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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

PISTACHIO

UPOV Code(s): PISTA

Pistacia L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by experts from European Union
 to be considered by the
 Technical Working Party for Fruit Crops
 at its forty-seventh session, to be held in Angers, France,
 from 2016-11-14 to 2016-11-18*

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Pistacia</i> L.	Pistachio	Pistachier	Pistazie	Alfóncigo, Pistachero

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Pistacia* L. which are vegetatively propagated.

2. Material Required

- 2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.
- 2.2 The material is to be supplied in the form of plants on their own roots or plants on a clonal rootstock. The competent authorities should specify the form of material to be supplied and select the most appropriate rootstock.
- 2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:
- 5 plants on their own roots or,
5 plants on the clonal rootstock as specified by the authority.
- 2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.
- 2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 *Number of Growing Cycles*

- 3.1.1 The minimum duration of tests should normally be two independent growing cycles.
- 3.1.2 The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles.
- 3.1.3 For female and hermaphrodite varieties the minimum duration of tests should normally be two independent growing cycles.
For male varieties the minimum duration of tests is one observation cycle provided there is sufficient blossoming.
- 3.1.4 In particular, it is essential that the plants of female and hermaphrodite varieties produce a satisfactory crop of fruit in each of the two growing cycles.
- 3.1.5 For female varieties, the competent authorities should ensure that an appropriate male variety is available for adequate pollination.

3.2 *Testing Place*

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness".

3.3 *Conditions for Conducting the Examination*

- 3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.
- 3.3.2 In particular, it is essential that the plants of female and hermaphrodite varieties produce a satisfactory crop of fruit in each of the two growing cycles.
For female varieties, the competent authorities should ensure that an appropriate male variety is available for adequate pollination.

3.4 *Test Design*

- 3.4.1 Each test should be designed to result in a total of at least 5 plants.
- 3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 *Additional Tests*

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 *Distinctness*

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of plants or parts of plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 5 plants or parts of plants taken from each of 5 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of Characteristics (see document TGP/9 "Examining Distinctness", Section 4 "Observation of characteristics"):

MG: single measurement of a group of plants or parts of plants

MS: measurement of a number of individual plants or parts of plants

VG: visual assessment by a single observation of a group of plants or parts of plants

VS: visual assessment by observation of individual plants or parts of plants

Type of observation: visual (V) or measurement (M)

"Visual" observation (V) is an observation made on the basis of the expert's judgment. For the purposes of this document, "visual" observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.1.6 *comment of LE: the part "disregarding any off-type plants" should be deleted (it is obsolete for sample size of 5 plants).*

4.2 *Uniformity*

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 For the assessment of uniformity of vegetatively propagated varieties, 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.

4.3 *Stability*

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. Grouping of Varieties and Organization of the Growing Trial
- 5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.
- 5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.
- 5.3 The following have been agreed as useful grouping characteristics:
 - (a) Plant: sex (characteristic 1)
 - (b) Plant: growth habit (characteristic 4)
 - (c) Nut: shape in lateral view (characteristic 24)
 - (d) Kernel: color (characteristic 34)
 - (e) Time of beginning of leaf bud burst (characteristic 35)
 - (f) Time of beginning of flowering (characteristic 36)
 - (g) Time of maturity for harvest (characteristic 37)
- 5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 "Examining Distinctness".

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 *States of Expression and Corresponding Notes*

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

<i>State</i>	<i>Note</i>
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

<i>State</i>	<i>Note</i>
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 "Development of Test Guidelines".

