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

**DRAFT****POMEGRANATE**

UPOV Code: PUNIC\_GRA

*Punica granatum* L.**GUIDELINES****FOR THE CONDUCT OF TESTS****FOR DISTINCTNESS, UNIFORMITY AND STABILITY***prepared by an expert from Spain**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:\*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Punica granatum</i> L.	Pomegranate	Grenade	Granatapfel	Granado

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](http://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 *Punica granatum* L. These test guidelines may also be useful for the examination of hybrids involving *P. granatum*.

## 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 one-year-old rooted cuttings.

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

9 virus-tested one-year-old rooted cuttings.

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 growing cycle is considered to be the duration of a single growing season, beginning with bud burst (flowering and/or vegetative), flowering and fruit harvest and concluding when the following dormant period ends with the swelling of new season buds.

### 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 Trees should only be pruned in the year of planting to ensure good branch formation.

### 3.4 *Test Design*

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

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 parts of plants, the number to be taken from each of the plants should be 2.

#### 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-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) Flower: color change of calyx after petal fall (characteristic 20)
- (b) Fruit: diameter (characteristic 22)
- (c) Fruit: color of skin (characteristic 26)
- (d) Seed: toughness of tegmen (characteristic 35)
- (e) Seed: color (characteristic 36)
- (f) Time of maturity for consumption (characteristic 38)

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:

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

(+) See Explanations on the Table of Characteristics in Chapter 8.2

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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>1.</b>	<b>Tree: vigor</b>			<b>Árbol: vigor</b>		
(+)						
<b>QN</b>	<b>(a)</b> weak			débil		3
	medium			medio		5
	strong			fuerte		7
<b>2.</b>	<b>Tree: habit</b>			<b>Árbol: porte</b>		
(+)						
<b>QN</b>	<b>(a)</b> upright			erecto		3
	spreading			abierto		5
	weeping			llorón		7
<b>3.</b>	<b>Tree: bark color</b>			<b>Árbol: color de la corteza</b>		
<b>PQ</b>	<b>(a)</b> light grey			gris claro		1
	medium grey			gris medio		2
	dark grey			gris oscuro		3
<b>4.</b>	<b>One-year-old shoot: color on sunny side</b>			<b>Rama de un año: color de la parte expuesta al sol</b>		
<b>PQ</b>	<b>(b)</b> green			verde		
	green with pink stripes			verde con estrías rosadas		
	pink			rosa		
	pink purple			rosa-púrpura		
	purple			púrpura		
<b>5.</b>	<b>One-year-old shoot: thorny ended</b>			<b>Rama de un año: terminación en espina</b>		
<b>QL</b>	<b>(b)</b> absent or very low			ausente o muy bajo		1
	present			presente		9



