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TECHNICAL WORKING PARTY FOR FRUIT CROPS

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WORKING PAPER ON REVISED TEST GUIDELINES FOR ACTINIDIA (ACTINIDIA LINDL.)

Document prepared by experts from New Zealand

WORKING PAPER ON TEST GUIDELINES FOR ACTINIDIA (Actinidia Lindl.)

I. <u>Subject of these Guidelines</u>

These Test Guidelines have primarily been prepared for vegetatively propagated varieties of kiwifruit, but they may be applied to all vegetatively propagated female, male and hermaphroditic varieties of the genus *Actinidia* Lindl.

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 that in which the testing takes place must make sure that all quarantine and customs formalities are complied with. As a minimum., the following quantity of plant material is recommended:

- 8 plants on their own roots or
- 8 plants on a clonal rootstock.

The competent authorities to select the most appropriate rootstock.

2. The plant material supplied should be visibly healthy, not lacking in vigour or affected by any important pest or disease. It should preferably not be obtained from *in vitro* culture. If test material is grafted onto a clonal rootstock, there should be information available stating how the rootstock <u>may</u> affect the expression of characteristics. In the case of a female variety the applicant should send in or at least indicate one male variety, which flowers at the same time and is compatible with the female variety under test. The male variety should preferably be of the same taxon and at the same ploidy level as the female variety.

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 of female and fruiting hermaphroditic varieties it is essential that the plants under test bear a satisfactory crop of fruit for at least two growing periods. To assess distinctness of fruit size and fruit shape it is important to ensure adequate seed set, either by hand pollination or by providing sufficient pollinators.

2. To assess distinctness of male and non-fruiting varieties it is essential that the plants under test produce two full flowerings over at least two growing periods. If it is claimed that a variety is hermaphroditic, tests should be carried out to determine whether it is self-fertile and self-setting. Pollen viability should be tested separately in addition to flowers being bagged to prevent pollination by outside pollen. Hand pollination is recommended.

3. The testing 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.

4. The tests should be carried out under conditions ensuring normal growth. As a minimum, each test should include all 8 plants. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

5. Additional tests for special purposes may be established.

IV. Methods and Observations

1. Unless otherwise stated, all observations should be made on 8 plants or 10 parts of 8 plants.

2. For the assessment of uniformity and stability, a population standard of 1% and an acceptance probability of 95% should be applied for varieties resulting from a crossing, and a population standard of 2% with the same acceptance probability for mutations. For a sample size of 8 plants, the maximum number of off-types allowed in both cases would be 1.

3. The shape, size and hairiness of leaves can vary greatly according to the type and vigour 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.

4. Unless otherwise stated, all observations on the young shoot should be made during active vegetative growth, on internodes 10 to 20 cm from the tip of growing shoots

5. All observations on the stem (including observations on the over-wintering buds and bud support) should be made in the middle third of the replacement stem after leaf fall.

6. 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.

7. All observations on the presence or absence of anthocyanin colouration in vegetative organs refer to the general appearance of the organ, irrespective of whether red pigments are present in hairs or in the underlying skin.

8. All observations on the flower should be made on recently fully-opened terminal (king) flowers.

9. Unless otherwise stated, all observations on the fruit should be made on fruits at harvest maturity.

V. <u>Grouping of Varieties</u>

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 a 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.

For male varieties

(53)Petal: type of colouration
(90) Time of beginning of flowering
For female and hermaphroditic varieties

(63)Fruit: size
(64)Fruit: general shape
(73)Fruit: skin hairiness
(81)Fruit: outer pericarp colour at maturity for consumption
(91)Fruit: time of maturity for harvest

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states, as given in the four UPOV working languages in the Table of Characteristics, should be used.

2. Notes (1 to 9), for the purpose of electronic data processing, are given opposite the states of expression for each characteristic.

3. <u>Legend</u>:

(*) 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 renders this impossible.

