



**TWF/32/17**

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

**TECHNICAL WORKING PARTY  
FOR  
FRUIT CROPS**

**Thirty-Second Session  
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WORKING PAPER ON REVISED TEST GUIDELINES FOR QUINCE  
(*Cydonia Mill. sensu stricto*)

*Document prepared by experts from Germany*

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I. Subject of these Guidelines

1. These Test Guidelines apply to all vegetatively propagated varieties for fruit production of *Cydonia* Mill. sensu stricto.

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 customs formalities are complied with. As a minimum, the following quantity of plant material is recommended:

5 two-years old grafted plants.

It is recommended that one of the following rootstock varieties should be used: quince 'East Malling A' or 'BA 29' or any other rootstock specified by the competent authorities.

2. The plant material supplied should be visibly healthy, not lacking in vigor or affected by any important pests or *diseases and should especially be free from viruses as required by the competent authorities*. 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 or counting should be made on 5 plants or 10 parts, 2 from each of 5 plants. All observations on the fruit should be made on 10 typical fruits, 2 from each plant.
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 plant and on the one-year old shoot should be made during winter on plants that have fruited at least once. The length of the internodes should be observed in the middle of the shoot.
4. 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.
5. Unless otherwise stated, all observations on the flower should be made on fully developed flowers at the beginning of anther dehiscence.
6. All observations on the fruit should be made on fruits at maturity for consumption.

#### 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) Plant: habit (characteristic 2)
  - (b) Leaf blade: shape (characteristic 12)
  - (c) Fruit: general shape (in longitudinal section) (characteristic 27)

#### 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
<b>1. Plant: vigor</b> (* )		<b>Pflanze: Wuchsstärke</b>			
weak		gering		Gutui de Husui, Pear Shape	3
medium		mittel		Ekmek Ayvasi, Hemus	5
strong		stark		Otličnica, Sekergeurek	7
<b>2. Plant: habit</b> (* )		<b>Pflanze: Wuchsform</b>			
upright		aufrecht		Vranja	1
semi-upright		halbaufrecht		Champion	2
spreading		breitwüchsig		Bourgeault	3
<b>3. One-year old shoot: growth</b>		<b>Einjähriger Trieb: Wuchs</b>			
straight		gerade		Selena	3
wavy		gewellt		Vranja	5
zig-zag		zickzackförmig		Hov. No. 2	7
<b>4. One-year old shoot: length of internode</b> (* )		<b>Einjähriger Trieb: Länge des Internodiums</b>			
short		kurz		Bencikli	3
medium		mittel		Bourgeault	5
long		lang		Matador	7
<b>5. One-year old shoot: intensity of pubescence (upper third)</b> (* )		<b>Einjähriger Trieb: Stärke der Behaarung (oberes Drittel)</b>			
weak		gering		Ronda	3
medium		mittel		Bereczki	5
strong		stark		Champion	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>6. One-year old shoot: (* color</b>		<b>Einjähriger Trieb: Farbe</b>			
grey brown		graubraun			1
greenish brown		grünlichbraun		Selena	2
reddish brown		rötlichbraun		Cydopom	3
medium brown		mittelbraun		Ronda	4
dark brown		dunkelbraun		Shams	5
<b>7. One-year old shoot: size of lenticels</b>		<b>Einjähriger Trieb: Grösse der Lentizellen</b>			
small		klein		Champion	3
medium		mittel		Bereczki	5
large		groß		Cydopom	7
<b>8. Shoot: position of (+) vegetative bud in relation to shoot</b>		<b>Trieb: Stellung der vegetativen Knospe im Verhältnis zum Trieb</b>			
adpressed		anliegend		Vranja	1
slightly held out		leicht abstehend		Krymska	2
markedly held out		deutlich abstehend			3
<b>9. Leaf blade: attitude (* in relation to shoot (new)</b>		<b>Blattspreite: Haltung im Verhältnis zum Trieb</b>			
upwards		aufwärtsgerichtet		Pinter	1
outwards		abstehend		Lescowacz	2
downwards		abwärtsgerichtet		Hruskovita	3
<b>10. Leaf blade: length (*</b>		<b>Blattspreite: Länge</b>			
[No. 10a in TG/100/3] small		klein		Pinter	3
medium		mittel		Ronda	5
large		groß		Matador	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>11. Leaf blade: width</b> (* (*)		<b>Blattspreite: Breite</b>			
(new) narrow		schmal		Pinter	3
medium		mittel		Otličnica	5
broad		breit		Isfahan	7
<b>12. Leaf blade: shape</b> (* (+)		<b>Blattspreite: Form</b>			
[11.] elliptic		elliptisch		Della Cina	1
circular		rund		Mollesca	2
ovate		eiförmig		Fabre	3
obovate		verkehrt eiförmig		Tavsambas	4
<b>13. Leaf blade: shape of base</b> (+)		<b>Blattspreite: Form der Basis</b>			
[12.] cuneate		keilförmig		Bereczki	1
rounded		abgerundet		Guzuk Gobek	2
truncate		gerade		Alesa	3
cordate		herzförmig		Kocurova	4
<b>14. Leaf blade: angle at apex (changed)</b> (* (+)		<b>Blattspreite: Winkel an der Spitze (verändert)</b>			
[13.] acute		spitz		Shams	1
approximately right-angled		annähernd rechtwinklig		Portugal	2
obtuse		stumpf		Di Bazine	3
<b>(GB): In order to be more precise – to qualify with "excluding tip" or "including tip".</b>					



