



TWF/31/9

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**TECHNICAL WORKING PARTY
FOR
FRUIT CROPS**

**Thirty-First Session
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WORKING PAPER ON REVISED TEST GUIDELINES FOR PERSIMMON
(*Diospyros kaki* Thunb.)

Document prepared by experts from Japan

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I. Subject of these Guidelines

These Test Guidelines apply to all vegetatively propagated fruit varieties of *Diospyros kaki* Thunb. and their hybrids.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from a state other than in which the testing takes place must make sure that all customs formalities are complied with. As a minimum, the following quantity of plant material is recommended:

5 plants (one-year old grafts) on rootstocks of *Diospyros kaki* or of *Diospyros lotus*.

2. The plant material supplied should be visibly healthy, not lacking in vigour or affected by any important pests or diseases. It should preferably not be obtained from *in vitro* propagation. If it has been produced by *in vitro* propagation this fact has to be stated by the applicant.

3. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

1. To assess distinctness, it is essential for the trees under test to bear a satisfactory crop of fruit for at least two growing periods.
2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.
3. The tests should be carried out under conditions ensuring normal growth. As a minimum, each test should include all 5 plants. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.
4. Additional tests for special purposes may be established.

IV. Methods and Observations

1. Unless otherwise stated, all observations should be made on 5 plants or 10 typical parts from each of 5 plants.
2. For 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.
3. Unless otherwise stated, all observations on the tree and the one-year-old shoot should be made during dormant season. All observations on the one-year-old shoot should be made on the middle third of the one-year-old shoots.

4. Unless otherwise stated, all observations on the flower should be made on fully developed flowers at full flowering.
5. Unless otherwise stated, all observations on the leaf should be made in summer on fully developed leaves from the middle third of a current season's shoot.
6. Unless otherwise stated, all observations on the fruit should be made on fruits at the time of harvest maturity.

V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly within the variety. Their various states of expression should be fairly evenly distributed throughout the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:
 - (a) Fruit: shape in longitudinal section (characteristic 27)
 - (b) Fruit: color of skin at the time of maturity for consumption (characteristic 36)
 - (c) Time of maturity for consumption (characteristic 52)
 - (d) Type of astringency (characteristic 54)

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.
2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

3. Legend

(*) Characteristics that should be used on all varieties in every growing period over which examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

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

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

This table is based on TG/92/3 and TWF/30/10.

Characteristics	State	Example varieties	Note
1. Tree: vigor	weak medium strong	Sanja, Kurogaki Shogatsu, Akagaki Hiratanenashi	□3 5 7
change an example variety			
2. Tree: habit (*)	erect semi erect spreading drooping	Saijo Hiratanenashi Fuyu Sakoksi	1 2 3 4
delete some example varieties			
3. One-year-old shoot: (*) length	short medium long	Izu Suruga Fuyu	3 5 7
4. One-year-old shoot: thickness	thin medium thick	Gosho, Nishimurawase Jiro Fuyu	3 5 7
5. One-year-old shoot: length of internode	short medium long	Nishimurawase Gosho Gionbo, Fuyu	3 5 7
6. One-year-old shoot: color	gray brown yellow brown brown red brown	Yotsumizo, Sanja Hiratanenashi Atago Fuyu	1 2 3 4
add new state: gray yellow			
7. One-year-old shoot: [8] number of lenticels (*)	few medium many	Toyoka Fuyu, Jiro, Hiratanenashi Amahyakume, takura	3 5 7
change the name of chr.: to replace density by number			
8. One-year-old shoot: [9] size of lenticel	small medium large	Aizumishirazu, Yotsumizo Fuyu, Saijo Takura, Moriya	3 5 7
9. One-year-old shoot: [10] shape of lenticel (*)	oblong elliptic round	Kosyuhyakume Fuyu, Jiro, Hiratanenashi Hanagosho, Nishimurawase	1 2 3
10. Bud: size of bud support [11] (+)	small medium large	Lantern Akoumankaki Kosyuhyakume	3 5 7