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

TABLE OF CHARACTERISTICS

	<u>English</u>	<u>Français</u>	<u>Deutsch</u>	<u>Español</u>	<u>Example</u> Variety	<u>Note</u>
1. (*)	Plant: sex female male hermaphrodite				Hayward Matua	1 2 3
2.	Plant: fruit setting (hermaphrodite varieties only) absent present					1 9
3 . (+)	Plant: ploidy haploid diploid triploid tetraploid pentaploid hexaploid heptaploid octoploid				Hort16A Hayward	1 2 3 4 5 6 7 8
4.	Plant: vigour very weak weak medium strong very strong				Hayward Matua	1 3 5 7 9
5. (*)	Young shoot: hairiness absent present	5				1 9
6. (*)	Young shoot: density of hairiness sparse medium dense				Hayward King	3 5 7
7. (*) (+)	Young shoot: type of hairiness downy velutinous tomentose hirsute bristly hispid					1 2 3 4 5 6

8. (*)	Young shoot: anthocyanin colouration of growing tip		
	absent or very weak weak medium strong very strong	Hort16A King Tomua	1 3 5 7 9
9.	Stem: thickness thin medium thick	Hayward Bruno	3 5 7
10. (*)	Stem: colour of shoot on sunny side grey white green white grey brown yellow brown light brown red brown purple brown dark brown	King Sparkler Hort16A Ranger Bruno	1 2 3 4 5 6 7 8
11.	Stem: roughness of bark smooth medium rough	Sparkler Meteor Hayward	3 5 7
12.	Stem: hairiness absent present		1 9
13.	Stem: density of hairiness sparse medium dense	Meteor Hayward	3 5 7
14. (+)	Stem: type of hairiness downy velutinous tomentose hirsute bristly hispid	Kaimai Hayward	1 2 3 4 5 6
15. (*)	Stem: size of lenticels very small small medium	Kaimai Monty Hayward	1 3 5

	large very large	Hort16A	7 9
16. (*)	Stem: number of lenticels few medium many	Meteor Hayward Bruno	3 5 7
17. (*)	Stem: colour of lenticels greyish white greyish yellow greyish brown	Gracie Bruno Hort16A	1 2 3
18. (*) (+)	Stem: size of bud support (bud support height in relation to stem diameter) small small to medium medium medium to large large	Sparkler Hayward King Kaimai	3 4 5 6 7
19. (+)	Stem: slope on bud support distil face absent present	Sparkler Bruno	1 9
20.	Stem: profile of bud support distil face (if sloping) convex flat concave	Hayward Bruno Matua	1 2 3
21. (*) (+)	Stem: presence of bud cover absent present	Hort16A Hayward	1 9
22. (*) (+)	Stem: size of opening of bud cover small medium large	Abbott Hayward Elmwood	3 5 7
23. (+)	Stem: leaf scar flat shallow deep	Meteor Hort16A Monty	1 2 3

24. Stem: presence of pith

	absent present		1 9
25.	Stem: type of pith solid lamellate hollow		1 2 3
26. (*) (+)	Leaf blade: general shape lanceolate ovate broad ovate very broad ovate broad obovate very broad obovate	Kaimai Hayward Meteor Bruno Matua	1 2 3 4 5 6
27. (*) (+)	Leaf blade: shape of apex emarginate retuse rounded acute acuminate caudate	Hayward Kaimai	1 2 3 4 5 6
28. (+)	Leaf blade: arrangement of basal lobes far apart slightly apart touching slightly overlapping strongly overlapping	Kaimai Matua Hort16A Hayward	1 2 3 4 5
29.	Leaf blade: hairs on upper surface absent or very sparse sparse medium dense very dense	Hort16A Kaimai Bruno Meteor	1 3 5 7 9

