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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

OLIVE

UPOV Code: OLEAA_EUR

Olea europea L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from South Africa

to be considered by the

Technical Working Party for Fruit Crops
at its forty-first session, to be held in Cuernavaca, Morelos State, Mexico,
from September 27 to October 1, 2010

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Olea europea L.	Olive (vegetative propagated fruit varieties)			

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.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Olea europaea* L.

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 trees (one-year-old) preferable on their own roots.

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

5 trees

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

The minimum duration of tests should normally be two independent growing cycles. In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles.

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

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.

3.4 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 / Parts of Plants to be Examined

Unless otherwise indicated, all observations for the purposes of distinctness should be made on 5 plants or parts taken from each of 5 plants, disregarding any off-type plants. In the case of observations of parts of plants, the number of parts to be taken from each of the plants should be 5.

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.

4.2 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, 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-type 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:

ZA proposes

(a) Fruit shape in position A (characteristic 16)
(b) Fruit nipple (characteristic 24)
(c) Fruit shape of base in position B (characteristic 25)
(d) Stone shape in position B (characteristic 29)
(e) Stone symmetry in position B (characteristic 32)
(f) Stone shape of apex in position A (characteristic 35)
(g) Stone mucron (characteristic 36)
(h) Stone shape of base in position A (characteristic 38)
(i) Stone rugosity of surface (characteristic 39)

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.

Spain explanation.
These 24 asterisked characteristics were the most discriminating, easily distinguishable, and less variable due to environmental changes. For these reasons they were selected and applied by the International Olive Oil Council (IOOC) in the RESGEN European project to carry out the morphological characterization of the main olive cultivars of 13 Mediterranean countries. Thus, these characteristics should be considered as mandatory in every morphological characterization protocol of olive cultivars.

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:

State	Note
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:

State	Note
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

(*) Asterisked characteristic – see Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3
QN: Quantitative characteristic – see Chapter 6.3
PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG, MS, VG, VS – see Chapter 4.1.5

(a)-(f) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8

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

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. (*) (+)	**VG**	**Tree: vigor**					
QN	**(a)**	weak				Aloreña	3
		medium				Picual	5
		strong				Lechin de Sevilla MGS ASC315	7
2. (*) (+)	**VG**	**Tree: growth habit**					
PQ	**(a)**	upright				Alameño de Cabra	3
		spreading				Picual	5
		drooping				Sikitita	7
3. (*) (+)	**VG**	**Tree: canopy density**					
QL	**(a)**	sparse				Gordal de Granada	3
		medium				Picudo MGS GRAP561	5
		dense				Lechin de Sevilla	7
4. (old 7) (+)	**VG**	**Fruiting shoot: feathers**					
QN	**(a)**	absent or very few				Manzanilla	1
		few				Lechin de Granada	2
		medium				Kalamata	3
		many				Carrasqueño de la Sierra	4

