

**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**  
Geneva

**TECHNICAL WORKING PARTY FOR FRUIT CROPS**

**Forty-Third Session**

**Beijing, July 30 to August 3, 2012**

**PARTIAL REVISION OF THE TEST GUIDELINES FOR PEACH**  
(DOCUMENT TG/53/7)

*Document prepared by experts from France*

It is proposed that the Test Guidelines for Peach (document TG/53/7) be amended as follows:

Chapter 1 "Subject of these Test Guidelines"

*Current wording:*

These Test Guidelines apply to all varieties of peach (including nectarine) of the species *Prunus persica* (L.) Batsch. For the examination of hybrids involving *Prunus persica* (L.) Batsch, guidance is provided in document TGP/13 "Guidance for New Types and Species".

*Proposed new wording:*

These Test Guidelines apply especially to fruit varieties and to all varieties of peach (including nectarine) of the species *Prunus persica* (L.) Batsch. For the examination of hybrids involving *Prunus persica* (L.) Batsch, guidance is provided in document TGP/13 "Guidance for New Types and Species".

Chapter 2.3

*Current wording:*

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

5 grafted trees.

*Proposed new wording:*

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

3 grafted trees.

Chapter 3.4.1

*Current wording:*

Each test should be designed to result in a total of at least 5 trees.

*Proposed new wording:*

Each test should be designed to result in a total of at least 3 trees.

Chapter 3.5 "Number of Plants / Parts of Plants to be Examined"

*Current wording:*

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

*Proposed new wording:*

Unless otherwise indicated, all observations should be made on 3 plants or parts taken from each of 3 plants. In the case of parts of plants, the number to be taken from each of the plants should be 5 at least.

Chapter 4.2.2

*Current wording:*

For the assessment of uniformity, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 5 plants, no off-types are allowed.

*Proposed new wording:*

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 3 plants, no off-types are allowed.

Chapter 5.3 "Grouping Characteristics"

- (a) Tree: size (characteristic 1)
- (b) Flowering shoot: presence of anthocyanin coloration (characteristic 6)
- (c) Flower: type (characteristic 9)
- (d) Anthers: pollen (characteristic 17)
- (e) Ovary: pubescence (characteristic 18)
- (f) Leaf blade: red mid-vein on the lower side (characteristic 28)
- (g) Petiole: nectaries (characteristic 30)
- (h) Petiole: shape of nectaries (characteristic 31)
- (i) Fruit: shape (in ventral view) (characteristic 33)
- (j) Fruit: pubescence of skin (characteristic 44)
- (k) Fruit: carotenoid coloration of flesh (characteristic 51)
- (l) Fruit: acidity (characteristic 57) with the following groups:
  - low
  - medium
  - high
- (m) Fruit: flesh type (TQ characteristic), with the following groups:
  - melting
  - non-melting (pavies)
  - stony hard
- (n) Stone: adherence to flesh (characteristic 64)
- (o) Time of beginning of flowering (characteristic 67)
- (p) Time of maturity for consumption (characteristic 68)

Chapter 7 "Table of Characteristics"

Amendments to characteristics for example varieties only:

Char. 1	state 1	to add "Bonfire, Pix Zee, Zaino"
Char. 5	state 1	to add "Bonfire, Pix Zee, Zaino"
Char. 21	state 7	to delete "Dixinel", to add "Dixired"
Char. 25	state 3	to delete "Merrill Fransiscan", to add "Merrill Franciscan"
Char. 34	state 9	to delete "Jersey Land", to add "Jerseyland"
Char. 36	state 2	to delete "Brittaney Lane", to add "Brittney Lane"
	state 3	to delete "Precoccissima Morettini", to add "Precocissima Morettini"
Char. 40	state 2	to delete "Rubberima", to add "Ruberrina"
Char. 41	state 1	to add "Ghiaccio 1, Zholtz"
Char. 43	state 1	to delete "Flavorcrest", to add "Zaitabo"
	state 2	to delete "Merill Sundance", to add "Merrill Sundance"
Char. 47	state 3	to delete "Royal gem", to add "Royal Gem"
Char. 50	all states	to delete existing example varieties, new example varieties to be provided
Char. 51	state 6	to delete "Merill Franciscan", to add "Merrill Franciscan"
Char. 56	state 1	to delete "Merryl Gemfree", to add "Merrill Gemfree"
Char. 57	state 1	to delete "Aubre, Kevine, Nacre, Opale, Zaiboni", to add " Monna, Zaibomi, Zaidaso"
	state 2	to delete "Felicia, Monprime", to add "Zaifave, Zaitabo"
	state 3	to delete "O'Henry, Ryan Sun, Zaitabo", to add "Mercil, Monprime, Ryans Sun"
	state 4	to delete "Hermione, Primerose", to add " Kraprim, Zailice"