English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>15. Leaf blade: length of pointed tip</b> (* (+)		<b>Blattspreite: Länge der aufgesetzten Spitze</b>			
[14.] short		kurz		Jurak, Triumph	3
medium		mittel		Hemus	5
long		lang		Otličnica	7
<b>16. Leaf blade: profile in cross section</b>		<b>Blattspreite: Profil im Querschnitt</b>			
[17.] concave		konkav		Vranja	1
flat		flach		Guzuk Gobek	2
<b>17. Leaf blade: undulation of margin</b> [18.]		<b>Blattspreite: Wellung des Randes</b>			
absent or very slight		fehlend oder sehr gering		Muskatnaja	1
slight		gering		Champion	3
medium		mittel		Bereczki	5
strong		stark		Ekmek Ayvasi	7
very strong		sehr stark			9
<b>18. Petiole: length</b>		<b>Blattstiel: Länge</b>			
short		kurz		Portugal	3
[20.] medium		mittel		Bourgeault	5
long		lang		Champion	7
<b>19. Stipule: size</b>		<b>Nebenblatt: Größe</b>			
[21.] absent or very small		fehlend oder sehr klein		Bereczki, Otličnica	1
small		klein		Adamsova	3
medium		mittel		Pear Shapes	5
large		groß		Vranja	7
very large		sehr groß		Buchlowice, Maliforme Aurii	9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>20. Flower: size (* (*)</b>		<b>Blüte: Größe</b>			
[22.] small		klein		Della Cina	3
medium		mittel		Champion	5
large		groß		Turuncuskaja	7
<b>21. Flower: color</b>		<b>Blüte: Farbe</b>			
[23.] white		weiß		De Angera	1
pink		rosa		Vranja	2
<b>22. Flower: relative position of margins of petals (changed)</b>		<b>Blüte: relative Stellung der Ränder der Blütenblätter (verändert)</b>			
apart		freistehend		Della Cina	3
touching		einander berührend		Hemus	5
overlapping		überlappend		Vranja	7
<b>23. Petal: shape (* (*) (+)</b>		<b>Blütenblatt: Form</b>			
elliptic		elliptisch		Patrasso	1
circular		rund		Smyre	2
approximately square		annähernd quadratisch		Portugal	3
oblong		rechteckig		Tekes	4
<b>(DE): To add a new characteristic: Petal: undulation of margin – 3-weak [example variety 'Constantinopel'], 5-medium ['Turkey No. 4'], 7-strong ['Sofranii'].</b>					
<b>24. Stigma: position compared to anthers</b>		<b>Narbe: Stellung im Verhältnis zu den Antheren</b>			
[26.] above		oberhalb		Constantinopel	3
same level		auf gleicher Höhe		Maliforme	5
below		unterhalb		Ekmek	7
<b>(GB): To change the order – below (3) – same level (5) – above (7).</b>					