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
5. (old 9) (*)	**MS**	**Leaf blade: length**					
QN	**(b)**						
		short	(L< 5cm)			Arbequina	3
		medium	(L: 5-7 cm)			PicudoGordal, MGS ASC315	5
		long	(L> 7 cm)			Sevillana	7
6. (old 10) (*)	**MS**	**Leaf blade: width**					
QN	**(b)**	narrow	(W< 1 cm)			Callosina, MGS MARIENSE	3
		medium	(W:1-1.5 cm)			Hojiblanca, MGS ASC315	5
		broad	(W> 1.5 cm)			Picudo	7
7. (old 12) (*) (+)	**VS**	**Leaf blade: ratio length/width**					
PQ	**(b)**	slightly elongated	(L/W < 4)			Manzanilla de Sevilla	1
		moderately elongated	(L/W: 4-6)			Picual	2
		very elongated	(L/W> 6)			Cornezuelo de Jaen, MGS MARIENSE	3
8. (old 14) ~~(*)~~	**VG**	**Leaf blade: intensity of green color of upper side**					
QN	**(b)**	light				Arbosana	1
		medium				Lechin de Sevilla	2
		dark				Gorda de Sevillana	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
9. (old 16) (*) (+)	**VG**	**Leaf blade: curvature of longitudinal axis**					
P Q	**(b)**	epinastic				Zarza	1
		flat				Galego	2
		hyponastic				Picual	3
		helicoid				Yun Celebi	4
10. (old 20) (+)	**VG**	**Inflorescence: length**					
QN	**(c)**	short				Carolea	1
		medium				Koroneiki	2
		long				Conservolia MGS GRAP541	3
11. (old 23) (+)	**VG**	**Inflorescence: width**					
QN	**(c)**	narrow				Ogliarola Messinese MGS GRAP541	1
		medium				Mission	2
		broad				Barnea	3
12. (old 26) (+)	**VG**	**Flower: attitude of corolla**					
QN	**(c)**	erect				Giarraffa	1
		horizontal				Carolea	2
		reflexed				Frantoio	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
13. (old 28)	**MS**	**Fruit: length**					
QN	**(d)**	very short				Arbequina MGS MARIENSE	1
		short				Manzanilla de Sevilla	3
		medium				Konservolia MGS GRAP561	5
		long				Barouni	7
		very long				Bella di Cerignola	9
14. (old 29)	**MS**	**Fruit: width in position B**					
QN	**(d)**	very narrow				Koroneiki	1
		narrow				Mission	3
		medium				Manzanilla de Sevilla	5
		broad				Barouni	7
		very broad				Sevillano	9
15. (*) (old 31)	**MG**	**Fruit: weight**					
		very low	ES proposed			Koroneiki MGS MARIENSE	1
QN	**(d)**	low	(< 2 g)			Lechin de Granada	3
		medium	(2-4 g)			Carrasqueño de la Sierra	5
		high	(4-6 g)			Picudo	7
		very high	(> 6 g)			Gordal Sevillana	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
16. (old 35)	**VG**	**Fruit: shape in position A**					
PQ	**(+)**	ovate				Gordal Sevillano	1
	(d)	oblong				Frantoio	2
		narrow elliptic				Cornezuelo de Jaen	3
		medium elliptic				Lechin de Sevilla	4
		circular				Manzanilla de Sevilla	5
		obovate				Verdial de Huevar	6
17. (*)	**VG**	**Fruit: ratio length/ width in position A**					
QN	**(d)**	elongated		(L/W>1.45)		Koroneiki Cornezuelo de Jaen	3
		medium		(L/W: 1.25-1.45)		Frantoio	5
		compressed		(L/W< 1.25)		Manzanilla	7
18. (old 32)	**VG**	**Immature fruit: intensity of green color**					
QN	**(e)**	light				Arbequina	1
		medium				Barouni	2
		dark				Itrana	3
19. (old 33)	**VG**	**Immature fruit: size of lenticels**					
QN	**(e)**	small				Leccino	1
		medium				Ascolana tenera MGS ASC315	2
		large				Itrana	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
20. (old 34)	**VG**	**Immature fruit: number of lenticels**					
QN		few				Maurino	1
	(e)	medium				Itrana MGS ASC315	2
		many				FS 17	3
21. (old 36) (*)	**VG**	**Fruit: over color at full maturity**					
PQ	**(d)**	medium violet				Ascolana tenera	1
		dark violet				Verdial de Huevar, Mission, Maurino	2
		black				Picual	3
22. (old 38) (*)	**VG**	**Fruit: symmetry in position A**					
QN	**(d)**	symmetrical				Manzanilla de Sevilla	1
		weakly asymmetric				Hojiblanca MGS MARIENSE	2
		strongly asymmetric				Picudo	3
23. (old 41) (*)	**VG**	**Fruit: shape of apex in position A**					
PQ	**(d)**	acute pointed				Cornezuelo de Jaén	1
		obtuse				Coratino, Gordal Sevillano	2
		rounded				Manzanilla de Sevilla MGS GRAP541	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
24. (old 43) (*) (+)	**VG**	**Fruit: nipple**					
QN	**(d)**	absent or weak				Hojiblanca	1
		moderate				Pajarero	2
		strong				Limoncillo MGS ASC315	3
25. (old 46) (*) (+)	**VG**	**Fruit: shape of base in position ~~(B)~~A**					
		rounded				Gordal Sevillana MGS GRAP541	1
PQ	**(d)**	truncate				Manzanilla	2
		~~depressed~~				~~Carivano Negro~~	~~3~~
26. (old 51) (+)	**VG**	**Fruit: bloom of skin**					
		weak				Picual, Coratino	3
QN	**(d)**	medium				Frantoio	5
		strong				Barnea	7
27. (old 52) (+)	**VG**	**Fruit flesh: degree of coloring at maturity**					
	(d)	absent very weak				Bella di Cerignola	1
QN		weak				Arbequina	2
		medium				Barnea	3
		strong				Barouni	4