Characteristics	State	Example varieties	Note
11. Bud: shape of bud support [12] (+)	elongated	Square	1
	obovate	Costata	2
	rounded	Kaki Tipo	3
	oblate	Akagaki	4
12. Bud: size [13]	small	Farmacista Honorati	3
	medium	Amankaki	5
	large	Hiratanenashi	7
13. Bud: shape in longitudinal [14] section (*)(+)	triangular	Fuyu, Aizumishirazu	1
	round	Jiro, Saijo	2
	elliptic	Hiratanenashi	3
change the name of chr.: to add 'in longitudinal section' subgroup: to check to replace round by circular and elliptic by ovate			
[15]. Bud: hairiness	weak	Kosyuhyakume	3
	medium	Aizumishirazu	5
	strong	Farmacista Honorati	7
subgroup: to check whether keep or not			
14. Bud: position in relation [16] to shoot (*)(+)	adpressed	Suruga	1
	slightly held out	Fuyu	2
	markedly held out	Izu	3
15. Leaf blade: length	short		3
	medium		5
	long		7
subgroup: to check example varieties. Jp has no experince.			
16. Leaf blade: width	narrow		3
	medium		5
	broad		7
subgroup: to check example varieties. Jp has no experince.			
17. Leaf blade: shape [18] (*)(+)	obovate	Sakoksi	1
	elliptic	Fuyu, Aizumishirazu	2
	ovate	Hanagosho, Hiratanenashi	3
18. Leaf blade: shape in [20] cross section	concave	Fuyu, Jiro, Hiratanenashi	1
	flat	Moriya, Yotsumizo	2
	convex	Tsurunohashi	3
19. Leaf blade: shape [21] of apex (+)	acuminate	Aizumishirazu	3
	acute	Fuyu, Jiro, Saijo, Atago	5
	obtuse	Suruga, Hiratanenashi	7

Characteristics	State	Example varieties	Note
20. Leaf blade: shape [22] of base (*)(+)	cuneate	Eboshi	1
	acute	Aizumishirazu	2
	obtuse	Fuyu, Gosho	3
	round	Suruga, Amahyakume	4
21. Leaf blade: autumn color [23]	green	Atago	1
	greenish-brown	Kosyuhyakume	2
	yellowish-brown	Ogosho	3
	brownish-red	Hiratanenashi	4
22. Flower: sex expression [24] (*)	female flowers only	Fuyu, Jiro, Hiratanenashi	1
	female and male flowers	Hanagosho	2
	female, male and hermaphrodite flowers	meotogaki, Kubogataobishi	3
delete some example varieties			
23. Female flower: diameter [25] (*)	small	Yotsumizo, Kubo	3
	medium	Aizumishirazu	5
	large	Amahyakume, Kosyuhyakume	7
24. Female flower: number of [27](*) corolla lobes	four	Kosyuhyakume	1
	more than four	Marcatelli	2
25. Female flower: size of [28] sepal	small	Hiratanenashi	3
	medium	Mercatelli	5
	large	Kaki Tipo	7
26. Female flower: sepal form (+) when viewed from above	round	Anzai	1
	elliptic	Izu	2
	square	Fuyu, Aizumishirazu	3
	cross	Jiro, Hiratanenashi	4
	cross made by different shaped sepals	Oshorokaki	5
27. Fruit: size [31] (*)	small	Yotsumizo	3
	medium	Izu, Hiratanenashi	5
	large	Kosyuhyakume, Fuyu	7
28. Fruit: shape in [32] longitudinal section (*)(+)	napiform	Hoshomaru, Hanagosho	1
	ovate	Kosyuhyakume	2
	triangular	Atago, Yotsumizo	3
	elliptic	Saijo	4
	round	Aizumishirazu, Amahyakume	5
	oblate	Fuyu, Izu, Jiro	6
	square	Hiratanenashi	7
change the order of states			

Characteristics	State	Example varieties	Note
29. Fruit: shape in cross [33] section (*)(+)	round	Aizumishirazu, Fuyu	1
	squared round	Nishimurawase	2
	square	Jiro, Hiratanenashi	3
30. Fruit: shape of apex (*)(+)	acute	Hoshomaru	1
	rounded	Hanagosho, Nishimurawase	2
	truncated	Fuyu, Akagaki	3
	emarginate	Aizumishirazu, Zenjimaru	4
change the name of states			
31. Fruit: grooves at apex (+)	absent	Suruga, Saijo	1
	indistinct	Hanagosho, Atago	2
	distinct	Aizumishirazu	3
32. Fruit: shallow concentric cracks at apex	absent or very weak present	Fuyu, Jiro, Hiratanenashi	1
	weakly present	Saijo	2
	strongly present	Ichidagaki□Dojohachiya	3
33. Fruit: occurring cracking (*) at apex	absent or very weak present	Fuyu, Hiratanenashi, Saijo	1
	weakly present	Gosho, Hanagosho	2
	strongly present	Okugosho, Jiro	3
change the order of chr.:former chr. No.55			
subgroup: To check whether add or not new characteristic, Fruit: humidity markings.			
34. Fruit: grooves at side [34] (+)	absent or very shallow	Fuyu, Hiratanenashi	1
	shallow	Mizushima	3
	medium	Jiro	5
	deep	Gionbo	7
35. Fruit: wrinkles at calyx end	absent or very few	Fuyu, Hiratanenashi	1
	few	Kosyuhyakume, Akagaki	3
	medium	Jiro	5
	many	Fujiwaragosho	7
36. Fruit: point of calyx (+) attachment in longitudinal section	raised	Saijo	1
	level	Yotsumizo	2
	depressed	Jiro, Izu, Fuyu, Hiratanenashi	3
37. Fruit: horizontal groove (+) at calyx end	absent	Jiro, Fuyu	1
	present	Fudegaki, Damopan	9
38. Fruit: calyx separation (*)	absent	Zenjimaru, Hiratanenashi	1
	weakly present	Fuyu	2
	strongly present	Suruga, Hanagosho	3
change the order of chr.: former chr. No.56			