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>25. Calyx: pubescence (*) at base of stamens</b>		<b>Kelch: Behaarung an der Basis der Staubfäden</b>			
[27.] weak		gering		Della Cina	3
medium		mittel		Sekor Gevrek	5
strong		stark		Constantinopel	7
<b>(D): To delete this characteristic as it could hardly be seen without magnifying glasses.</b>					
<b>26. Fruit: size (*)</b>		<b>Frucht: Größe</b>			
[28.] small		gering		Bourgeault	3
medium		mittel		Champion	5
large		groß		Vranja	7
<b>27. Fruit: general shape (*) (in longitudinal section) (changed) (+)</b>		<b>Frucht: allgemeine Form (im Längsschnitt) (verändert)</b>			
[29.] oblong		länglich		Della Cina	1
globose		kugelförmig		Maliforme Auri	2
ovate		eiförmig		Ispolinskaja	3
pyriform		birnenförmig		Hruskovita	4
rectangular		rechteckig		Bourgeault	5
<b>(GB): "Obovate" to replace state 3 ("ovate").</b>					
<b>28. Fruit: symmetry in (*) longitudinal section</b>		<b>Frucht: Symmetrie im Längsschnitt</b>			
<b>new asymmetric</b>		assymmetrisch		Radonia	1
<b>symmetric</b>		symmetrisch		Lescovacz	2
<b>29. Fruit: position of (*) maximum diameter</b>		<b>Frucht: Position des größten Durchmessers</b>			
in middle		in der Mitte		Ronda	1
towards calyx		zum Kelch hin		Vranja	2

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>30. Fruit: narrowing in proximal part</b> (* )		<b>Frucht: Verengung im proximalen Teil</b>			
absent		fehlend		Maliforme Aurii	1
present		vorhanden		Vranja	9
<b>(GB): In order to avoid misunderstandings – to read " Fruit: narrowing towards stalk end".</b>					
<b>31. Fruit: length of narrowing in proximal part</b> (* )		<b>Frucht: Länge der Verengung im proximalen Teil</b>			
short		kurz		Portugal	3
medium		mittel		Limon	5
long		lang		Hruskovita	7
<b>(GB): In order to avoid misunderstandings – to read " Fruit: length of narrowing towards stalk end".</b>					
<b>32. Fruit: type of narrowing in proximal part</b> (* ) (+ )		<b>Frucht: Typ der Verengung im proximalen Teil</b>			
gradual		langsam verengend		Champion	1
abrupt		abrupt verengend		Hruskovita	2
<b>(GB): In order to avoid misunderstandings – to read " Fruit: type of narrowing towards stalk end".</b>					
<b>33. Fruit: prominence of ribs in <u>proximal</u> part</b> (* )		<b>Frucht: Ausprägung der Rippen im <u>proximalen</u> Teil</b>			
weak		gering		Ronda	3
medium		mittel		Portugal	5
strong		stark		Constantinopel	7
<b>(GB): In order to avoid misunderstandings – to read " Fruit: prominence of ribs at stalk end".</b>					
<b>34. Fruit: prominence of ribs in <u>distal</u> part</b> (* )		<b>Frucht: Ausprägung der Rippen im <u>distalen</u> Teil</b>			
weak		gering		Ronda	3
medium		mittel		Champion	5
strong		stark		Bereczki	7

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>35. Fruit: stalk cavity (*)(changed)</b>		<b>Frucht: Stielgrube (verändert)</b>			
absent		fehlend		Champion	1
present		vorhanden		Tekes	9
<b>36. Fruit: size of stalk cavity (if present) (changed)</b>		<b>Frucht: Größe der Stielgrube (wenn vorhanden) (verändert)</b>			
small		klein		Patrasso	3
medium		mittel		Portugal	5
large		groß		Tekes	7
<b>37. Fruit: size of eye basin</b>		<b>Frucht: Größe der Kelchgrube</b>			
small		klein		Ronda	3
medium		mittel		Vranja	5
large		groß		Tekes	7
<b>38. Fruit: color</b>		<b>Frucht: Farbe</b>			
yellow green		gelbgrün		Ispolinskaja	1
yellow		gelb		Constantinopel	2
yellow orange		gelborange			3
<b>39. Time of leaf bud burst (*)(changed)</b>		<b>Zeitpunkt des Blattaustriebs</b>			
early		früh		Vranja	3
medium		mittel		Bereczki	5
late		spät		Champion	7
<b>40. Time of beginning of flowering (*)(changed)</b>		<b>Zeitpunkt des Blühbeginns (verändert)</b>			
early		früh		Turuncuskaja	3
medium		mittel		Vranja	5
late		spät		Champion	7