Characteristic 3 “Tree: habit”

Current wording:

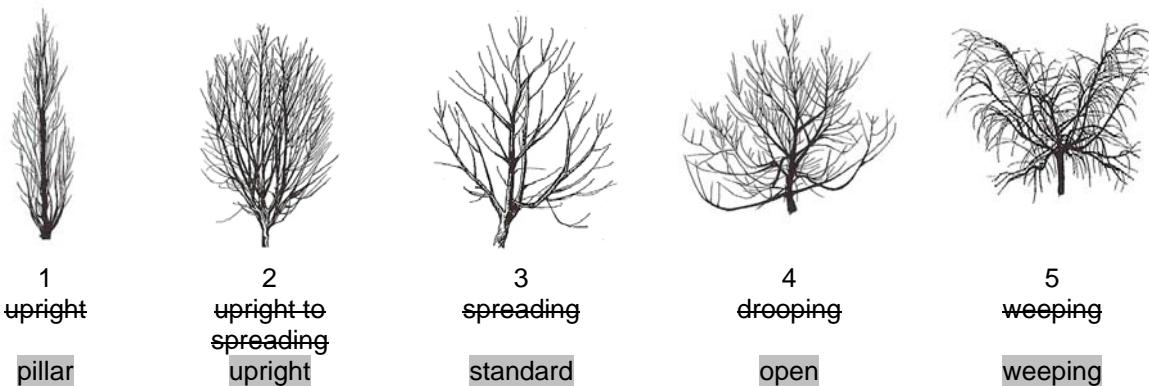
3. (*) (+)	Tree: habit	Arbre : port	Baum: Wuchsform	Árbol: porte		
QN (a)	upright	dressé	aufrecht	erecto	Nectarose, Pillar	1
	upright to spreading	dressé à étalé	aufrecht bis breitwüchsig	erecto hacia extendido	Fairhaven, Redwing	2
	spreading	étalé	breitwüchsig	extendido	Albertina, Elegant Lady, O’Henry	3
	drooping	retombant	überhängend	colgante	Charles Roux	4
	weeping	très retombant	lang überhängend	llorón	Biancopendulo	5

Proposed new wording:

3. (*) (+)	Tree: habit	Arbre : port	Baum: Wuchsform	Árbol: porte		
QN (a)	pillar	columnnaire	aufrecht	erecto	Nectarose, Pillar	1
	upright	dressé	aufrecht bis breitwüchsig	erecto hacia extendido	Fairhaven, Redwing	2
	standard	intermediaire	breitwüchsig	extendido	Albertina, Elegant Lady, Mercil	3
	open	ouvert	überhängend	colgante	Charles Roux	4
	weeping	retombant	lang überhängend	llorón	Biancopendulo	5

Ad. 3: Tree: habit

To be observed the year before the main pruning.



Characteristic 7 "Flowering shoot: intensity of anthocyanin coloration"

Current wording:

7. (+)	Flowering shoot: intensity of anthocyanin coloration	Rameau mixte : intensité de la pigmentation anthocyane	Blütentrieb: Intensität der Anthocyanfärbung	Rama floral: intensidad de la pigmentación antociánica		
QN	(d)	weak	faible	gering	débil	Springtime
		medium	moyenne	mittel	media	Fuzalode
		strong	forte	stark	fuerte	Robin, Sanguine Chanas

Proposed new wording:

7. (+)	Flowering shoot: intensity of anthocyanin coloration	Rameau mixte : intensité de la pigmentation anthocyane	Blütentrieb: Intensität der Anthocyanfärbung	Rama floral: intensidad de la pigmentación antociánica		
QN	(d)	very weak	très faible		Biancopendulo, De flor doble blanca,	1
		weak	faible	gering	Springtime	3
		medium	moyenne	mittel	Fuzalode	5
		strong	forte	stark	Robin, Sanguine Chanas	7