Characteristics	State	Example varieties	Note
39. Fruit: color of skin at the [35] time of maturity for (*) (+) consumption (only for varieties which are firm flesh at eating)	green	Saijo	1
	yellow	Hiratanenashi	2
	orange	Aizumishirazu, Kosyuhyakume	3
	orange red	Jiro, Fuyu	4
	black	Kurogaki	5
subgroup: to check the name of chr. delete some example varieties			
40. Fruit: color of skin at the [36] time of physiological ripening (*) (+) (only for varieties which are soft flesh at eating)	orange	Costata	1
	orange	dark-orange	Kaki Tipo 2
	orange	Kosyuhyakume	3
	red	Akagaki	4
subgroup: to check the name of chr.			
41. Fruit: color of flesh at the [37] time of maturity for (*) (+) consumption (as for No.39)	yellow	Hiratanenashi, Amahyakume	1
	yellow-orange	Hana Fuyu	2
	orange	Fuyu, Jiro	3
	orange-red	Izu	4
	red	Suruga, Goshō	5
	brown-orange	Kaki Tipo(PVNA)	6
	brown	Mercatelli(PVNA)	7
subgroup: to check the name of chr.			
42. Fruit: color of flesh at the [38] time of physiological (*) ripening (as for No. 40) (+)	yellow	Damopan(PCA)	1
	orange-yellow	Costata(PCA), Fuyu(PCNA)	2
	orange	Kaki Tipo(PVA), Hana Fuyu(PCNA)	3
	red-orange	Ogoshō(PCNA)	4
	red	Yokono(PCA), Izu(PCNA)	5
	brown	Kaki Tipo(PVNA)	6
	dark-brown	Mercatelli(PVNA)	7
subgroup: to check the name of chr.			
43. Fruit: size of brown specks in flesh	absent or very few	Atago, Saijo	1
	small	Fuyu, Jiro	3
	medium	Shogatsu, Amahyakume	5
	large	Zenjimarū, Nishimurawase	7
subgroup: to check the name of chr.			
44. Fruit: size of ribrous [40] central zone (+)	small	Kosyuhyakume	3
	medium	Akoumankaki	5
	large	Goshō	7
subgroup: to check the name of chr.			
45. Fruit: width of calyx	narrow	Saijo, Kubo	3
	medium	Hanagosho, Akagaki	5
	broad	Goshō, Yotsumizo, Fuyu,	7
		Jiro	

Characteristics	State	Example varieties	Note
46. Fruit: size of calyx [41] (+)	small	Naganogosho	3
	medium	Fuyu, Hiratanenashi, Atago	5
	large	Amahyakume, Dojohachiya	7
47. Fruit: calyx position [42] (*)(+)	adherent	Fuyu, Izu	1
	horizontal	Jiro	2
	semi erect	Hiratanenashi	3
	erect	Aizumishirazu, Saijo	4
change the name of chr.: to delete 'in longitudinal section'			
48. Fruit: thickness of [43] stalk	thin	Saijo, Yotsumizo	3
	medium	Nishimurawase	5
	thick	Fuyu, Jiro	7
49. Fruit: length of [44] stalk	short	Hanagosho, Fuyu, Jiro	3
	medium	Hiratanenashi, Saijo	5
	long	Zenjimaruru, Fudegaki	7
50. Seed: size [45] (*)	small	Gosho	3
	medium	Nishimurawase	5
	large	Fuyu, Atago	7
subgroup: to check whether keep or not asterisk			
51. Seed: shape in profile view [46] (*)(+)	rounded	Maekawajiro	1
	subtriangular	Fuyu	2
	subovate	Shogatsu, Yokono	3
	reniform	Mercatelli	4
	elliptic	Saijo	5
	narrow elliptic	Atago	6
subgroup: to check whether keep or not asterisk delete some example varieties			
52. Fruit: color of seed	green brown	Saijo	1
	brown	Aizumishirazu, Akagaki	2
	dark brown	Fuyu, Jiro	3
53. Time of female flower [49] flowering (80% open) (*)	early	Hiratanenashi, Nishimurawase	3
	medium	Jiro, Izu	5
	late	Fuyu, Gosho	7
54. Time of budburst	early	Hiratanenashi	3
	medium	Kosyuhyakume	5
	late	Fuyu	7
55. Time of maturity for [50] consumption (as for No. 39) (*)(+)	early	Izu, Nishimurawase	3
	medium	Hiratanenashi	5
	late	Fuyu, Atago	7
subgroup: to check the name of chr.			

