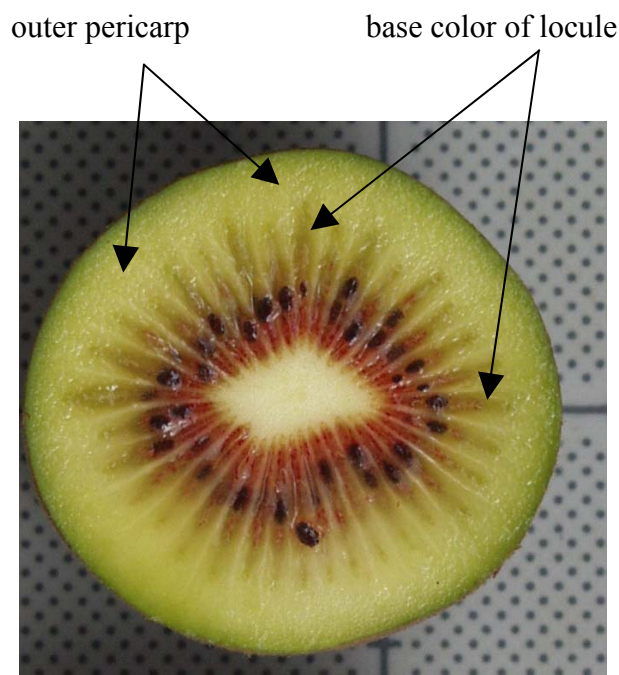
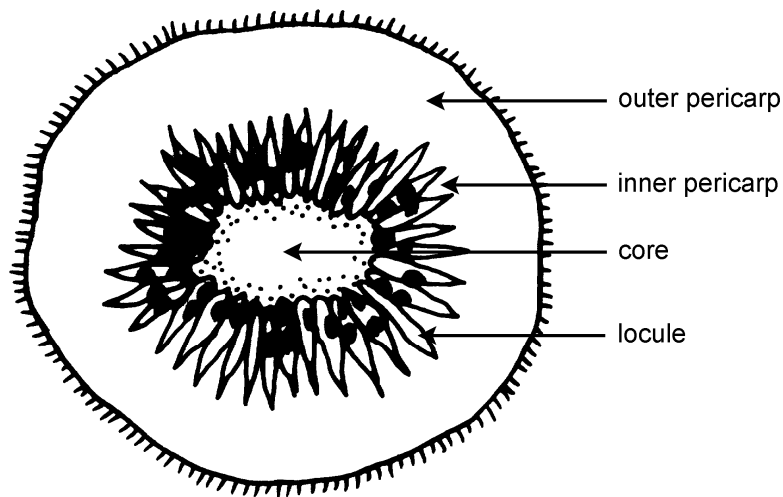
Observation is made by rubbing a finger across the fruit surface and determining the ease or difficulty of hair removal.

Ad. 63: Fruit: color of skin

The color of skin is assessed at harvest after removal of as much hair as practical. The color of the skin does not include coloration from hair.