Characteristic 9 “Flower: type”

Current wording:

9. (*) (+)	Flower: type	Fleur : type	Blüte: Typ	Flor: tipo		
QL	(d) campanulate	campanulée	glockenförmig	acampanada	Dida, Springtime	1
	(e) rosette	rosacée	rosettenförmig	roseta	Robin, Vesuvio	2

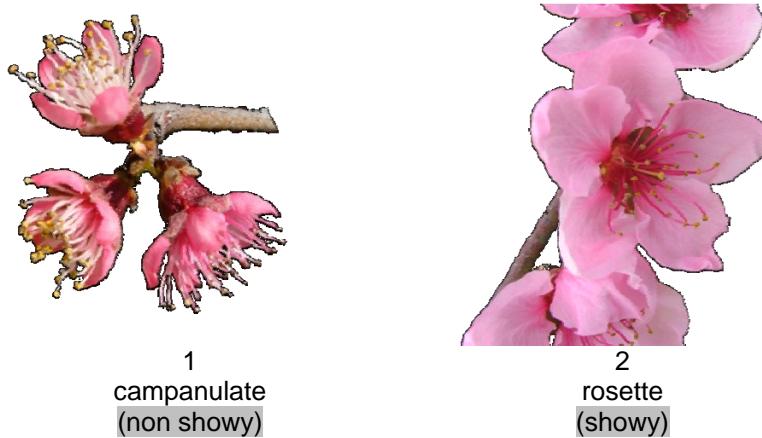
Proposed new wording:

9. (*) (+)	Flower: type	Fleur : type	Blüte: Typ	Flor: tipo		
QL	(d) campanulate (non showy)	campanulée	glockenförmig	acampanada	Dida, Springtime	1
	(e) rosette (showy)	rosacée	rosettenförmig	roseta	Robin, Vesuvio	2

Ad. 9: Flower: type

‘Campanulate’ (bell-shaped) is also referred to as ‘non showy’: these types have small petals and stamens often higher than the petals.

‘Rosette’ (rose-shaped) is also referred to as ‘showy’: these types have large petals.



Characteristic 15 "Stamen: position compared to petals"

Current wording:

15. (+)	Stamen: position compared to petals	Étamines : position par rapport aux pétales	Staubgefäß: Stellung im Verhältnis zu den Blütenblättern	Estambre: posición relativa a los pétalos		
QN	(d) below	au-dessous	unterhalb	por debajo	Loring	1
	(e) at same level	au même niveau	auf gleicher Höhe	en el mismo nivel	Robin, Springtime	2
	above	au-dessus	oberhalb	por encima	Redhaven	3

Proposed new wording:

15. (+)	Stamen: position compared to petals	Étamines : position par rapport aux pétales	Staubgefäß: Stellung im Verhältnis zu den Blütenblättern	Estambre: posición relativa a los pétalos		
QN	(d) below	au-dessous	unterhalb	por debajo	Loring	1
	(e) <u>same level</u>	au même niveau	auf gleicher Höhe	en el mismo nivel	Robin, Springtime	2
	above	au-dessus	oberhalb	por encima	Redhaven	3

Ad. 15: Stamen: position compared to petals



1  
below  
below

2  
at same level  
**same level**

3  
above  
above

Characteristic 35 "Fruit: shape of pistil end (excluding mucron tip)"

Current wording:

35. (+)	Fruit: shape of pistil end (excluding mucron tip)	Fruit : forme de l'extrémité pistillaire (mucron non compris)	Frucht: Form des Kelchendes (außer aufgesetzte Spitze)	Fruto: forma del extremo del pistilo (la punta del mucrón excluida)		
	prominently pointed	nettement pointue	deutlich zugespitzt	destacadamente puntiagudo	Jersey Land	1
	weakly pointed	faiblement pointue	schwach zugespitzt	débilmente puntiagudo	Springtime	2
	flat	plate	flach	plano	Redhaven	3
	weakly depressed	faiblement déprimée	schwach eingesenkt	débilmente hundido	Robin	4
	strongly depressed	fortement déprimée	stark eingesenkt	muy hundido	Bailou, UFO3	5

Proposed new wording:

35. (+)	Fruit: shape of pistil end (excluding mucron tip)	Fruit : forme de l'extrémité pistillaire (mucron exclu)	Frucht: Form des Kelchendes (außer aufgesetzte Spitze)	Fruto: forma del extremo del pistilo (la punta del mucrón excluida)		
	prominently pointed	nettement pointue	deutlich zugespitzt	destacadamente puntiagudo	Jerseyland	1
	weakly pointed	faiblement pointue	schwach zugespitzt	débilmente puntiagudo	Springtime	2
	flat	plate	flach	plano	Redhaven	3
	weakly depressed	faiblement déprimée	schwach eingesenkt	débilmente hundido	Robin	4
	strongly depressed	fortement déprimée	stark eingesenkt	muy hundido	Bailou, UFO3	5

Characteristic 52 "Fruit: anthocyanin coloration of flesh next to skin"

Characteristic 52 to be split into two characteristics.

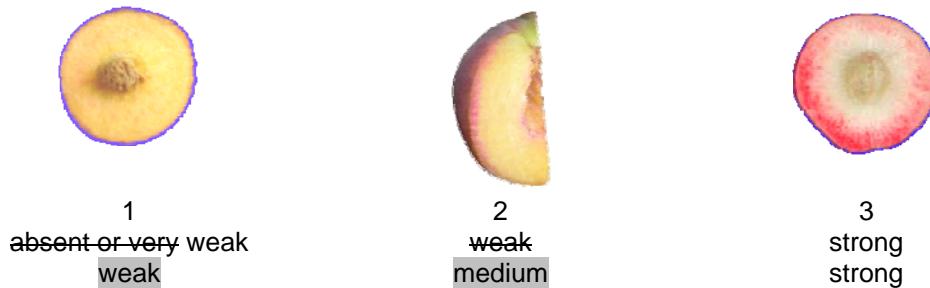
Current wording:

52. (*) (+)	Fruit: anthocyanin coloration of flesh next to skin	Fruit : pigmentation anthocyanique sous- épidermique	Frucht: Anthocyanfärbung direkt unter der Haut	Fruto: pigmentación antociánica de la pulpa pegada a la piel		
QN (f)	absent or very weak  weak  strong	absente ou très faible  faible  forte	fehlend oder sehr gering  gering  stark	ausente o muy débil  débil  fuerte	Redhaven  Daisy, Dolores, Monco  Monalu, Monof, Rich May, Sanguine Chanas, Sanguine Vineuse, Zairegem	1  2  3

Proposed new wording:

52. (*) (+)	Fruit: anthocyanin coloration of flesh next to skin	Fruit : pigmentation anthocyanique sous- épidermique	Frucht: Anthocyanfärbung direkt unter der Haut	Fruto: pigmentación antociánica de la pulpa pegada a la piel		
QN (f)	absent  present				Springfire  Sanguine Vineuse	1  9
NEW (*) (+)	Fruit: anthocyanin coloration of flesh next to skin	Fruit : pigmentation anthocyanique sous- épidermique	Frucht: Anthocyanfärbung direkt unter der Haut	Fruto: pigmentación antociánica de la pulpa pegada a la piel		
QN (f)	weak  medium  strong	faible  moyenne  forte			To be provided  To be provided  Monalu, Monof, Rich May, Sanguine Chanas, Sanguine Vineuse, Zairegem	1  2  3

Ad. NEW: Fruit: anthocyanin coloration of flesh next to skin



Characteristic 53 "Fruit: anthocyanin coloration of flesh in central part of flesh"

Characteristic 53 to be split into two characteristics.

*Current wording:*

53. (*) (+)	Fruit: anthocyanin coloration of flesh in central part of flesh	Fruit : pigmentation anthocyane de la partie centrale de la chair	Frucht: Anthocyanfärbung des Fleisches im mittleren Teil des Fruchtfleisches	Fruto: pigmentación antociánica de la parte central de la pulpa		
QN	(f)	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Robin
		weak	faible	gering	débil	Dolores, Monco
		strong	forte	stark	fuerte	Monof, Zairegem