Characteristics	State	Example varieties	Note
56. Time of physiological [51] ripening (as for No. 40) (*) (+)	very early	Mikatani Gosho	1
	early	Sakoksi	3
	medium	Kaki Tipo	5
	late	Shogatsu	7
	very late		9
subgroup: to check the name of chr.			
57. Fruit: astringency under (*) (+) artificial pollination	absent whether seeded or not	Fuyu, Jiro, Gosho	1
	absent depend on number of seeds	Nishimurawase	2
	present with seeds	Aizumishirazu	3
	present whether seede or not	Saijo, Atago	4
change			
57a. Fruit: change of color of flesh related seed formation under artificial pollination	absent (Pollination constant)	Fuyu, Gosho, Saijo, Atago	1
	present (Pollination variant)	Nishimurawase, Aizumishirazu	9
change			

VIII. Explanations on the Table of Characteristics / Erklärungen zur Merkmalstabelle

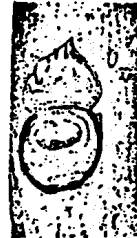
Ad / zu 10. Bud: size of bud support /
Knospe: Größe des Wulstes



3
small /
klein



5
medium /
mittel



7
large /
groß

Ad / zu 11. Bud: shape of bud support /
Knospe:



1
elongated /



2
obovate /
verkehrt eiförmig



3
rounded /
rundlich



4
oblate /

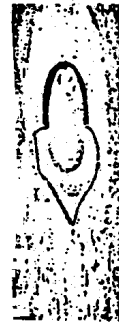
Ad / zu 13. Bud: shape in longitudinal section/
Knospe:



1
triangular /
dreieckig

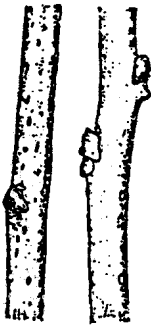


2
Round/
Rundlich

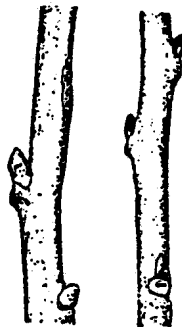


3
elliptic /
elliptisch

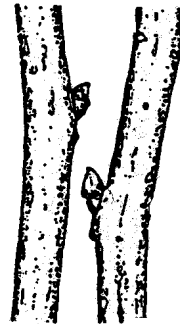
Ad / zu 14. Bud: position in relation to shoot /
Knospe:



1
adpressed/



2
slightly held out/

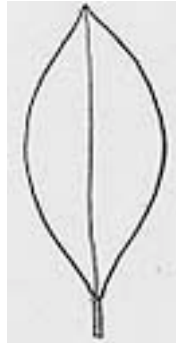


3
strongly held out /

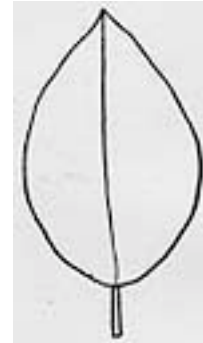
Ad / zu 17. Leaf blade: shape /
Blattspreite: Form



