

**TWF/32/6****ORIGINAL:** English**DATE:** July 10, 2001**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**

GENEVA

**TECHNICAL WORKING PARTY
FOR
FRUIT CROPS****Thirty-Second Session
Valencia, Spain, October 1 to 5, 2001****WORKING PAPER ON DRAFT TEST GUIDELINES FOR ANNONA CHERIMOLA
(*Annona Cherimola* Mill.)***Document prepared by experts from Japan and Mexico*

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
I. Subject of these Guidelines	3
II. Material Required	3
III. Conduct of Tests	3
IV. Methods and Observations.....	3
V. Grouping of Varieties	4
VI. Characteristics and Symbols	4
VII. Table of Characteristics	5
VIII. Explanations on the Table of Characteristics	14
IX. Literature	17
X. Technical Questionnaire	18

I. Subject of these Guidelines

These Test Guidelines have been prepared for all vegetatively propagated fruit varieties of *Annona Cherimola* Mill. 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:

five plants (one-year old grafts) on rootstocks of *Annona Cherimola*.

2. The plant material supplied should be visibly healthy, not lacking in vigor 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 a total of 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 determined by measurement, weighing or counting should be made on 5 plants or 10 typical parts, 2 from each of 5 plants.

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

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.
4. Unless otherwise stated, all observations on the flower should be made on fully developed flowers at full flowering (♂ stage).
5. Unless otherwise stated, all observations on the leaf should be made 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 (characteristic 17)
 - (b) Fruit: surface character (characteristic 21)
 - (c) Fruit: swelling on surface (characteristic 22)

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

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. Tree: vigor					
weak				Villapark, Big Sister	3
medium				Bay Ott, Honey Hart	5
strong				Mariella, White, Pierce	7
2. Shoot: color					
grayish green				Big Sister, Chaffey	1
gray				Bay Ott, Honey Hart	2
brown				African Pride, Feno de Jete	3
3. Leaf blade: shape (* (+)					
circular				Booth, Oakwood	1
obate				Pierce, Ott, Miguel	2
broad elliptic				Mariella, Big Sister	3
narrow elliptic				African Pride	4
4. Leaf blade: size					
small				African Pride, Libby	3
medium				Miguel, Ott, Spain	5
large				White, Chaffey	7
5. Leaf blade: color					
light green				Mariella, Chaffey	3
green				White, Ell Bumpo	5
dark green				Big Sister, Miguel	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6. Petiole: length					
short				Honey Hart	3
medium				Feno de Jete	5
long				Big Sister	7
7. Petiole: thickness					
thin				Libby, Villapark	3
medium				Big Sister	5
thick				Bays, Salmon	7
8. Leaf blade: marginal waving					
absent				African Pride	1
weak				Pierce	3
medium				White	5
strong				Big Sister	7
9. Petal: length					
short				Bays, White, Pink's Mommoth	3
medium				Ell Bumpo, Big Sister, Sabor	5
long				Libby, Villapark	7
10. Petal: width					
narrow				Honey Hart, White	3
medium				Pink's Mommoth, Campus, Miguel, Mariella	5
broad				Libby, Villapark	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. Petal: length/width					
small				to be added	3
medium				to be added	5
large				to be added	7
12. Petal: thickness					
thin				Bays, Feno de Jete, Campas	3
medium				Big Sister, Honey Hart	5
thick				Libby, Sabor	7
13. Peduncle: length					
short				Chaffey, Campas	3
medium				African Pride, Pink's Mommoth	5
long				Booth, Ell Bumpo	7
14. Petal: twisting at 2-3 days before anthesis					
small				White	3
medium				Big Sister	5
large				Villapark	7
15. Petal: curving before anthesis					
small				Booth, Pierce	3
medium				White	5
large				Chaffey	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. Ovary: shape					
broad cordate				Chaffey	1
cordate				Bays, Campas, Spain	2
narrow cordate				VillaPark, Pierce, Booth	3
17. Fruit: shape (*)					
(+) circular				Bay Ott, Chaffey	1
cordate				Bays, White, Pierce, Honey Hart	2
narrow conical				Ell Bumpo, Libby, Mariella, Villapark	3
broad conical				Booth, Campas, Fino de Jete, Ott, Miguel	4
narrow elliptic				Big Sister	5
18. Fruit: weight (*)					
light				Pierce, White, Bay Ott	3
medium				Fino de Jete, Ott, Sabor	5
heavy				Salmon, Big Sister, Mariella	7
19. Fruit: rind color (*)					
pale yellow green				Pierce	1
pale green				Big Sister, Libby, Bays	2
grayish green				Sabor, Miguel, Campas	3
20. Fruit: thickness of rind					
thin				Ell Bumpo	3
medium				Big Sister	5
thick				Bay Ott	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
21. Fruit: surface character					
(+)	mottled			Booth, Ott, Ell Bumpo	1
	scaly			Bay Ott, Spain, Big Sister	2
22. Fruit: swelling on surface					
(+)	absent			White, Honey Hart	1
	small			Big Sister, Mariella, Villapark, Libby	3
	medium			Ell Bumpo, Oakwood	5
	large			Sabor, Miguel	7
23. Fruit: color of flesh					
	white			Pierce	1
	cream			Villapark	2
24. Fruit: texture of flesh					
	soft			Ell Bumpo, Miguel	3
	medium			White	5
	firm			African Pride, Pink's Mommoth	7
25. Fruit: amount of fiber					
	few			Ell Bumpo, African Pride	3
	medium			Big Sister, Chaffey, Libby, Miguel	5
	many			White, Bay Ott, Honey Hart, Mariella	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26. Fruit: amount of stone cell					
few				Bay Ott, Honey Hart, Miguel, White	3
medium				Big Sister, Chaffey, Libby	5
many				Booth, Campas, Ott, Sabor	7
27. Fruit: amount of juice					
few				Chaffey, Pierce	3
medium				Bay Ott, Big Sister, Honey Hart	5
many				Booth, Ell Bumpo, Mariella, Oakwood	7
28. Fruit: sugar content					
low				Pierce	3
medium				Big Sister, Libby, Mariella, Otto, Pink's Mommoth,	5
high				White, Miguel, Sabor, Cumpas	7
29. Fruit: acid content					
low				Big Sister, Fino de Jete, Campas	3
medium				Booth, Miguel	5
high				Bays, Ell Bumpo	7
30. Fruit: aroma					
few				Big Sister, Pierce	3
medium				Bays, Bay Ott, Ell Bumpo	5
many				Booth, White, Honey Hart, Sabor	7