6.3 *Types of Expression*

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 *Example Varieties*

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 Legend

	English			français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1	2	3	4	5	6	7		
	Name of characteristics in English			Nom du caractère en français	Name des Merkmals auf Deutsch	Nombre del carácter en español		
	states of expression			types d'expression	Ausprägungsstufen	tipos de expresión		

- 1 Characteristic number
- 2 (*) Asterisked characteristic – see Chapter 6.1.2
- 3 Type of expression
QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3
- 4 Method of observation (and type of plot, if applicable)
MG, MS, VG, VS – see Chapter 4.1.5
- 5 (+) See Explanations on the Table of Characteristics in Chapter 8.2
- 6 (a)-(e) See Explanations on the Table of Characteristics in Chapter 8.1
- 7 Not applicable

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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*)	QL VG					
	Plant: sex					
	female				Kerman	1
	male				Peters	2
	hermaphrodite					3
2. (*)	QN VG	(+)	(a)			
	Plant: vigor					
	weak					1
	medium					2
	strong					3
3. (*)	QN VG	(+)				
	Plant: density of canopy					
	sparse					1
	medium					2
	dense					3
4. (*)	PQ VG		(a)			
	Plant: growth habit					
	upright to spreading				Napolitana	1
	spreading				Inzolla	2
	drooping					3
5.	QN VG		(b)			
	One-year-old shoot: intensity of brown color					
	light					1
	medium					2
	dark					3

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	QN	VG	(c)				
	Young shoot: anthocyanin coloration of growing tip						
	absent or weak					Greco, Napolitana	1
	medium					Irak	2
	strong					Chico	3
7.	QN	VG	(c)				
	Leaf: intensity of green color						
	light					Napolitana	1
	medium						2
	dark					Chico	3
8.	QN	MG/VG	(+)	(c)			
	Leaf: length of petiole						
	short						1
	medium						2
	long						3
9.	QN	MS/VG	(+)	(c)			
	Terminal leaflet: length						
	short						3
	medium						5
	long						7
10.	QN	MS/VG	(+)	(c)			
	Terminal leaflet: width						
	narrow						3
	medium						5
	broad						7
11.	QN	MS/VG	(+)	(c)			
	Terminal leaflet: ratio length/width						
	moderately elongated						3
	intermediate						5
	moderately compressed						7

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.	PQ	VG	(+)	(c)				
	Terminal leaflet: shape of apex							
	acute							1
	rounded							2
	truncate							3
	obcordate							4
13. (*)	PQ	VG	(+)	(c)				
	Terminal leaflet: shape of base							
	acute							1
	rounded							2
	truncate							3
14.	QN	VG	(+)	(c)				
	Terminal leaflet: asymmetry at base							
	absent or weak							1
	medium							2
	strong							3
15.	PQ	VG		(d)				
	Female inflorescence: bud shape							
	ellipsoid							1
	globose							2
	ovoid							3
16.	PQ	VG		(d)				
	Female inflorescence: bud color							
	reddish brown							1
	light brown							2
	medium brown							3
	dark brown							4

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
17.	QN	VG	(+)	(e)				
	Hull: dehiscence							
	weak							1
	medium							2
	strong							3
18. (*)	QN	VG		(e)				
	Hull: prominence of tip							
	absent or weak							1
	medium							2
	strong							3
19.	PQ	VG		(e)				
	Hull: color							
	light cream							1
	yellow white							2
	orange white							3
	orange red							4
	red							5
	red purple							6
20.	QL	VG		(e)				
	Hull: color homogeneity							
	homogenous							1
	unhomogenous							2
21. (*)	QN	MS/VG		(e)				
	Nut: length							
	short							1
	medium							2
	long							3
22. (*)	QN	MS/VG		(e)				
	Nut: width in lateral view							
	narrow							1
	medium							2
	broad							3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23. (*)	QN MS/VG	(e)				
	Nut: width in ventral view					
	narrow					1
	medium					2
	broad					3
24. (*)	PQ VG	(e)				
	Nut: shape in lateral view					
	elliptic					1
	narrow elliptic					2
	truncate					3
25. (*)	PQ VG	(e)				
	Nut: shape of apex in lateral view					
	acute					1
	rounded					2
	truncate					3
26. (*)	QN MS/VG	(e)				
	Nut: length of tip					
	absent or short					1
	medium					2
	long					3
27.	QN VG	(e)				
	Nut: depression of shell near pedicel					
	absent or shallow					1
	medium					2
	deep					3
28.	QN VG	(e)				
	Nut: color of pedicel scar in relation to color of shell					
	lighter					1
	similar					2
	darker					3