1
obovate /
verkehrt eiförmig

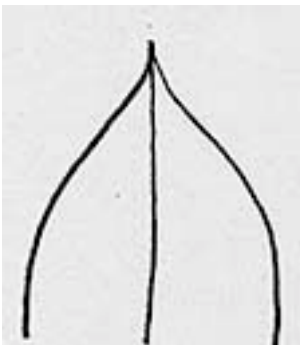


2
Elliptic /
Elliptisch

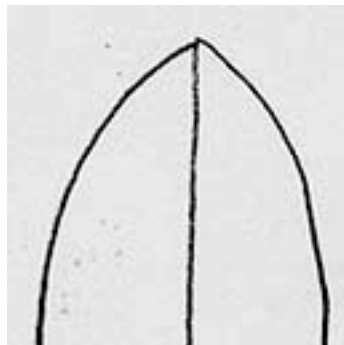


3
ovate /
eiförmig

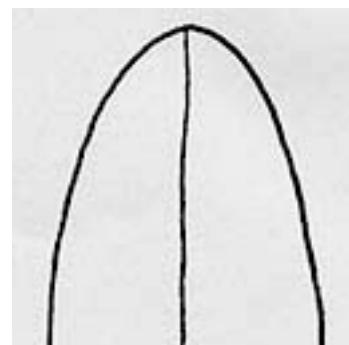
Ad / zu 19. Leaf blade: shape of apex /



3
acuminate /

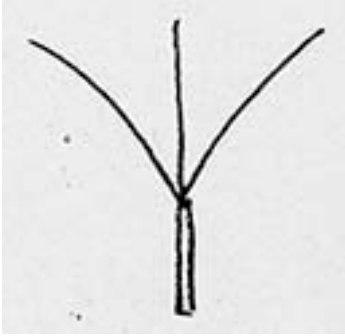


5
acute /
Spitz

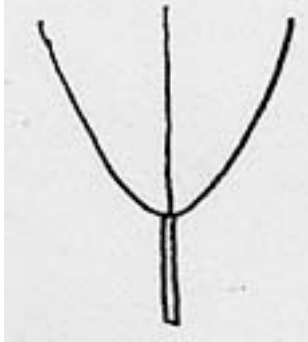


7
obtuse /
stumpf

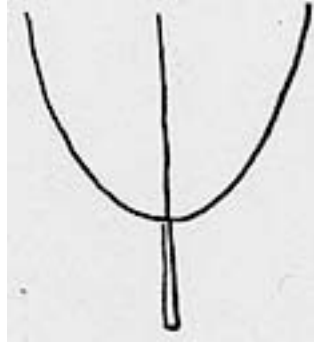
Ad / zu 20. Leaf blade: shape of base /
Blattspreite: form der Basis



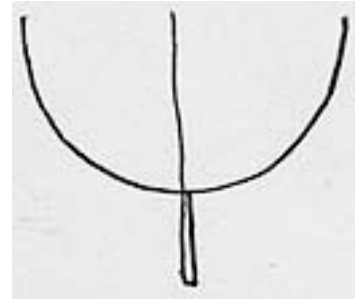
1
cuneate



2
acute /
Spitz

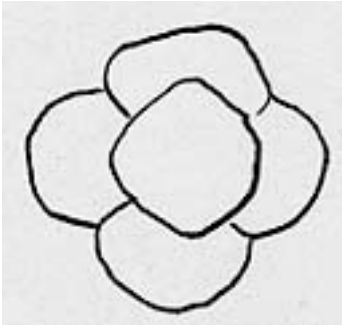


3
obtuse /
stumpf

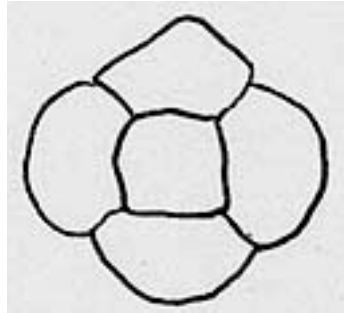


4
round /
rundlich

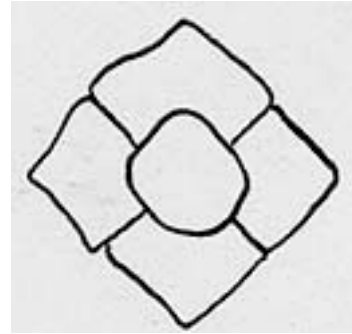
Ad / zu 26. Female flower: sepal form when viewed from above/



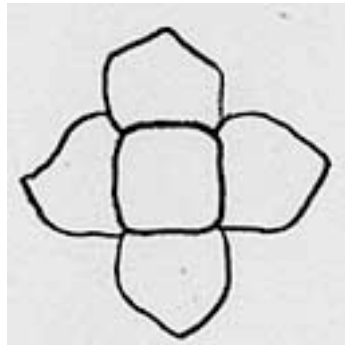
1
Round /



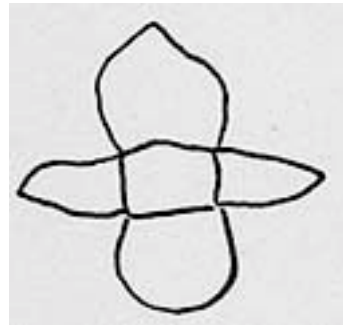
2
Elliptic /
elliptisch



3
square /



4
cross

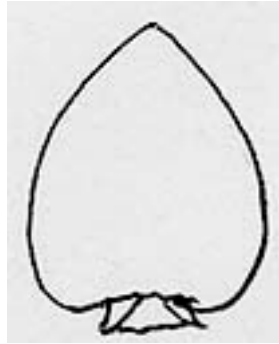


5
cross made by different shape
sepals

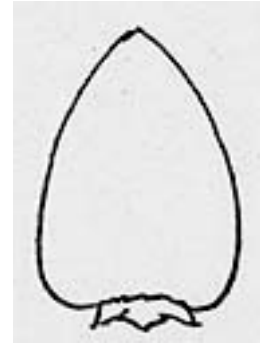
Ad / zu 28. Fruit: shape in longitudinal section/