*Proposed new wording:*

53. (*) (+)	Fruit: anthocyanin coloration of flesh in central part of flesh	Fruit : pigmentation anthocyane de la partie centrale de la chair	Frucht: Anthocyanfärbung des Fleisches im mittleren Teil des Fruchtfleisches	Fruto: pigmentación antociánica de la parte central de la pulpa		
QN	(f)	absent			Springfire	1
		present			Monof	9
NEW (*) (+)	Fruit: anthocyanin coloration of flesh in central part of flesh	Fruit : pigmentation anthocyane de la partie centrale de la chair	Frucht: Anthocyanfärbung des Fleisches im mittleren Teil des Fruchtfleisches	Fruto: pigmentación antociánica de la parte central de la pulpa		
QN	(f)	weak			To be provided	1
		medium			To be provided	2
		strong			Monof, Zairegem	3

Ad. NEW: Fruit: anthocyanin coloration of flesh in central part of flesh



1  
absent or very weak  
weak



2  
weak  
medium



3  
strong  
strong

Characteristic 54 "Fruit: anthocyanin coloration of flesh around stone"

Characteristic 54 to be split into two characteristics.

*Current wording:*

54. (*) (+)	Fruit: anthocyanin coloration of flesh around stone	Fruit : pigmentation anthocyanique de la chair autour du noyau	Frucht: Anthocyanfärbung im Bereich des Steines	Fruto: pigmentación antociánica de la pulpa alrededor del hueso		
QN (f)	absent or weak  medium  strong	absente ou faible  moyenne  forte	fehlend oder gering  gering  stark	ausente o débil  media  fuerte	Springtime  Ryan Sun  Summer Lady, Zaipeo	1  2  3

*Proposed new wording:*

54. (*) (+)	Fruit: anthocyanin coloration of flesh around stone	Fruit : pigmentation anthocyanique de la chair autour du noyau	Frucht: Anthocyanfärbung im Bereich des Steines	Fruto: pigmentación antociánica de la pulpa alrededor del hueso		
QN (f)	absent  present				Springfire  Summer Lady	1  9
NEW. (*) (+)	Fruit: anthocyanin coloration of flesh around stone	Fruit : pigmentation anthocyanique de la chair autour du noyau	Frucht: Anthocyanfärbung im Bereich des Steines	Fruto: pigmentación antociánica de la pulpa alrededor del hueso		
QN (f)	weak  medium  strong				To be provided  To be provided  Summer Lady, Zaipeo	1  2  3

Ad. NEW: Fruit: anthocyanin coloration of flesh around stone



Characteristic 55 "Fruit: flesh fiber"

Current wording:

55.	Fruit: flesh fiber	Fruit : chair fibreuse	Frucht: Fleischfasern	Fruto: pulpa fibrosa		
QN	(f)	absent or weak	absente ou faible	fehlend oder schwach	ausente o débil	Redhaven 1
		moderate	modérée	mäßig	moderada	2
		strong	forte	stark	fuerte	Sunhigh 3

Proposed new wording:

55.	Fruit: flesh fiber	Fruit : chair fibreuse	Frucht: Fleischfasern	Fruto: pulpa fibrosa		
(+)						
QN	(f)	not fibrous	non fibreux		Redhaven	1
		fibrous	fibreux		Sunhigh	9

Ad. 55: Fruit: flesh fiber

The flesh fiber is evaluated by tasting, and the states are illustrated by this photo.



Characteristic 58 "Stone: size compared to fruit"

Current wording:

58. (*) (+)	Stone: size compared to fruit	Noyau : taille par rapport à celle du fruit	Stein: Größe im Verhältnis zur Frucht	Hueso: tamaño con respecto al fruto		
QN (g)	small	petit	klein	pequeño	Alex, Robin	3
	medium	moyen	mittel	mediano	Redhaven	5
	large	gros	groß	grande	Somervee	7

Proposed new wording:

58. (*) (+)	Stone: size in relation to fruit	Noyau : taille par rapport à celle du fruit	Stein: Größe im Verhältnis zur Frucht	Hueso: tamaño con respecto al fruto		
QN (g)	small	petit	klein	pequeño	Alex, Robin	3
	medium	moyen	mittel	mediano	Redhaven	5
	large	gros	groß	grande	Somervee	7

Characteristic 66 "Stone: size compared to fruit"

Current wording:

66. (+)	Time of beginning of leaf bud burst	Époque de début de débourrement foliaire	Zeitpunkt des Aufbrechens der vegetativen Knospe	Época de comienzo de la brotación de la yema foliar		
QN	very early	très précoce	sehr früh	muy temprana	Sunred	1
	early	précoce	früh	temprana	Springtime	3
	medium	moyenne	mittel	media	Redhaven	5
	late	tardive	spät	tardía	Genadix 7	7
	very late	très tardive	sehr spät	muy tardía	Philp	9