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
28. (old 53) (+)	**VG**	**Stone: shape in position A**	**ZA proposed to be deleted**				
PQ		ovate				Bella di Spagna	1
	(f)	oblong				Leccino	2
		elliptic				Carrasqueõno de la Sierra, Hojiblanco	3
		circular				Arbosana	4
		obovate				Manzanilla de Sevilla	5
29. (old 54) (+)	**VG**	**Stone: shape in position B**					
PQ		ovate				Bella di Spagna	1
	(f)	oblong				Leccino	2
		elliptic				Hojiblanco, MGS GRAP541	3
		circular				Itrana	4
		obovate				Aloreña	5
30. (*)	**VG**	**Stone: ratio length/ width**	**New characteristic ZA** Proposed by ES				
QN	**(f)**	Elongated	(L/W>2.2)			Bella di Cerignola	3
		Medium	(L/W: 1.4-2.2)			Barouni	5
		Compressed	(L/W<1.4)			Arbequina	7
31. (old 55) (*) (+)	**VG**	**Stone: symmetry in position A**					
QN	**(f)**	symmetrical				Negrillo	1
		weakly asymmetric				Lechin de Sevilla MGS MARIENSE	2
		strongly asymmetric				Picudo	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
32. (old 56) (*) (+)	**VG**	**Stone: symmetry in position B**					
QN	**(f)**	symmetrical				Hojiblanca	1
		weakly asymmetric				Lechin de Sevilla MGS MARIENSE	2
		strongly asymmetric				Pajarero	3
33. ~~(*)~~ (old 61)	**VG**	**Stone: number of grooves on basal end**					
(+)							
QN	**(f)**	less than 7				Bical MGS GRAP541	1
		between 7 and 10				Picual	2
		more than 10				Manzanilla Prieta	3
34. ~~(*)~~ (old 62)	**VG**	**Stone: distribution of grooves on basal end**					
QL	**(f)**	regular				Hojiblanca MGS GRAP541, MGS MARIENSE	1
		irregular grouped around the suture				Tomatillo	2
35. (old 63) (*)	**VG**	**Stone: shape of apex in position A**	Proposed by ES				
PQ	**(+)**	acute	pointed			Picudo	1
		obtuse	~~obtuse~~				2
		rounded	rounded			Chorrúo	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
36. (old 65) (*) (+)	**VG**	**Stone: mucron**					
QL		absent				Lucio MGS MARIENSE	1
	(f)	present				Chorruo, MGS GRAP561	9
37. (old 66) (*) (+)	**VG**	**Stone: shape of base in position A**					
PQ	**(f)**	acute				Cornezuelo de Jaen	1
		rounded				Morona	2
		truncate				Tomatillo MGS GRAP561	3
38. (old 68)	**VG**	**Stone: prominence of suture**		ZA Propose to be deleted			
QN	**(f)**	weak				Lechin de Granada	3
		medium				Lechin de Sevilla	5
		strong				Gordal Sevillana	7
39. (old 70) (*)	**VG**	**Stone: rugosity ~~texture~~ of surface**	**ZA proposed**				
PQ	**(f)**	~~smooth~~	weak			Lechin de Sevilla	1
		~~rugose~~	medium			Manzanilla Cacereña	2
		~~scabrous~~	strong			Bodoquera MGS ASC315	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
40. (old 72)	**MS**	**Stone: length**					
QN	**(f)**	short				Arbosana	3
		medium				Conservolia	5
		long				Bella di Cerignola	7
41. (old 73)	**MS**	**Stone: width in position B**					
QN	**(f)**	narrow				Koroneiki	3
		medium				Mission	5
		broad				Sevillano	7
42. (old 75) (*)	**MG**	**Stone: weight**					
QN	**(f)**	very low				Arbequina	1
		low	(< 0.3g)			Hojiblanco	3
		medium	(0.3-0.45 g)			Imperial, Itrana	5
		high	(0.45-0.7 g)			Picudo, Barouni	7
		very high	(> 0.7g)			Gordal Sevillana	9
43. (old 77) (+)	**VG**	**Time of fruit ripening**					
QN	**(d)**	very early					1
		early				Picual	3
		medium				Gordal Sevillana	5
		late				Hojiblanca	7
		very late				Don Carlo	9

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) Tree, Fruiting shoot: All observations on the tree and fruiting shoot should be made on 25 fruiting branches distributed over the trees.