	Leaf blade: hairs on lower surface absent or very sparse sparse		1
	medium dense very dense	Hayward Ranger	5 7 9
31.	Leaf blade: puckering/		
	absent or very weak	Kaimai	1
	weak	Hort16A	3
	medium	Hayward	5
	strong		7
	very strong		9
32.	Leaf blade: green		
(*)	colour of upperside		-
	light	TT	3
	dark	Hayward Bruno	5 7
		Diano	/
33.	Leaf blade: colour		
(*)	of lowerside		
(*)	of lowerside whitish		1
(*)	of lowerside whitish light green medium green	Bruno	1 2 3
(*)	of lowerside whitish light green medium green vellow green	Bruno Hayward	1 2 3 4
(*)	of lowerside whitish light green medium green yellow green yellow brown	Bruno Hayward	1 2 3 4 5
(*)	of lowerside whitish light green medium green yellow green yellow brown	Bruno Hayward	1 2 3 4 5
(*) 34.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation	Bruno Hayward	1 2 3 4 5
(*) 34.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present	Bruno Hayward	1 2 3 4 5
(*) 34.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present	Bruno Hayward	1 2 3 4 5 1 9
(*) 34. 35.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present Leaf blade: colour of	Bruno Hayward	1 2 3 4 5 1 9
(*) 34. 35.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present Leaf blade: colour of variegation	Bruno Hayward	1 2 3 4 5 1 9
(*) 34. 35.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present Leaf blade: colour of variegation white and green white red and green	Bruno Hayward	1 2 3 4 5 1 9
(*) 34. 35.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present Leaf blade: colour of variegation white and green white, red and green	Bruno Hayward	1 2 3 4 5 1 9 1 2
(*) 34. 35.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present Leaf blade: colour of variegation white and green white, red and green Leaf blade: spines along	Bruno Hayward	1 2 3 4 5 1 9 1 2
(*) 34. 35.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present Leaf blade: colour of variegation white and green white, red and green Leaf blade: spines along main vein on lowerside	Bruno Hayward	1 2 3 4 5 1 9 1 2
(*) 34. 35.	of lowerside whitish light green medium green yellow green yellow brown Leaf blade: variegation absent present Leaf blade: colour of variegation white and green white, red and green Leaf blade: spines along main vein on lowerside absent	Bruno Hayward	1 2 3 4 5 1 9 1 2 1

37.	Leaf : ratio petiole length/ blade length		
	very small	Kaimai	1
	siliali medium	Gracie	3 5
	large	Hayward	7
	very large	ing ward	, 9
38.	Petiole: density of hairiness		
	absent or very sparse		1
	sparse	Kaimai	3
	medium	Meteor	5
	dense	Bruno	7
	very dense	Tomua	9
39.	Petiole: anthocyanin		
	absent or very weak	Kaimai	1
	weak	Sparkler	3
	medium	Havward	5
	strong	Tomua	7
	very strong		9
40			
40.	colouration of protruding		
40.	colouration of protruding petal ends (at calyx split)		1
40.	colouration of protruding petal ends (at calyx split) absent or very weak	Hort16A	1
40.	colouration of protruding petal ends (at calyx split) absent or very weak weak medium	Hort16A	1 3 5
40.	rlower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong	Hort16A Hayward Meteor	1 3 5 7
40.	colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong	Hort16A Hayward Meteor	1 3 5 7 9
40.	rlower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant	Hort16A Hayward Meteor	1 3 5 7 9
40. 41. (*)	rlower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers	Hort16A Hayward Meteor	1 3 5 7 9
40. 41. (*)	riower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one	Hort16A Hayward Meteor Hayward	1 3 5 7 9
40. 41. (*)	riower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one 2-5	Hort16A Hayward Meteor Hayward Matua	1 3 5 7 9
40. 41. (*)	<pre>rlower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one 2-5 6-10 > 10</pre>	Hort16A Hayward Meteor Hayward Matua Tomuri	1 3 5 7 9 1 2 3 4
40. 41. (*)	<pre>riower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one 2-5 6-10 > 10</pre>	Hort16A Hayward Meteor Hayward Matua Tomuri	1 3 5 7 9 1 2 3 4
40. 41. (*) 42. (*)	<pre>riower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one 2-5 6-10 > 10 Flower: diameter very small</pre>	Hort16A Hayward Meteor Hayward Matua Tomuri	1 3 5 7 9 1 2 3 4
40. 41. (*) 42. (*)	<pre>riower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one 2-5 6-10 > 10 Flower: diameter very small small</pre>	Hort16A Hayward Meteor Hayward Matua Tomuri	1 3 5 7 9 1 2 3 4 1 3
40. 41. (*) 42. (*)	riower bud: anthocyamin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one 2-5 6-10 > 10 Flower: diameter very small small medium	Hort16A Hayward Meteor Hayward Matua Tomuri Sparkler Matua	1 3 5 7 9 1 2 3 4 1 3 5
40. 41. (*) 42. (*)	<pre>riower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one 2-5 6-10 > 10 Flower: diameter very small small medium large</pre>	Hort16A Hayward Meteor Hayward Matua Tomuri Sparkler Matua	1 3 5 7 9 1 2 3 4 1 3 5 7
40. 41. (*) 42. (*)	riower bud: anthocyanin colouration of protruding petal ends (at calyx split) absent or very weak weak medium strong very strong Inflorescence: predominant number of flowers one 2-5 6-10 > 10 Flower: diameter very small small medium large very large	Hort16A Hayward Meteor Hayward Matua Tomuri Sparkler Matua Hayward	1 3 5 7 9 1 2 3 4 1 3 5 7 9