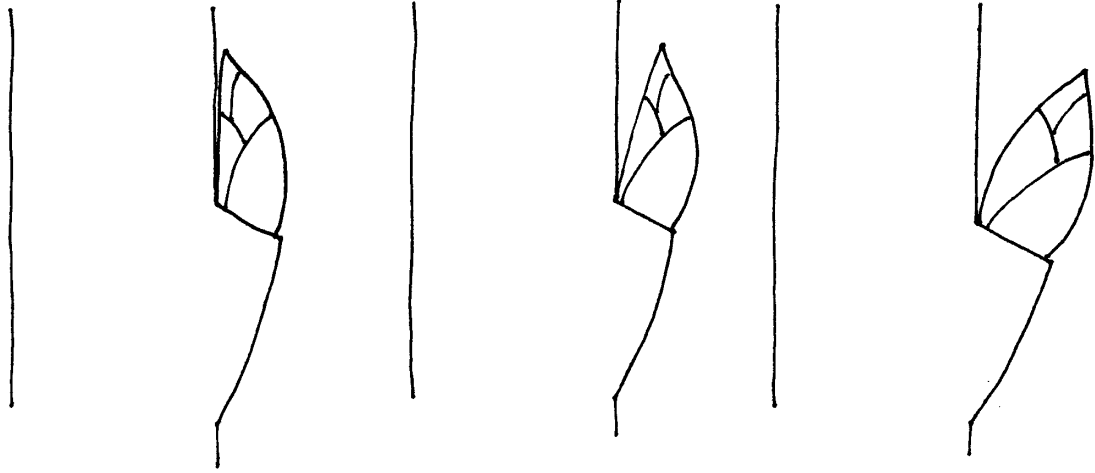
English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>41. Time of maturity for consumption (*)</b>		<b>Zeitpunkt der Essreife</b>			
early		früh		Radonia	3
medium		mittel		Hemus	5
late		spät		Ispolinskaja	7

**Comment (DE):** Even if the wording "Time of maturity for consumption" may be seen as an UPOV-standard, it should be taken into consideration that fruits of quinces are not freshly consumed as those of apple and pears, so the wording "Time of fruit ripening" as used earlier in this context might fit better.