(b) Leaf blade: All observations on the leaf blade should be made on fully developed leaves from the central part of one-year-old shoots ~~branches~~ in full growth, equally distributed over the trees and should comprise of 25 leaves, ~~5 from each cardinal point~~.

(c) Inflorescence: All observations of the inflorescence should be made on 25 inflorescences from the central part of fruiting branches equally distributed over the trees.

(d) Fruit: All observations on the fruit should be made on 25 fully ripened fruits. Time of ripening is when 80% of the fruit on the tree has colored. For the fruit two positions (A and B) are used. Position A is the position in which the organ shows its largest asymmetry. Position B is reached from position A by turning ~~by~~ 90º along the longitudinal axis in a way to present the most developed part of the organ to the observer.

(e) Immature fruit: All observations of the immature fruit should be done when 10% of the fruit on the tree has colored. The fruit to be observed should be fully developed and not yet have colored.

(f) Stone: All observations on the stone should be made on dry well-cleaned stones of the same sample used for the observations on the fruit. For the stone two positions (A and B) are used. Position A is the position in which the organ shows its largest asymmetry. Position B is reached from position A by turning ~~by~~ 90º along the longitudinal axis in a way to present the most developed part of the organ to the observer.

8.2 Explanations for individual characteristics

Ad. 1: Tree: vigor
The tree vigor should be considered as the overall abundance of vegetative growth which includes the development of the canopy in both height and volume.

Ad. 2: Tree growth habit
The tree growth habit states the natural attitude of the branches and shoots

Ad. 3: Tree canopy density
The plant density refers to the overall abundance of canopy vegetation. The following measures should be taken into account, length of internode, number and vigor of the shoots and the size of the leaves.

Ad. 4: Fruiting shoot feathers
Observation should relate to the number of lateral shoots on the fruiting shoot.

Ad. 7: Leaf blade ratio length width

1
slightly elongated

2
moderately elongated

3
very elongated

Ad. 9: Leaf blade curvature of longitudinal axis

1
epinastic

2
flat

3
hponastic

4
helicoid

Ad.10: Inflorescence length

3
short

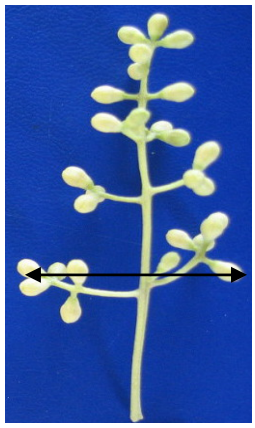
5
medium

7
long

Ad. 11: Inflorescence width

1
narrow

2
medium



3
broad

Ad. 12:Flower attitude of corolla

1
erect

2
horizontal

3
reflexed

Ad. 16 Fruit shape in position A
ZA Pictures will be provided

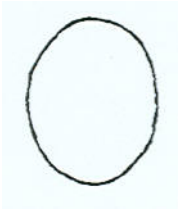
Ad. 24: Fruit nipple

1
absent or weak

2
moderate

3
strong

Ad. 25: Fruit shape of base in position A~~(B)~~



1
rounded

2
truncate

3
~~Depressed~~

Ad. 26: Fruit bloom of skin
Observation should be done on fully mature fruit. Bloom is the waxiness on the skin that can be removed.

Ad. 27: Fruit flesh degree of coloring at maturity
Observation should be done on fully mature fruit. The amount of purple coloration expressed in the flesh, when the fruit has been cut longitudinally.