43. (*) (+)	Flower: arrangement of petals (viewed from beneath)		
	apart touching overlapping	Abbott Matua Hayward	1 2 3
44. (*)	Flower stalk: length very short short medium long very long	Matua Hort 16A Tomua Jade Moon	1 3 5 7 9
45.	Flower stalk: density of hairiness absent or very sparse sparse dense		1 2 3
46.	Flower stalk: length of hairs short medium long	Hort16A Hayward Tomuri	3 5 7
47.	Sepal: predominant number 2 or 3 4 or 5 > 5		1 2 3
48. (*)	Sepal: general colour white green brown reddish-brown	Hort16A Tomua	1 2 3 4
49.	Sepal: density of hairiness absent or very sparse sparse dense		1 2 3
50.	Sepal: length of hairs short medium long		3 5 7

51.	Petal: curvature of apex (in longitudinal section) absent present	Bruno Hayward	1 2
52. (*)	Petal: main colour on adaxial side white greenish white yellowish white yellowish green yellow orange light pink red pink red	Hayward	1 2 3 4 5 6 7 8 9
53. (*)	Petal: type of colouration (adaxial side) single-coloured bicoloured	Meteor	1 2
54. (*)	Petal: shades of colour (for single-coloured varieties) absent present		1 9
55. (*)	Petal: distribution of colour (for single-coloured varieties) lighter towards the base lighter towards the top		1 2
56.	Petal: secondary colour (for bicoloured varieties) white green orange light pink dark pink	Hayward Meteor	1 2 3 4 5
57.	Petal: distribution of secondary colour (for bicoloured varieties) marginal blotched basal spot	Meteor	1 2 3

58.	Filament: colour white light green light pink dark pink	Ranger Matua	1 2 3 4
59.	Anther: colour yellow yellow orange grey dark purple black	Hayward	1 2 3 4 5
60.	Styles: number few medium many	Hort16A Hayward	3 5 7
61.	Styles: colour white whitish yellow light green	Hayward	1 2 3
62. (*)	Styles: attitude erect semi-erect both erect and horizontal horizontal	Hort16A Hayward Bruno	1 2 3 4
63. (*)	Fruit: size very small small medium large very large	Tomua Hayward Jade Moon	1 3 5 7 9
64. (*) (+)	Fruit: general shape ellipsoid oblong ovoid obovoid spheroid obloid	Hayward Bruno Hort16A Monty Kuimi	1 2 3 4 5 6

65. (*)	Fruit: shape in cross section (at median)		
(+)	circular	Bruno	1
	oblate	Hormond	2
	transverse emptic	Hayward	3
66.	Fruit: general shape		
(*)	of stylar end		
(+)	deeply depressed		1
	slightly depressed	Jade Moon	2
	round	пауwaru Тотиа	5 Д
	slightly blunt protruding	Skelton	5
	strongly blunt protruding	Hort16A	6
	slightly pointed protruding		7
	strongly pointed protruding		8
67.	Fruit: presence of		
(+)	calyx ring		
	absent or very weakly expressed	Bruno	1
	weakly expressed	Hayward	2
	strongly expressed	Qinmei,	2
		HOITIOA	3
68.	Fruit: shape of shoulder		
(*)	on stalk end		
(+)	square	TT	1
	rounded strongly sloping	Hayward Skelton	2
	sublighty sloping	SKEILUII	5
69.	Fruit: ratio stalk length/		
	fruit length	W. 1:2	1
	very small	Wuzhi 3	1
	medium	Allison	5
	large	Hayward	7
	very large	Jade Moon	9
70	Fruit nersistence of		
10.	sepals		
	absent		1
	present		9
71.	Fruit: lenticels on skin		
	absent		1
	present	Topstar	~
		Vantini	9