Ad. 65: Fruit: color of outer pericarp

Ad. 66: Fruit: color of locules



Ad. 67: Fruit: spread of reddish color along locules



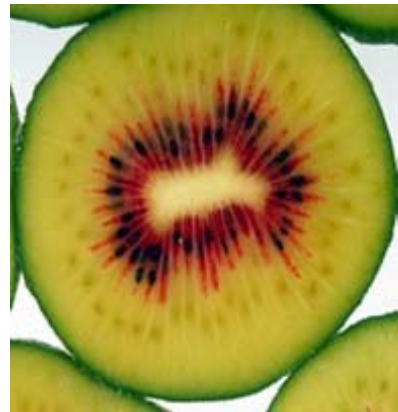
1
very weak



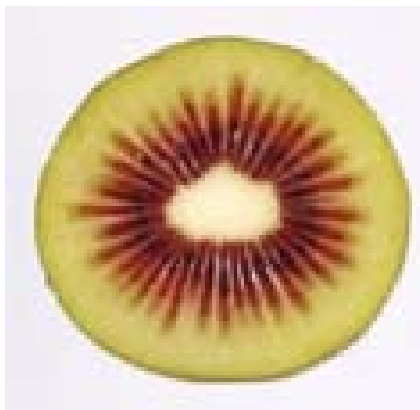
2
weak



3
medium

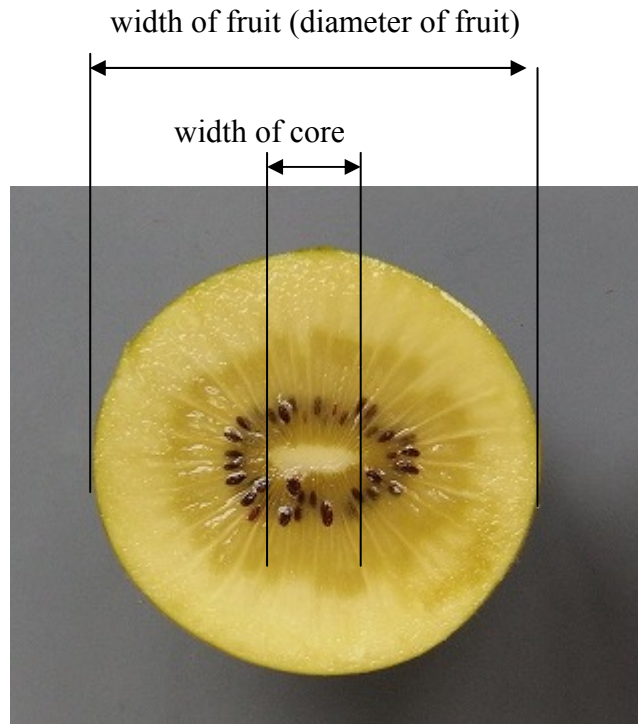


4
strong

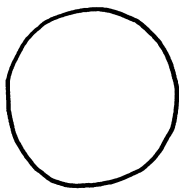


5
very strong

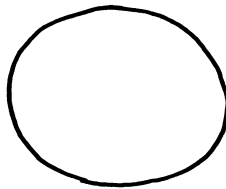
Ad. 69: Fruit: width of core relative to fruit



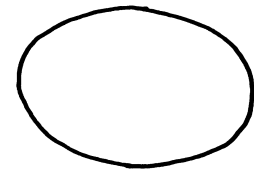
Ad. 70: Fruit: general shape of core in cross section



1
circular



2
oblate



3
transverse elliptic

Ad. 72: Fruit: sweetness

The total soluble solids content is measured by refractometer.

Ad. 73: Fruit: acidity

Acidity is determined by titration of titrateable acids.

Ad. 74: Time of vegetative bud burst

When 10% of buds are showing green shoots.

Ad. 75: Time of beginning of flowering

When 10% of flower buds have fully opened.

Ad. 76: Time of maturity for harvest

It is recommended that harvest occur when the total soluble solids content is at the level determined by national or regional harvest requirements. The total soluble solids can be measured by Brix test.

9. Literature

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Valmori, I., 1991: *Nuove varietà in frutticoltura*. Bologna: Edizioni Agricole.

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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 Genus	<input type="text"/>	
1.2 Botanical name	<input type="text" value="Actinidia Lindl."/>	
1.3 Common name	<input type="text" value="Actinidia, Kiwifruit, Kiwi, Mihoutao"/>	
1.4 Species (please complete)	<input type="text"/>	
1.5 Common name (please complete)	<input type="text"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
Telephone No.	<input type="text"/>	
Fax No.	<input type="text"/>	
E-mail address	<input type="text"/>	
Breeder (if different from applicant)	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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3. Proposed denomination and breeder's reference

Proposed denomination
(if available)

Breeder's reference

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

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

(.....) x (.....)
female parent male parent

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

(.....) x (.....)
female parent male parent

(c) unknown cross []

4.1.2 Mutation []
(please state parent variety)

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

4.1.4 Other []
(please provide details)

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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4.2 Method of propagating the variety

4.2.1 Vegetative propagation

- (a) cuttings []
- (b) grafting (budding) indicate usual rootstock []
- (c) *in vitro* propagation []
- (d) other (state method) []

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TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