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
29.	QL	VG	(e)				
	Nut: prominence of suture						
	absent						1
	present						9
30.	QL	VG	(e)				
	Nut: position of suture opening						
	dorsal side						1
	ventral side						2
	dorsal and ventral side						3
31.	QN	VG	(e)				
	Nut: width of suture opening						
	narrow						1
	medium						2
	broad						3
32.	QN	VG	(e)				
	Nut: shell staining						
	low						1
	medium						2
	high						3
33. (*)	QN	MG	(+)	(e)			
	Kernel: weight						
	light						1
	medium						2
	heavy						3
34.	PQ	VG	(e)				
	Kernel: color						
	yellowish						1
	yellowish green						2
	green						3
	purplish						4

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35.	QN	MG/VG	(+)				
	Time of beginning of leaf bud burst						
	very early						1
	early						2
	medium						3
	late						4
	very late						5
36.	QN	MG/VG	(+)				
	Time of beginning of flowering						
	very early						1
	early						2
	medium						3
	late						4
	very late						5
37.	QN	MG/VG	(+)				
	Time of maturity for harvest						
	very early						1
	early						2
	medium						3
	late						4
	very late						5

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

- (a) Plant: Observations on the plant should be made in the dormant season.
- (b) One-year-old shoot: Observations on the shoot should be made on the middle third of the one-year-old shoot in the dormant season.
- (c) Leaf: Observations on the leaf should be made on fully developed leaves from the middle third of vigorous current season shoots.
- (d) Female Inflorescence: Observations on the female inflorescence should be done on fully grown trees of fruiting female and hermaphrodite varieties.
- (e) Fruit: Observations on the fruit should be done on fully grown trees of fruiting female and hermaphrodite varieties. All observations of the fruit should be made on 10 typical fruits taken from a minimum sample of 20 fruits, at time of visual ripeness.

8.2 *Explanations for individual characteristics*

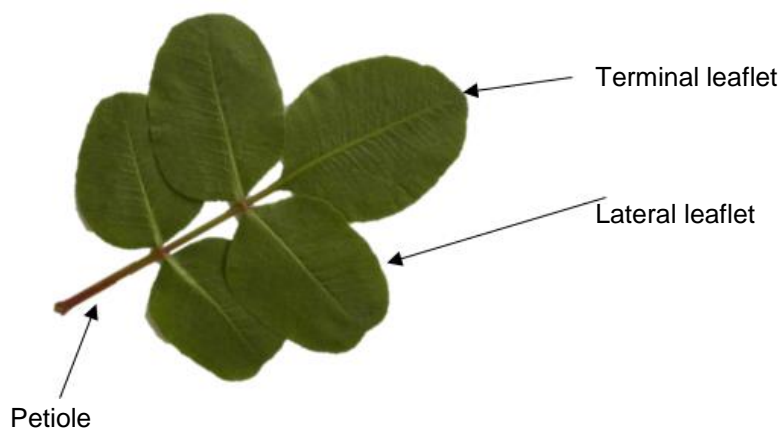
Ad. 2: Plant: vigor

The vigor of the plant should be considered as the overall abundance of vegetative growth.

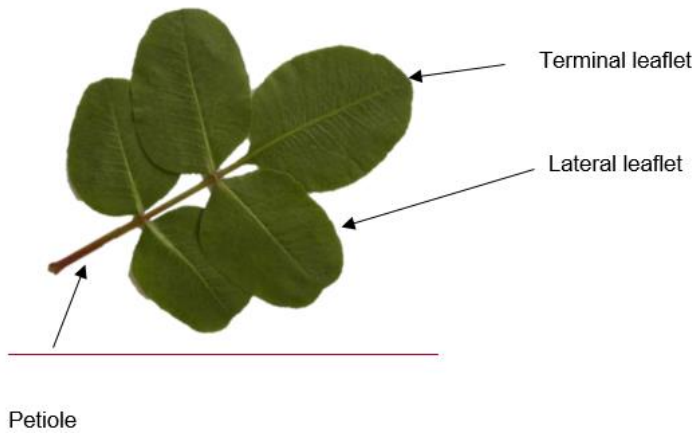
Ad. 3: Plant: density of canopy

The density of canopy of the plant should be considered as the overall abundance of branches during the dormant period.