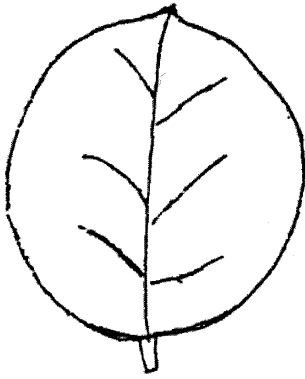
English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31. Seed: shape					
narrow				Sabor, Bays	3
medium				Salmon, Libby, White	5
broad				Booth, Mariella	7
32. Seed: size					
small				Campas, Ell Bumpo	3
medium				Pierce, Libby, Villapark	5
large				Miguel	7
33. Seed: glossiness					
absent				Big Sister, White	1
present				African Pride, Pink's Mommoth, Spain	9
34. Maturation period					
early				White, Ell Bumpo	3
medium				Pierce, Mariella, Chaffey	5
late				Big Sister, African Pride	7
35. Uniformity of the maturation period					
not uniform				to be added	1
slightly uniform				Big Sister	2
uniform				White	3
36. Flower production					
few				Ott	3
medium				White	5
many				Big Sister	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
37. Early fruit production					
early				Big Sister	3
medium				White	5
late				Ott	7
38. Fruit ripening speed (*)					
easy				Ell Bumpo	3
medium				Chaffey	5
difficult				Big Sister	7
39. Storability					
low				Ell Bumpo	3
medium				White	5
high				Big Sister	7
40. Resining on young fruit					
low				Ell Bumpo, White	3
medium				Big Sister, Mariella	5
high				Booth, Ott, Oakwood	7
41. Radial cracking					
absent				to be added	1
few				Big Sister, Ell Bumpo	3
medium				White, Bay Ott	5
many				Bays	7
42. Zigzag cracking					
absent				to be added	1
few				White	3
medium				Chaffey	5
many				Big Sister	7

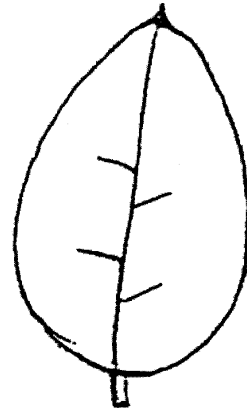
English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
43. Physiological fruit drop					
few				White	3
medium				Pierce	5
many				Sabor	7
44. Cold hardiness of tree					
weak				African Pride, Pink's Mommoth	3
medium				Big Sister	5
strong				White	7
45. Heat hardiness of tree					
weak				Big Sister	3
medium				White	5
strong				African Pride, Pink's Mommoth	7
46. Anthracnose resistance					
weak				Pierce	3
medium				Big Sister	5
strong				White	7
47. Mites infestance resistance					
weak				Mariella	3
medium				White	5
strong				Chaffey	7