Proposed new wording:

66. (+)	Time of beginning of leaf bud burst	Époque de début de débourrement foliaire	Zeitpunkt des Aufbrechens der vegetativen Knospe	Época de comienzo de la brotación de la yema foliar		
QN	very early	très précoce	sehr früh	muy temprana	Sunred	1
	early	précoce	früh	temprana	Springtime	3
	medium	moyenne	mittel	media	Redhaven	5
	late	tardive	spät	tardía	Genadix 7	7
	very late	très tardive	sehr spät	muy tardía	Philp	9

Characteristic 68 "Time of maturity for consumption"

Current wording:

68. (*) (+)	Time of maturity for consumption	Époque de maturité pour la consommation	Zeitpunkt der Genussreife	Época de madurez para el consumo		
QN	very early	très précoce	sehr früh	muy temprana	Rich May, Springtime, Zaibaro	1
	very early to early	très précoce à précoce	sehr früh bis früh	de muy temprana a temprana	Zainoar, Zaitani	2
	early	précoce	früh	temprana	Antonia, Redwing, Rich Lady, Robin	3
	early to medium	précoce à moyenne	früh bis mittel	de temprana a media	Craucail, Diamond Princess	4
	medium	moyenne	mittel	media	Fairhaven, Fantasia, Summer Bright, Zee Lady	5
	medium to late	moyenne à tardive	mittel bis spät	de media a tardía	Maillarbig, Savana Red, Zaimor	6
	late	tardive	spät	tardía	Fairlane, Flacara, Veteran, Western red, Zailati, Zairova	7
	late to very late	tardive à très tardive	spät bis sehr spät	de tardía a muy tardía	Andgold, Tardibelle	8
	very late	très tardive	sehr spät	muy tardía	Firetime, Rubidoux	9

Proposed new wording:

68. (*) (+)	Time of maturity for consumption	Époque de maturité pour la consommation	Zeitpunkt der Genussreife	Época de madurez para el consumo		
QN	very early	très précoce	sehr früh	muy temprana	Rich May, Springtime, Zaibaro	1
	very early to early	très précoce à précoce	sehr früh bis früh	de muy temprana a temprana	Zainoar, Zaitani	2
	early	précoce	früh	temprana	Antonia, Redwing, Rich Lady, Robin	3
	early to medium	précoce à moyenne	früh bis mittel	de temprana a media	Craucail, Diamond Princess	4
	medium	moyenne	mittel	media	Fairhaven, Fantasia, Summer Bright, Zee Lady	5
	medium to late	moyenne à tardive	mittel bis spät	de media a tardía	Maillarbig, Savana Red, Zaimor	6
	late	tardive	spät	tardía	Fairlane, Flacara, Western Red, Veteran, Zailati, Zairova	7
	late to very late	tardive à très tardive	spät bis sehr spät	de tardía a muy tardía	Andgold, Tardibelle	8
	very late	très tardive	sehr spät	muy tardía	Firetime, Rubidoux	9
	ultra late	ultra tardive		ultra tardia	Calante, Jesca	10

Ad. 68: Time of maturity for consumption

*Current wording:*

The time of maturity for consumption is when the overall appearance, firmness and taste indicate that the fruit is ready for consumption.

*Proposed new wording:*

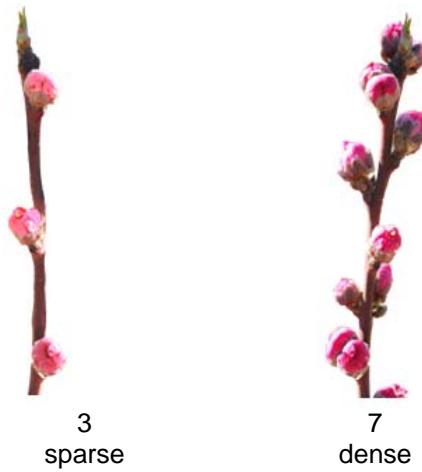
The time of maturity for consumption is evaluated with a penetrometer. After removing the skin of the fruit, the penetrometer is placed on the flesh in order to test the firmness of the fruit. The measurement is performed on about 15 representative fruits collected from different parts of the three trees. When firmness (pressure) is between 0.5 and 1kg/cm<sup>2</sup> the fruit is considered mature for consumption.