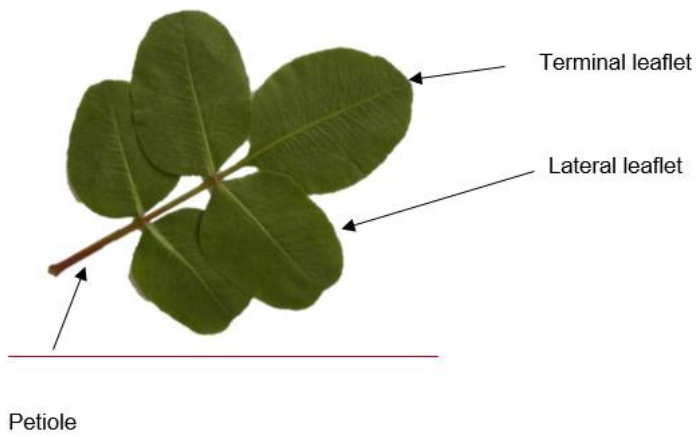
Ad. 8: Leaf: length of petiole



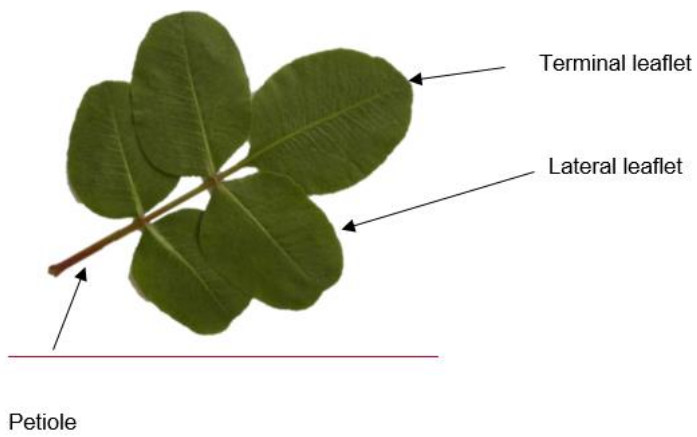
Ad. 9: Terminal leaflet: length



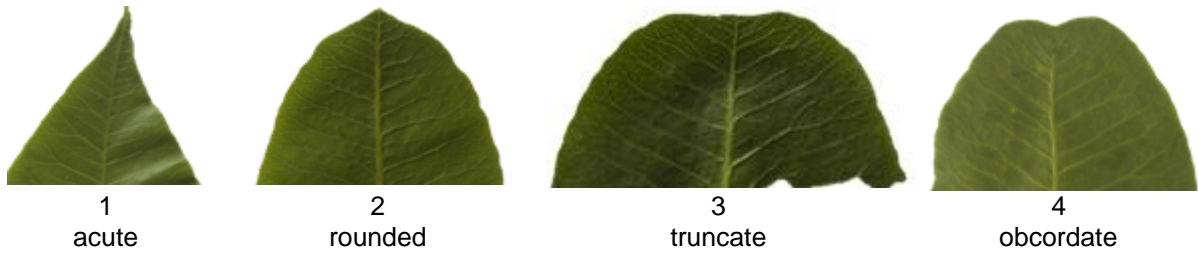
Ad. 10: Terminal leaflet: width



Ad. 11: Terminal leaflet: ratio length/width



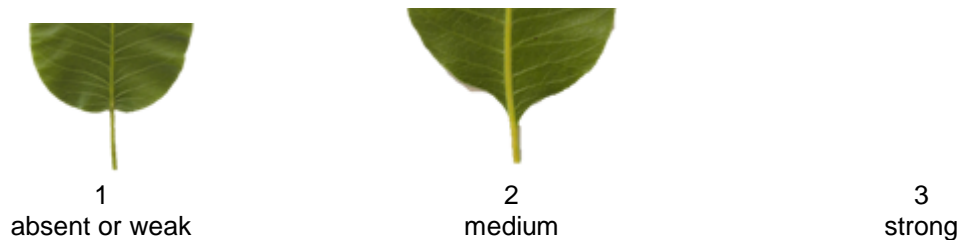
Ad. 12: Terminal leaflet: shape of apex



Ad. 13: Terminal leaflet: shape of base



Ad. 14: Terminal leaflet: asymmetry at base



Ad. 17: Hull: dehiscence

Hull dehiscence should be assessed as the degree of separation of the hull from the shell.