Ad. ~~28~~, 29: Stone shape in position ~~A and~~ B

← broadest part →		
(below middle)	at middle	(above middle)

broad (compressed) ← width (ratio length/width) → narrow (elongated)			
		 2 oblong	
	 1 ovate	 3 elliptic	 5 obovate
		 4 circular	

Ad. 31, 32: Stone symmetry in position A and B


1
symmetrical


2
weakly asymmetric


3
strongly asymmetric

Ad. 33: Stone number of grooves on basal end
To count the number of grooves that can be seen from the stalk insertion point.

Ad. 35: Stone shape of apex in position A

1
acute

2
obtuse

3
rounded

Ad. 36: Stone mucron

1
absent

2
present

Ad. 37: Stone shape of base in position A

1
acute

2
rounded

3
truncated

Ad. 43: Time of fruit ripening

Time of fruit ripening is when 80% of the fruit on the tree has colored.

9. Literature

To be provided

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	*Olea europaea L.*
1.2 Common name	Olive (vegetative propagated fruit varieties)
1.3 Species name	

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

[#]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:

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

4.2.2 Seed [ ]

4.2.3 Other [ ]
(please provide details)

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

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 (16) (old 35)	**Fruit: shape in position A**		
	ovate	Gordal Sevillano	1[ ]
	narrow elliptic	Cornezuelo de Jaen	2[ ]
	medium elliptic	Lechin de Sevilla	3[ ]
	circular	Manzanilla de Sevilla	4[ ]
	obovate	Verdial de Huevar	5[ ]
5.2 (24) (old 43)	**Fruit: nipple**		
	absent or weak	Hojiblanca	1[ ]
	moderate	Pajarero	2[ ]
	strong	Limoncillo	3[ ]
5.3 (25) (old 46)	**Fruit: shape of base in <u>position A</u>**		
	rounded	Carrasqueño de Alcaudete	1[ ]
	truncate	Manzanilla	2[ ]
	~~depressed~~	~~Cañivano Negro~~	~~3[ ]~~
~~**5.4 (47) old 34**~~	~~**Fruit: width of stalk cavity**~~		
	~~narrow~~	~~Verdial de Huevar~~	~~3[ ]~~
	~~medium~~		~~5[ ]~~
	~~broad~~	~~Cañivano Negro~~	~~7[ ]~~

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

	Characteristics	Example Varieties	Note
5.4 (29)	**Stone: shape in <u>position B</u>**		
	ovate	Bella di Spagna	1[ ]
	oblong	Leccino	2[ ]
	elliptic	Hojiblanco	3[ ]
	circular	Itrana	4[ ]
	obovate	Aloreña	5[ ]
5.5 (32.)	**Stone: symmetry in <u>position B</u>**		
	symmetrical	Hojiblanca	1[ ]
	weakly asymmetric	Lechin de Sevilla	2[ ]
	strongly asymmetric	Pajarero	3[ ]
5.6 (35)	**Stone: shape of apex <u>in position A</u>**		
	acute	Picudo	1[ ]
	obtuse		2[ ]
	rounded	Chorrúo	3[ ]
5.7 (36)	**Stone: mucron**		
	absent	Lucio	1[ ]
	present	Chorruo	9[ ]
5.8 (37)	**Stone: shape of base in <u>position A</u>**		
	acute	Royal, Cornezuelo de Jaen	1[ ]
	rounded	Morona	2[ ]
	truncate	Tomatillo	3[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

	Characteristics	Example Varieties	Note
5.9 (39)	**Stone: ~~texture~~ rugosity of surface**	Lechin de Sevilla	1[ ]
	~~smooth~~ weak	Manzanilla de Cacereña	2[ ]
	~~rugose~~ medium	Bodoquera	3[ ]
	~~scabrous~~ strong		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

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
Example	*Fruit color*	*orange red*	*orange*

Comments:

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

[#]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 What is this variety used for?

Fruit [ ] Ornamental [ ]

7.3 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

(If yes, please provide details)

7.4 Other information

A representative color image of the variety should accompany 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 (b) is yes, please attach a copy of the authorization.

[#] 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:

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 [ ] No [ ]

(b) Chemical treatment (e.g. growth retardant, pesticide) Yes [ ] No [ ]

(c) Tissue culture Yes [ ] No [ ]

(d) Other factors Yes [ ] No [ ]

Please provide details for where you have indicated “yes”.

……

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

[End of document]