VIII. Explanations on the Table of Characteristics

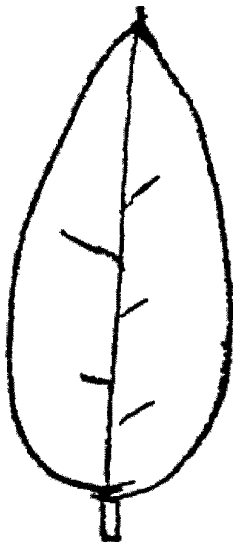
Ad. 3: Leaf blade: shape



1
circular



2
oblate

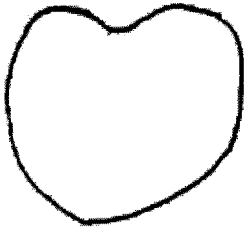


3
broad elliptic

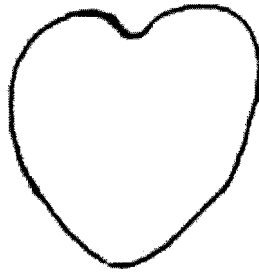


4
narrow elliptic

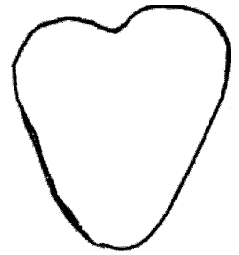
Ad. 17: Fruit: shape



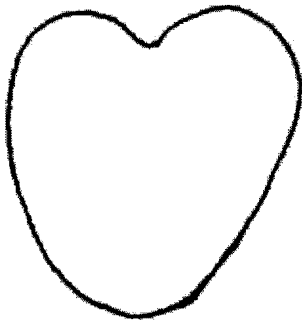
1
circular



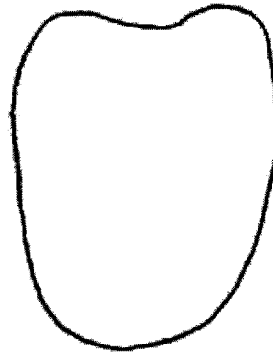
2
cordate



3
narrow conical

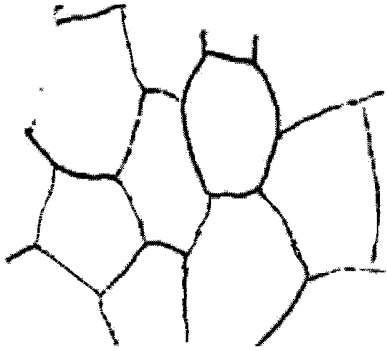


4
broad conical

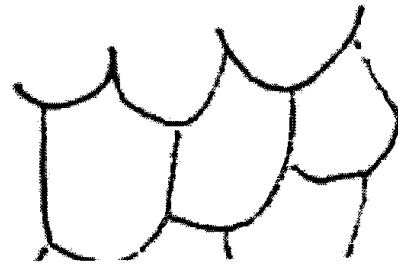


5
narrow elliptic

Ad. 21. Fruit: surface character

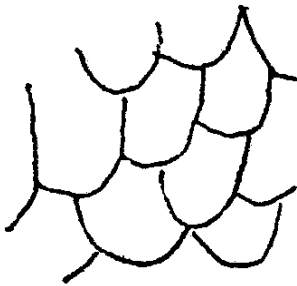


1
mottled

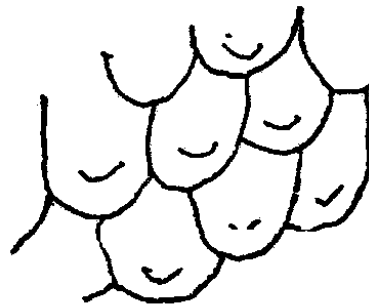


2
scaly

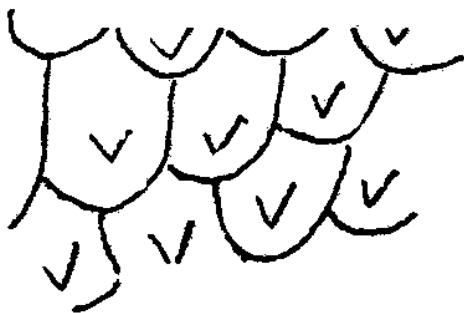
Ad. 22: Fruit: swelling on surface



1
absent



3
small



5
medium



7
large

IX. Literature

Japanese National Test Guidelines for Cherimoya (2000).

Yamashita, S., (1995) Fruit of fascination - Cherimoya, Agriculture & Horticulture, Vol. 70, No. 11, pp.57-64.

Introductory fruit tree variety characteristic investigation enterprise report (1994), Japan Fruit Tree Seedling and Clonial Association.

to be added

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>Annona Cherimola</i> Mill. ANNONA CHERIMOLA	
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 (indicate parent)		[]
.....		
– Pollen parent (indicate parent)		[]
.....		

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

.....

(d) Mutation or sport from (indicate original 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

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

.....

(b) The plant material is 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	Note
5.1 Fruit: shape (17)		
circular	Bay Otto, Chaffey	1[]
cordate	Bays, White, Pierce, Honey Hart	2[]
narrow conical	Ell Bumpo, Libby, Mariella, Villapark	3[]
broad conical	Booth, Campas, Fino de Jete, Ott, Miguel	4[]
narrow elliptic	Big Sister	5[]
5.2 Fruit: surface character (21)		
mottled	Booth, Otto, Ell Bumpo	1[]
scaly	Bay Otto, Spain, Big Sister	2[]
5.3 Fruit: swelling on surface (22)		
absent	White, Honey Hart	1[]
small	Big Sister, Mariella, Villapark, Libby	3[]
medium	Ell Bumpo, Oakwood	5[]
large	Sabor, Miguel	7[]

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 included in 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.

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