(*) Light green 1 medium green Hort16A 2 reddish green 3 greenish brown Hayward 4 medium brown Topstar Vantini 5 reddish brown 6 6 6 dark brown 7 7 Fruit: skin hairiness 1 (*) absent 1 9 7 74. Fruit: density of 7 9 74. Fruit: density of 7 9 (*) hairness 7 9 very sparse Topstar 7 very sparse Vantini 1 sparse Hort16A 3 medium Hayward 5 dense Bruno 7 75. Fruit: type of hairiness 2 1 (*) downy Hort16A 1 1 (+) velutinous 2 2 2 tomentoxe 3 3 1 hispid Bruno 5 3 fuiption 6 6 6 76. Fruit: di	72.	Fruit: skin colour		
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greenish brown Hayward 4 medium brown Topstar vantini 5 reddish brown 6 dark brown 7 73. Fruit: skin hairiness 1 present 9 74. Fruit: density of 1 (*) hairiness 9 very sparse Topstar very sparse Vantini sparse Hort16A anedium Hayward dense Bruno very dense 9 75. Fruit: type of hairiness 1 (*) downy Hort16A 1 (+) velutinous 2 tomentose 3 3 hirsute Hayward 4 bristly Bruno 5 hispid 6 6 70. Fruit: colour of hairs 2 evenly spread Hayward 1 mainly at stylar end Topstar Vantini 2 70. Fruit: colour of hairs 2 yellow-brown Hort16A 3		reddish green	TT 1	3
Iopstar Vantini 5 reddish brown 7 dark brown 7 73. Fruit: skin hairiness 1 (*) absent 1 present 9 74. Fruit: density of 1 (*) hairiness 7 very sparse Vantini very sparse Vantini sparse Hort16A nedium Hayward dense 9 75. Fruit: type of hairiness 1 (*) downy Hort16A (*) of hairs 2 eventy spread Hayward hispid 6 76. Fruit: distribution 6 77. Fruit: colour of hairs 1 eventy spread Hayward mainly at stylar end Topstar Vantini 2 yellow-brown Hort16A yellow-brown Hayward yellow-brown Hayward<		greenish brown	Hayward	4
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74. Fruit: density of (*) hairiness very sparse Topstar Vantini 1 sparse Hort16A 3 medium Hayward 5 dense Bruno 7 very dense 9 75. Fruit: type of hairiness 1 (*) downy Hort16A 1 (+) velutinous 2 tomentose 3 hirsute Hayward 4 bristly Bruno 5 hispid 6 6 76. Fruit: distribution (*) of hairs 1 (*) of hairs vently spread Hayward 1 mainly at stylar end Topstar Vantini 2 77. Fruit: colour of hairs Vantini 2 white 1 vantini 2 velow 2 vantini 2 77. Fruit: colour of hairs 1 Topstar white 1 vantini 2 velow 2 velow 2 yellow-brown				
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77. Fruit: colour of hairs1white1yellow2yellow-brownHort16Amedium brownHaywardreddish brownBrunodark brown6			Vantini	2
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John BrownHorrorJohn Brunomedium brownHayward4reddish brownBruno5dark brown6		vellow-brown	Hort16A	23
reddish brown Bruno 5 dark brown 6		medium brown	Hayward	<u></u>
dark brown 6		reddish brown	Bruno	- 5
		dark brown	Druno	6

78. (*)	Fruit: adherence of hairs to skin (when rubbed)		
()	weak	Hort16A	3
	medium		5
	strong	Hayward	7
79.	Fruit: adherence of skin		
	to flesh at maturity for		
	consumption		
	weak		3
	medium		5
	strong		7
80.	Fruit: skin colour at		
(*)	maturity for consumption		
	light green		1
	medium green		2
	reddish green		3
	yellow		4
	orange yellow		5
	orange		07
	light brown	Hort16A	/ 8
	medium brown	HOITIOA	0 0
	reddish brown	Tomua	10
	dark brown	Tomua	11
	purple-red		12
01			
81.	Fruit: outer pericarp		
$\binom{*}{(1)}$	colour at maturity for		
(+)	light green		1
	medium green	Hayward	2
	dark green	Thay ward	23
	greenish vellow		4
	medium vellow	Hort16A	5
	dark vellow		6
	vellowish orange		7
	orange		8
	red		9
	red-purple		10