**(GB):** Agreed.

VIII. Explanations on the Table of Characteristics

Ad. 8: Shoot: position of vegetative bud in relation to shoot

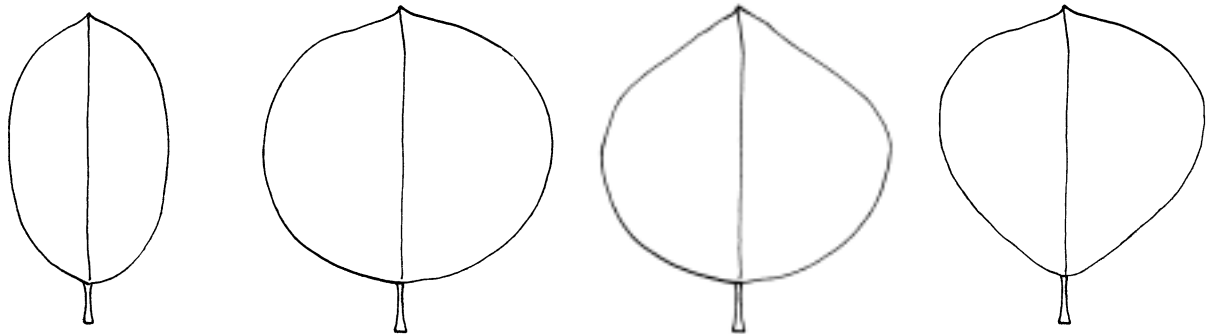


1  
adpressed

2  
slightly held out

3  
markedly held out

Ad. 12: Leaf blade: shape



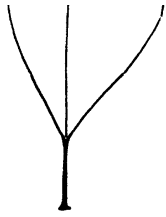
1  
elliptic

2  
circular

3  
ovate

4  
obovate

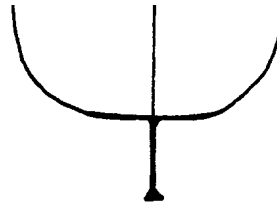
Ad. 13: Leaf blade: shape of base



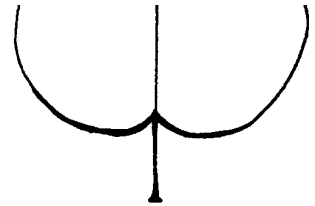
1  
cuneate



2  
rounded

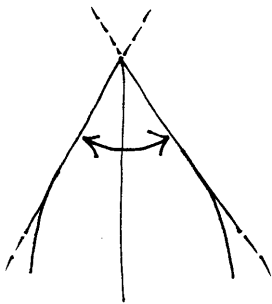


3  
truncate

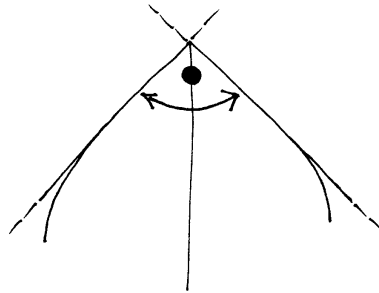


4  
cordate

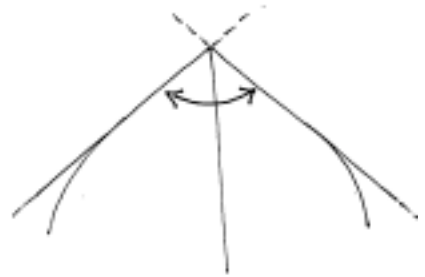
Ad. 14: Leaf blade: angle at apex



1  
acute



2  
approximately right-angled



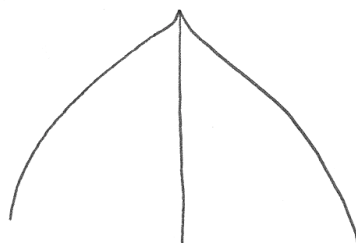
3  
obtuse



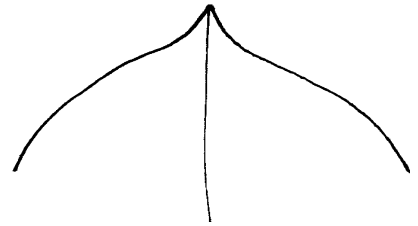
Ad. 15: Leaf blade: length of pointed tip



3  
short

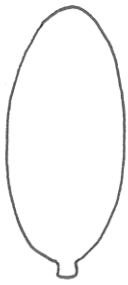


5  
medium

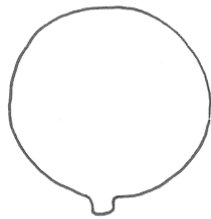


7  
long

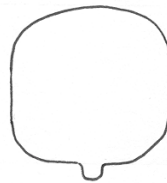
Ad. 23: Petal: shape



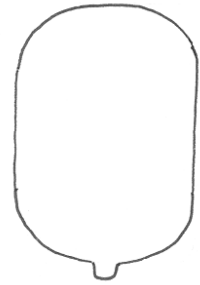
1  
elliptic



2  
circular

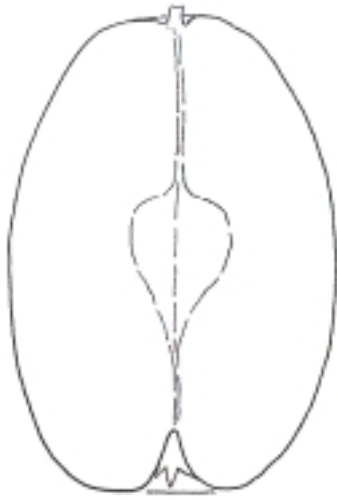


3  
approximately  
square

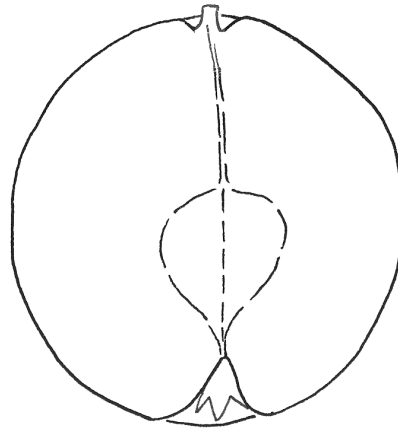


4  
oblong

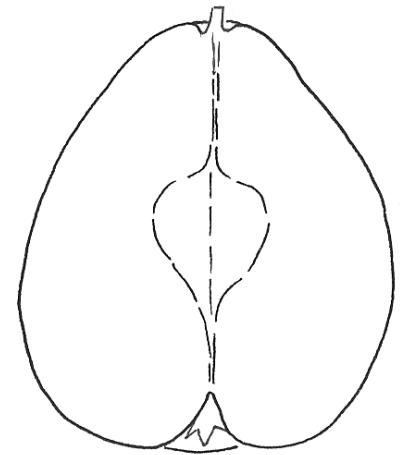
Ad. 27: Fruit: general shape (in longitudinal section)