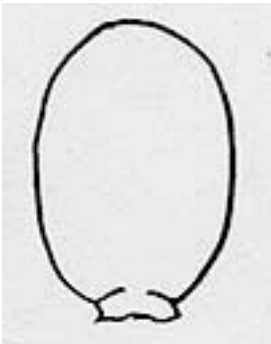
1
napiform/



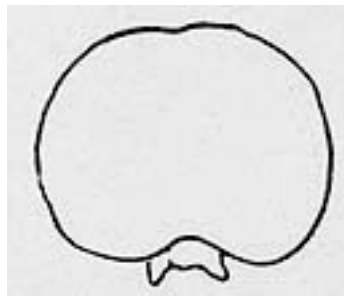
2
ovate



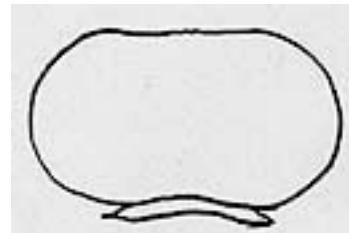
3
triangular /



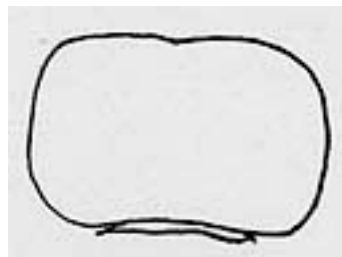
4
Elliptic /



5
round /

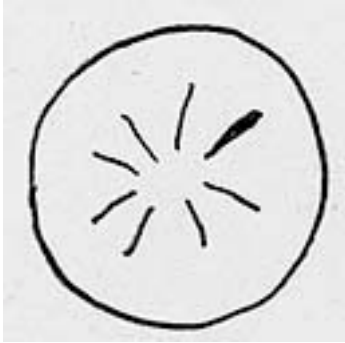


6
oblate /



7
square /

Ad / zu 29. Fruit: shape in cross section /
Frucht: Form in



1
round /



2
square round /

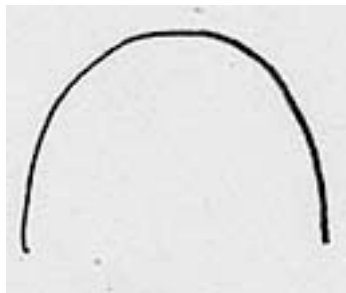


3
square /

Ad / zu 30. Fruit: shape of apex /



1
acuate /



2
rounded /

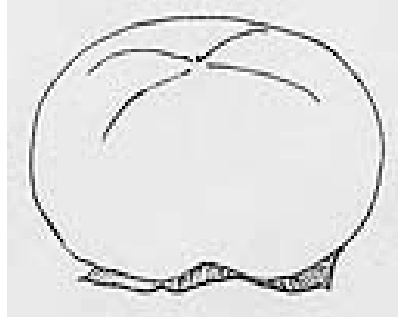


3
truncated /

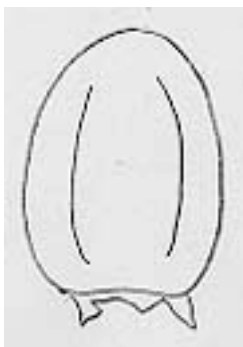


4
emarginate /

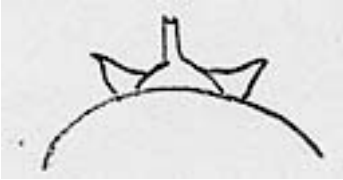
Ad / zu 31. Fruit: grooves at apex /



Ad / zu 34. Fruit: grooves at side /



Ad / zu 36. Fruit: point of calyx attachment in longitudinal section /



1
raised /

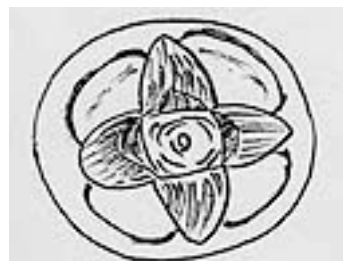


2
level /



3
depressed /

Ad / zu 37. Fruit: horizontal groove at calyx end /



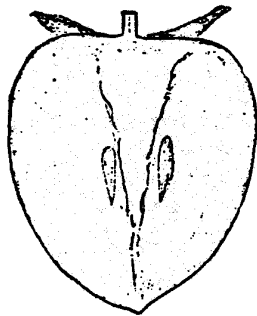
Ad / zu 39,41,55. The time of maturity for consumption /

This characteristic is for varieties of which flesh is firm at eating.
The time of maturity for consumption is reached when the flesh is still firm and the skin color changes from green-yellow to orange-red according to the different varieties.

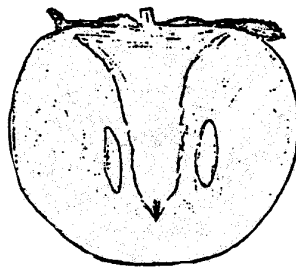
Ad / zu 40,42,56. The time of Physiological ripening /

This characteristic is for varieties of which flesh is soft at eating.
The time of physiological ripening is reached when the flesh becomes soft. The fruits should be stored in air at normal room temperature (about 15°C), without any chemical or other treatments.