82.	Fruit: inner pericarp		
(*)	colour (locules) at		
(+)	maturity for consumption		
	light green		1
	medium green	Hayward	2
	dark green		3
	greenish yellow		4
	medium yellow	Hort16A	5
	dark yellow		6
	yellowish orange		7
	orange		8
	red		9
	red-purple		10
83.	Fruit: core diameter		
(*)	relative to fruit diameter		
(+)	(at largest diameter)		
	small	Hort16A	3
	small to medium		4
	medium	Bruno	5
	medium to large	Tomua	6
	large	Havward	7
	C		
84.	Fruit: general core		
(*)	shape (in cross section)		
	circular		1
	oblate		2
	transverse elliptic	Hort16A	3
85.	Fruit: presence of core		
	fluting (in cross section)		
	absent		1
	present	Hayward	9
97			
00. (*)	Fruit: core colour at		
(\cdot)	white		1
(+)	groonish white	Hormond	1 2
	yellow white	Haywalu Hort 16 A	2
	yenow-winte	ΠΟΙΠΟΑ	
	red purple		4
	red-purple		5
87.	Fruit: sweetness at		
(+)	maturity for consumption		
	very low	Jade Moon	1
	low	Hayward	3
	medium	Tomua	5
	high	Hort16A	7
	very high		9

88. (+)	Fruit: acidity at maturity for consumption		
	low		3
	high		5 7
	lingii		/
89.	Time of vegetative bud		
(*)	burst		
	early	Tomua	3
	medium	Hayward	5
	late		7
90.	Time of beginning of		
(*)	flowering		
	early	Hort16A	3
	medium	Abbott	5
	late	Hayward	7
91.	Time of maturity for		
(*)	harvest		
	early		3
	medium	Tomua	5
	late	Hayward	7

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EXPLANATIONS AND METHODS

3 Plant: ploidy

Ploidy is determined by counting chromosomes or by flow cytometry. The basic chromosome number n = 29.

- 7 Young shoot: type of hairiness -
- 14 Stem: type of hairiness -
- 75 Fruit: type of hairiness –





downy



hirsute





velutinous



bristly



tomentose



hispid

- **18** Stem: size of bud support (bud support height in relation to stem diameter)
- 19 Stem: slope on bud support distal face -
- 23 Stem: leaf scar -



- 21 Stem: presence of bud cover
- 22 Stem: size of opening of bud cover









medium



bud cover present large

Leaf blade: general shape -26





lanceolate





broad obovate

broad ovate



very broad obovate

Leaf blade: shape of apex -27



28 Leaf blade: arrangement of basal lobes -

far apart

slightly apart

touching

slightly overlapping

strongly overlapping

43 Flower: Arrangement of petals (from beneath)-

apart

touching

overlapping

64 Fruit: general shape -

ellipsoid

obovoid

oblong

ovoid

obloid

absent of very weakly expressed

 \bigcirc

calyx ring

- 81 Fruit: outer pericarp colour at maturity for consumption 82 Fruit: inner pericarp colour at maturity for consumption
- 83 Fruit: core diameter relative to fruit diameter
- 86 Fruit: core colour at maturity for consumption

68

87 Fruit: sweetness at maturity for consumption

The soluble solids content (SSC) is measured by cutting a 15 mm slice from the stem and stylar ends of the dry fruit and an equal number of drops from each cut slice are squeezed on to the refractomer prism surface. Distilled water should be used to zero the refractometer and a 6% (w/w) sucrose solution used for calibration. Measurements are ideally carried out at 20° C.

88 Fruit: acidity at maturity for consumption

Titratable acids are determined by titration against standard sodium hydroxide of an homogenate of a known weight of kiwifruit tissue (a sector of the fruit) in a known volume of deionised water and expressed in terms of citric acid.

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