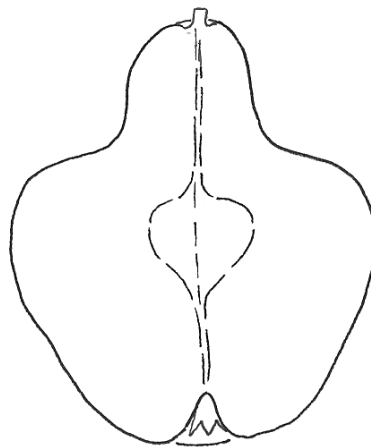
1  
oblong



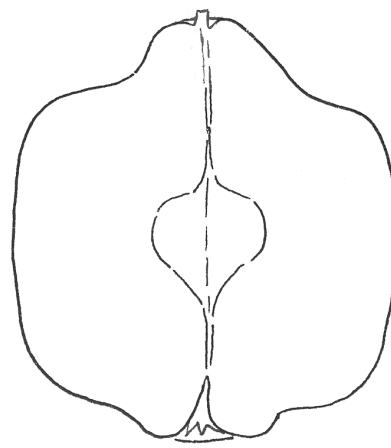
2  
globose



3  
ovate

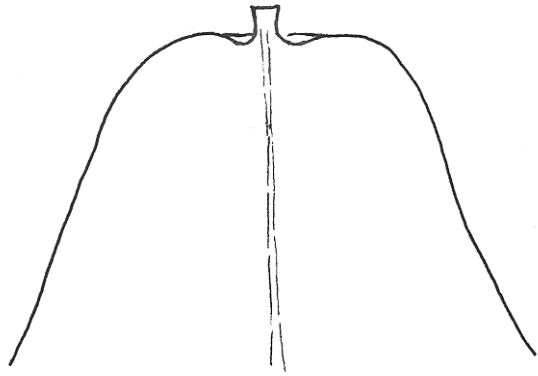


4  
pyriform

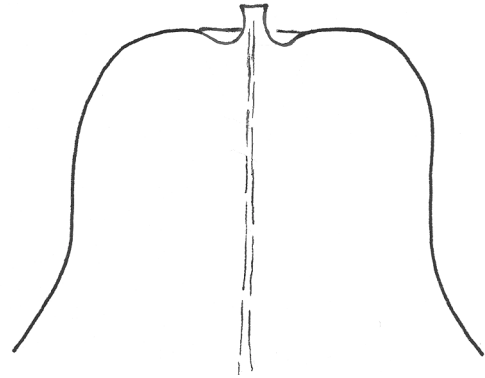


5  
rectangular

Ad. 32: Fruit: type of narrowing in proximal part



1  
gradual



2  
abrupt

IX. Literature

Alibert, J.-P., Masseron, A., 1979: "Le cognassier à fruits", Ctifl-Documents No. 62, pp. 69-79.

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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 *Cydonia* Mill. sensu stricto  
QUINCE (fruit varieties only)

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 of the candidate variety has been obtained  
by *in vitro* propagation

yes

no

4.3 Other type of multiplication (seed, leaf cutting, hardwood cutting, layer)

4.4 Virus status:

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

.....

- (b) The plant material is virus tested  
(indicate against which virus) [ ]

.....

- (c) The virus status is unknown [ ]

4.5 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
<b>5.1 Plant: habit (2)</b>		
upright	Vranja	1[ ]
semi-upright	Champion	2[ ]
spreading	Bourgeault	3[ ]
<b>5.2 Leaf blade: shape (12)</b>		
elliptic	Della Cina	1[ ]
circular	Mollesca	2[ ]
ovate	Fabre	3[ ]
obovate	Tavsambas	4[ ]
<b>5.3 Fruit: general shape (in longitudinal section) (27)</b>		
oblong	Della Cina	1[ ]
globose	Maliforne Auri	2[ ]
ovate	Ispolinskaja	3[ ]
pyriform	Hruskovita	4[ ]
rectangular	Bourgeault	5[ ]

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different <sup>o)</sup>	State of expression of similar variety	State of expression of candidate variety

<sup>o)</sup> In the case of identical states of expressions of both varieties, please indicate the size of the difference.