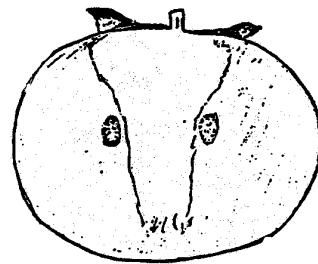
Ad / zu 44. Fruit: size of ribrous central zone /



3
small /
Klein

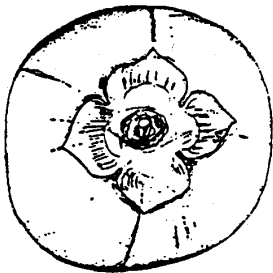


5
medium /
mittel

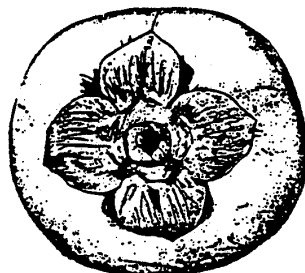


7
large /
groß

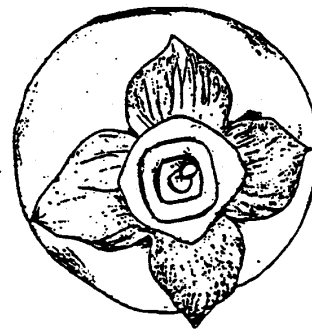
Ad / zu 46. Fruit: size of calyx /



3
small /
klein



5
medium /
mittel



7
large /
groß

Ad / zu 47. Fruit: calyx position /



1
adherent /



2
horizontal /

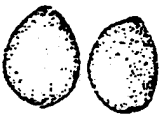


3
semi erect /



4
erect /

Ad / zu 51. Seed: shape in profile view /



1
rounded



2
subtriangular



3
subovate



4
reniform



5
elliptic



6
narrow elliptic

Ad / zu 57. Fruit: astringency under artificial pollination/

Ad / zu 57a. Fruit: change of color of flesh related to seed formation under artificial pollination/

PC = pollination constant (astringent = PCA, non astringent = PCNA)

The fruits of these varieties never change the color of the flesh which always remains light when seeded (pollinated) or seedless (unpollinated).

PV = pollination variant (astringent = PVA, non astringent = PVNA)

The fruits of these varieties modify the characteristics of flesh which becomes: lightcolored and completely astringent when seedless; more or less dark and with variable astringency according to seeds number which depends on the different degree of pollination.

A = astringent: These varieties do not lose their astringency until the fruit become soft and fully ripe.

NA = non astringent: These varieties have no astringency even when the fruit is firm.

This classification of astringency has two factors related seed formation under artificial pollination.

The first factor is the change of the flesh color. The second is the presence of astringency.

As PVA varieties make few brown specks in flesh when seeded, the flesh is still lightcolored and astringent.

As PVNA varieties make many brown specks in flesh depend on the number of seeds, the flesh varies darkcolored and variable astringent according to the number of seeds.

Classification of example varieties

Example Varieties	Type of astringency	Example Varieties	Type of astringency
Aizumishirazu	PVA	Kubogataobishi	PVNA
Akagaki	PVNA	Kurogaki	PVNA
Amahyakume	PVNA	Lantern	??
Akoumankaki	??	Maekawajiro	PCNA
Amankaki	??	Meotogaki	PCA
Anzai	PVNA	Mercatelli	PVNA
Atago	PCA	Mikatanigosho	PVNA
Costata	PCA	Mizushima	PVNA
Damopan	PCA	Moriya	PCA
Dojohachiya	PCA	Naganogosho	PVNA
Eboshi	PCA	Nishimurawase	PVNA
Farmacista Honorati	??	Obishi	PVNA
Fudegaki	PVNA	Ogosho	PCNA
Fujiwaragosho	PCNA	Okugosho	PCA
Fuyu	PCNA	Oshorokaki	PVNA
Gionbo	PCA	Saijo	PCA
Gosho	PCNA	Sakoksi	PCA
Hanagosho	PCNA	Sanja	PCA
Hana Fuyu	PCNA	Shogatsu	PVNA
Hazegosho	PCNA	Square	??
Hiratanenashi	PVA	Suruga	PCNA
Hoshomaru	PVA	Takura	PCA
Ichidagaki	PCA	Toyoka	PVNA
Izu	PCNA	Tsurunohashi	PCA
Jiro	PCNA	Yamato	PCA
Kaki Tipo	PVA or PVNA ??	Yokono	PCA
Kosyuhyakume	PVA	Yotsumizo	PCA
Kubo	PVNA	Zenjimaru	PVNA