Ad. 33: Kernel: weight

Crack 10 nuts that are ready for consumption and then remove and weight the kernels. Then take the average weight.

Ad. 35: Time of beginning of leaf bud burst

The time of beginning of leaf burst should be considered when 10% of terminal buds have enlarged and the bud scales have split showing the green of the leaves.

Ad. 36: Time of beginning of flowering

The time of beginning of flowering should be considered when 10% of flowers are opened.

Ad. 37: Time of maturity for harvest

The time of maturity for harvest should be considered when hull separates easily from the shell.

9. Literature

Ferguson, L., Polito, V., Kallsen, C., The pistachio tree; botany and physiology and factors that affect yield. <http://fruitsandnuts.ucdavis.edu/files/73683.pdf> pp. 31 to 39.

IPGRI, 1997: Descriptors for Pistachio (*Pistacia vera* L.). International Plant Genetic Resources Institute, Rome, Italy.

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights		
1. Subject of the Technical Questionnaire		
1.1	Botanical name	<input type="text" value="Pistacia L."/>
1.2	Common name	<input type="text" value="Pistachio"/>
2. Applicant		
	Name	<input type="text"/>
	Address	<input type="text"/>
	Telephone No.	<input type="text"/>
	Fax No.	<input type="text"/>
	E-mail address	<input type="text"/>
	Breeder (if different from applicant)	<input type="text"/>
3. Proposed denomination and breeder's reference		
	Proposed denomination (if available)	<input type="text"/>
	Breeder's reference	<input type="text"/>

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross []
(please state parent varieties)

(.....) x (.....)
female parent male parent

(b) partially known cross []
(please state known parent variety(ies))

(.....) x (.....)
female parent male parent

(c) unknown cross []

4.1.2 Mutation []
(please state parent variety)

4.1.3 Discovery and development []
(please state where and when discovered and how developed)

4.1.4 Other []
(please provide details)

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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4.2	Method of propagating the variety	
4.2.1	Other (Please provide details)	[]
	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

Characteristics	Example Varieties	Note
5.1 Plant: sex (1)		
female	Kerman	1 []
male	Peters	2 []
hermaphrodite		3 []
5.2 Plant: growth habit (4)		
upright to spreading	Napolitana	1 []
spreading	Inzolla	2 []
drooping		3 []
5.3 Nut: shape in lateral view (24)		
elliptic		1 []
narrow elliptic		2 []
truncate		3 []
5.4 Kernel: color (34)		
yellowish		1 []
yellowish green		2 []
green		3 []
purplish		4 []
5.5 Time of beginning of leaf bud burst (35)		
very early		1 []
early		2 []
medium		3 []
late		4 []
very late		5 []

Characteristics	Example Varieties	Note
5.6 Time of beginning of flowering (36)		
very early		1 []
early		2 []
medium		3 []
late		4 []
very late		5 []
5.7 Time of maturity for harvest (37)		
very early		1 []
early		2 []
medium		3 []
late		4 []
very late		5 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>			
Comments:			

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- #7. Additional information which may help in the examination of the variety
- 7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?
- Yes No
- (If yes, please provide details)
- 7.2 Are there any special conditions for growing the variety or conducting the examination?
- Yes No
- (If yes, please provide details)
- 7.3 Other information

A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder's reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)"

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (<http://www.upov.int/tgp/en/>).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

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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 (b) is yes, please attach a copy of the authorization.

9. Information on plant material to be examined or submitted for examination

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a)	Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
(b)	Chemical treatment (e.g. growth retardant, pesticide)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
(c)	Tissue culture	Yes <input type="checkbox"/>	No <input type="checkbox"/>
(d)	Other factors	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Please provide details for where you have indicated "yes".

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9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes

(please provide details as specified by the Authority)

No

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name

Signature Date