Characteristics	Example Varieties	Note
5.1 Time of beginning of flowering (for all varieties) (75)		
very early		1[]
very early to early		2[]
early	Hort16A (A), Yukimusume (B)	3[]
early to medium		4[]
medium	Abbott (A), Kousui (B)	5[]
medium to late		6[]
late	Hayward (A)	7[]
late to very late		8[]
very late		9[]
5.2 Fruit: weight (for female and hermaphrodite varieties) (46)		
very low		1[]
very low to low		2[]
low	Huaguang2 (A)	3[]
low to medium		4[]
medium	Hort16A (A), Hortgem Tahi (B), Tomua (A)	5[]
medium to high		6[]
high	Hayward (A), Jin Feng (A)	7[]
high to very high		8[]
very high	Jade Moon (A)	9[]

TECHNICAL QUESTIONNAIRE		Page {x} of {y}	Reference Number:
Characteristics		Example Varieties	Note
5.3 Fruit: shape (for female and hermaphrodite varieties) (50)			
ovate		Hort16A (A), Jecy Gold (A), Yamagatamusume (B)	1[]
oblong		Hortgem Toru (B), Wilkins Super (A)	2[]
elliptic		Hayward (A), Mitsukou (B)	3[]
circular		Hort51-1785 (A)	4[]
oblate		Kuimi (A), Shinzan (B)	5[]
obovate		Monty (A)	6[]
5.4 Fruit: styler end (for female and hermaphrodite varieties) (52)			
strongly depressed			1[]
weakly depressed		Jade Moon (A)	2[]
flat		Hayward (A), Satoizumi (B)	3[]
rounded		Kousui (B), Tomua (A)	4[]
weakly blunt protruding		Skelton (A)	5[]
strongly blunt protruding		Hort16A (A)	6[]
pointed protrusion		Hortgem Toru (B)	7[]
5.5 Fruit: hairiness of skin (for female and hermaphrodite varieties) (59)			
absent		Shinzan (B), a-Shouwa (B)	1[]
present		Hayward (A)	9[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
Characteristics	Example Varieties	Note	
5.6 Fruit: color of outer pericarp (for female and hermaphrodite varieties) (65)			
light green	Shinzan (B)	1[]	
medium green	Hayward (A)	2[]	
dark green	Hortgem Toru (B)	3[]	
greenish yellow	Hort22D (A), Satoizumi (B)	4[]	
medium yellow	Hort16A (A), Kousui (B)	5[]	
dark yellow	Hort51-1785 (A)	6[]	
yellowish orange		7[]	
orange		8[]	
red		9[]	
red purple		10[]	
5.7 Fruit: color of locules (for female and hermaphrodite varieties) (66)			
light green	Shinzan (B)	1[]	
medium green	Hayward (A), Hortgem Tahiti (B)	2[]	
dark green	Hortgem Toru (B)	3[]	
greenish yellow	Satoizumi (B)	4[]	
medium yellow	Hort16A (A), Kousui (B)	5[]	
dark yellow	Hort51-1785 (A)	6[]	
red	Hort22D (A), Hortgem Rua (B)	7[]	
red purple		8[]	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.8 Time of maturity for harvest (for female and hermaphrodite varieties) (76)		
very early	Hortgem Rua (B)	1[]
very early to early		2[]
early	Hort 22D (A), Hortgem Tahī (B), Yamagatamusume (B)	3[]
early to medium		4[]
medium	Kousui (B), Tomua (A)	5[]
medium to late		6[]
late	Hayward (A), Yukimusume (B)	7[]
late to very late		8[]
very late		9[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
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<i>Example</i>	<i>Fruit: weight</i>	<i>low</i>	<i>medium</i>
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Comments:

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, please provide information concerning: Plant: ploidy:

Plant: ploidy		
diploid	Hort16A (A), Kousui (B)	2[]
triploid		3[]
tetraploid	Hortgem Tahi (B), Kuimi(A)	4[]
pentaploid	Shinzan (B)	5[]
hexaploid	Hayward (A), Mitsukou (B)	6[]
octoploid		8[]

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:
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9. Information on plant material to be examined or submitted for examination.

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

- | | | |
|---|---------|--------|
| (a) Microorganisms (e.g. virus, bacteria, phytoplasma) | Yes [] | No [] |
| (b) Chemical treatment (e.g. growth retardant, pesticide) | Yes [] | No [] |
| (c) Tissue culture | Yes [] | No [] |
| (d) Other factors | Yes [] | No [] |

Please provide details for where you have indicated "yes".

.....

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes []

(please provide details as specified by the Authority)

No []

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]