Chapter 8.2 "Explanations for individual characteristics"

Ad. 8 "Flowering shoot: density of flower buds"

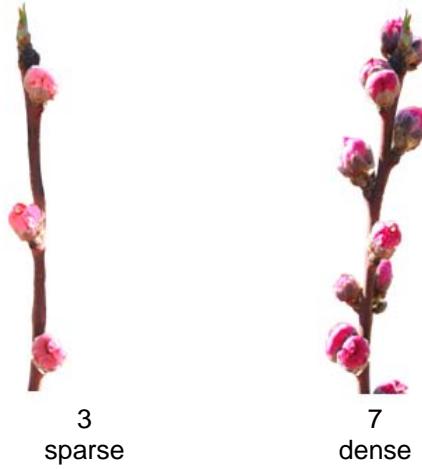
*Current wording:*

To be observed along the shoot on one meter.



*Proposed new wording:*

The density of flower buds is determined by counting the number of flower buds along one meter of shoot.



New Ad. 28 "Leaf blade: red mid-vein on the lower side"

April, May and September months are the most appropriate to observe this character in the North hemisphere. The red mid vein leaf blade characteristic is linked with the "blood flesh" character (bf gene). This early observation allows a first check, from the first budbreak of the plantation year.

Other types of bloody flesh peaches are known, among which some without red mid-rib. So, this character of the leaf blade (presence/absence of red mid-vein on the lower side) can allow to distinguish them.

Chapter 9 "Literature"

To add following literature references:

Chaparro J.X., Werner D.J., Whetten R.W. and D.M. O'Malley, 1995. Inheritance, genetic interaction and biochemical characterization of anthocyanin phenotypes in peach. *J. Hered.*, 86: 32-38.

Hu D. and R. Scorza, 2009: Analysis of the 'A72' peach tree Growth Habit and its inheritance in progeny obtained from crosses of 'A72' with columnar peach trees. *J. Amer. Sc. Hort. Sci.* 134(2):236-243.

Layne D.R. and D. Bassi, 2008. The peach : Botany, production and uses. Ed. By Desmond R. Layne and Daniele Bassi. ISBN 978 1 84593 386 9. CABI, 30 nov. 2008 - 615 pages.

Monet R., Bastard Y. en Gibault B., 1988. Etude génétique du caractère « port pleureur » chez le pêcher. *Agronomie*, 8(2) : 127-132.

Monet R. Guye A. and N. Dachary, 1996. Peach Mendelian genetics: a short review and new results. *Agronomie*, 16: 321-329.

Sajer O., Scorza R., Dardick C., Zhenbentyayeva T., 2012. Development of sequence-tagged site markers linked to the pillar growth type in peach (*Prunus persica*). Abbott A.G. and R. Horn, *Plant Breeding*, doi:10.1111/j.1439-0523.2011.01912.x

Scorza R., Lightner G.W. and A. Liverani, 1989. The pillar peach tree and growth habit analysis of compact x pillar progeny. *J. Am. Soc. Hortic. Sci.*, 114: 991-995.

Werner R.W. Creller M.A. and J.X. Chaparro, 2005. Inheritance of the blood-flesh trait in peach. *Hortscience*, 33(7): 1243-1246.

Werner R.W. and Chaparro J.X., 2005. Genetic interactions between pillar and weeping peach genotypes. *Hortscience* 40(1): 18-20.

Chapter 10 "Technical Questionnaire"

To delete the following characteristics from Chapter 5:

Fruit: flesh type (TQ characteristic), with the following groups:

- melting
- non-melting (~~pavies~~)
- ~~- stony hard~~

~~Stone: adherence to flesh (characteristic 64)~~

To add the following characteristics to Chapter 5:

Tree: size (characteristic 1)

Flowering shoot: presence of anthocyanin coloration (characteristic 6)

Anthers: pollen (characteristic 17)

Ovary: pubescence (characteristic 18)

Leaf blade: red mid-vein on the lower side (characteristic 28)

Petiole: nectaries (characteristic 30)

Fruit: shape (in ventral view) (characteristic 33)

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