Synonyms and astringent type of the example varieties

Example Varieties	Synonyms
Aizumishirazu (PVA)	Mishirazu, Sainenji, Aizugaki
Akagaki (PVNA)	Tohachi, Sakigake
Amahyakume (PVNA)	Daidaimaru, Edoichi, Bikunimaru, Tokyogaki
Damopan (PCA)	Tamopan
Dojohachiya (PCA)	Dojo
Fudegaki (PVNA)	Chinpogaki
Fuyu (PCNA)	Zuiko, Kaidagoshi
Gionbo (PCA)	Shotenbo
Gosho (PCNA)	Yamatogoshi
Hanagosho (PCNA)	Gorosukegaki, Shimogoshi
Hazegosho (PCNA)	Fukurogoshi
Hiratanenashi (PVA)	Hacchin, Syonaigaki, Okesagaki
Kosyuhyakume (PVA)	Fuji, Hachiya, Hyakume, Shibuhyakume, Daishiro, Edogaki, Fujisan
Moriya (PCA)	Muiya, Moiya
Obishi (PVNA)	Enza
Sakoksi (PCA)	Shakokushi, Sakokubanshi, Gijosakoksi
Shogatsu (PVNA)	Koharu, Gozen, Akaguma
Yamato (PCA)	Bonbori, Aoyata
Yotsumizo (PCA)	Mizogaki
Zenjimaru (PVNA)	Kizagaki, Edogaki

IX. Literature

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Condit, I. J. (1919), The kaki or oriental persimmon, USA, College of agriculture, Agricultural experiment station, Bulletin No. 316, p229-266, University of California press.

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Bellini, E., Giannelli, G. (1982), New directions in growing kaka, Informatore agrario, Vol. 38, No. 4, p.19027-19044.

Nagamine, T., Takeda, H. (1999), The descriptors for characterization and evaluation in plant genetic resources, Vol. 1, p370-375, Japan, National Institute of Agrobiological Resources, MAFF.

Cultivation and evaluation of fruit tree PGR (1996), Technical assistance activities for genetic resources projects ref. No. 9, p57-68, Japan: Japan International Cooperation Agency (JICA).

Japanese National Test Guidelines for persimmon (1979).

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
	TECHNICAL QUESTIONNAIRE to be completed in connection with an application for Plant Breeders' Rights /
1. Species	<i>Diospyros kaki</i> Thunb. <i>Persimmon</i> (Fruit varieties, rootstocks excluded)
2. Applicant (name and address)	
3. Proposed denomination or breeder's reference /	

4. Information on origin, maintenance and reproduction of the variety

4.1 Origin

(a) Seedling of unknown parentage []

(b) Produced by controlled pollination (indicate parent varieties) []

– Seed bearing parent []

.....

– Pollen parent []

.....

(c) Produced by open pollination of (indicate seed bearing parent only) []

.....

(d) Mutation or sport from (indicate parent variety) []

.....

(e) Discovery (indicate where and when) []

.....

4.2. *In vitro* propagation :

The plant material has been obtained by *in vitro* propagation yes []

no []

4.3 Virus status :

The plants of the variety are

(a) virus free

(b) virus tested
(indicate against which viruses)

.....
.....
.....

(c) The virus status is unknown

4.4 Other information :

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the state of expression which best corresponds).

Characteristics	Example Varieties	
5.1 Fruit: shape in longitudinal section (28)		
Napiform	Hoshomaru, Hanagosho	1[]
Ovate	Fuji	2[]
Triangular	Atago, Yotsumizo	3[]
Elliptic	Saijo	4[]
Round	Aizumishirazu, Amahyakume	5[]
Oblate	Fuyu, Izu, Jiro	6[]
Square	Hiratanenashi	7[]
5.2 Fruit: color of skin at the time of harvest maturity (39)		
Green yellow	Saijo, Shogatsu	1[]
Yellow orange	Hiratanenashi	2[]
Orange	Aizumishirazu, Hachiya	3[]
Orange red	Jiro, Fuyu	4[]
Black	Kurogaki	5[]
5.3 Time of maturity for consumption (55)		
Early	Izu, Nishimurawase	3[]
Medium	Hiratanenashi	5[]
Late	Fuyu, Atago	7[]
5.4 Fruit: astringency under artificial pollination (57)		
absent whether seeded or not	Fuyu, Jiro, Gosho	1[]
absent depend on number of seeds	Nishimurawase	2[]
present with seeds	Aizumishirazu	3[]
present whether seeded or not	Saijo, Atago	4[]

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different ^{o)}	State of expression of similar variety	State of expression of candidate variety
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^{o)} In the case of identical states of expressions of both varieties, please indicate the size of the difference.

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

7.3 Other information

A representative color photo of the variety should be added to 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 that question is yes, please attach a copy of such an authorization.

[End of document]