	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>6.</b>	<b>Young shoot: nodes shoot</b>			<b>Rama joven: brotación de los nudos</b>		
	presence of nodes with two leaves			presencia de nudos con dos hojas	Mollar de Elche	1
	all with more than two leaves			todos con más de dos hojas	Porfianca	9
<b>7.</b>	<b>Leaf blade: length</b>			<b>Limbo hoja: longitud</b>		
QN (c)	short			corto	Mollar de Elche, Porfianca	3
	medium			medio	Valenciano	5
	long			largo	Borde, Wonderful	7
<b>8.</b>	<b>Leaf blade: width</b>			<b>Limbo hoja: anchura</b>		
QN (c)	narrow			estrecho	Wonderful	3
	medium			medio		5
	broad			ancho	Borde, Mollar de Elche	7
<b>9.</b>	<b>Leaf blade: ratio length/width</b>			<b>Limbo: relación longitud/anchura</b>		
QN (c)	small			pequeña		3
	medium			media	Tendral	5
	large			grande	Wonderful	7
<b>10.</b>	<b>Leaf blade: shape of apex</b>			<b>Limbo: forma del ápice</b>		
QL (c)	acute			agudo	Wonderful	3
	approximately right angle			aproximadamente ángulo recto	Acco, Tendral	5
	obtuse			obtuso	Mollar de Elche	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>11.</b>	<b>Petiole: length</b>		<b>Pecíolo: longitud</b>			
<b>QN</b>	<b>(c)</b>	short		corto		3
		medium		medio		5
		long		largo		7
<b>12.</b>	<b>Petiole: intensity of anthocyanin coloration</b>		<b>Pecíolo: intensidad de la coloración antocianica</b>			
<b>QN</b>	<b>(c)</b>	weak		ligera	Acco	3
		medium		media	Mollar de Elche	5
		strong		alta	Borde, Tendral	7
<b>13.</b>	<b>Flower: predominant color of calyx</b>		<b>Flor: color predominante del cáliz</b>			
<b>PQ</b>	<b>(d)</b>	orange		naranja	Mollar de Elche, Valenciana	1
		orange red		naranja rojizo	Wonderful	2
		medium red		rojo medio		3
		deep red		rojo oscuro		4
<b>14.</b>	<b>Flower: predominant color of corolla</b>		<b>Flor: color predominante de la corola</b>			
<b>PQ</b>	<b>(d)</b>	white		blanco		1
		pinkish white		blanco rosado		2
		pink		rosa		3
		light orange		naranja claro	Borde	4
		medium orange		naranja medio	Mollar de Elche, Wonderful	5
		orange red		naranja rojizo		6
		medium red		rojo		7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>15.</b>	<b>Flower: length of petal</b>			<b>Flor: longitud de los pétalos</b>		
(+)						
<b>QN</b>	<b>(d)</b> small			corto		3
	medium			medio		5
	large			largo		7
<b>16.</b>	<b>Flower: width of petal</b>			<b>Flor: anchura de los pétalos</b>		
(+)						
<b>QN</b>	narrow			estrecho		3
	medium			medio		5
	broad			ancho		7
<b>17.</b>	<b>Flower: length of calyx</b>			<b>Flor: longitud del cáliz</b>		
(+)						
<b>QN</b>	small			corto		3
	medium			medio		5
	large			largo		7
<b>18.</b>	<b>Flower: width of calyx</b>			<b>Flor: anchura del cáliz</b>		
(+)						
<b>QN</b>	narrow			estrecho		3
	medium			medio		5
	broad			ancho		7
<b>19.</b>	<b>Flower: ratio length/diameter of calyx</b>			<b>Flor: relación longitud/adiámetro del cáliz</b>		
<b>QN</b>	<b>(c)</b> small			pequeña		3
	medium			media		5
	large			grande		7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>20.</b>	<b>Flower: color change of calyx after petal fall</b>			<b>Flor: cambio de color del cáliz después de la caída de pétalos</b>		
	absent			ausente	Wonderful	1
	present			presente	Mollar de Elche	9
<b>21.</b>	<b>Fruit: length</b>			<b>Fruto: altura</b>		
	short			corto		3
	medium			medio		5
	long			largo		7
<b>22.</b>	<b>Fruit: diameter</b>			<b>Fruto: diámetro</b>		
(+)						
<b>QN</b>	(e)	small		pequeño		3
		medium		medio	Borde	5
		large		grande	Mollar de Elche, Wonderful	7
<b>23.</b>	<b>Fruit: ratio length/diameter</b>			<b>Fruto: relación longitud/diámetro</b>		
<b>QN</b>	(e)	small		pequeña		3
		medium		media		5
		large		grande		7
<b>24.</b>	<b>Fruit: length of calyx crown</b>			<b>Fruto: longitud de la corona del cáliz</b>		
(+)						
<b>QN</b>	(e)	short		corto		3
		medium		medio	Mollar de Elche	5
		long		largo	Wonderful	7
<b>25.</b>	<b>Fruit: type of calyx</b>			<b>Fruto: tipo de cáliz</b>		
<b>QL</b>	(e)	closed		cerrado		1
		open		abierto		2

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>26.</b>	<b>Fruit: color of skin</b>			<b>Fruto: color de la piel</b>		
<b>PQ (f)</b>	greenish yellow			amarillo verdoso		1
	cream yellow			amarillo crema	Mollar de Albaterra	2
	red yellow			amarillo rojo	Mollar de Elche	3
	light pink			rosa claro		4
	medium pink			rosa medio		5
	dark pink			rosa oscuro	Valenciano	6
	red			rojo	Acco	7
	dark red			rojo oscuro		8
<b>27.</b>	<b>Fruit: thickness of skin</b>			<b>Fruto: espesor de la corteza</b>		
<b>QN (e)</b>	thick			delgada	Acco, Valenciano, Wonderful	3
	medium			media		5
	broad			gruesa	Kamel	7
<b>28.</b>	<b>Fruit: sweetness</b>			<b>Fruto: contenido en sólidos solubles totales</b>		
<b>QN (e)</b>	low			bajo		3
	medium			medio		5
	high			alto		7
<b>29.</b>	<b>Fruit: acidity</b>			<b>Fruto: acidez</b>		
<b>(e)</b>	low			bajo	Mollar de Elche, Valenciano	3
	medium			medio	Acco, Wonderful	5
	high			alto		7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>30.</b>	<b>Fruit: juiciness</b>			<b>Fruto: contenido en jugo</b>		
<b>QN</b>	(e)			muy bajo		1
				bajo	Wonderful	3
				medio	Mollar de Elche	5
				alto	Valenciano	7
				muy alto		9
<b>31.</b>	<b>Seed: length of arile</b>			<b>Semilla: longitud del arilo</b>		
	(g)			corta		3
				media	Acco	5
				larga	Mollar de Elche	7
<b>32.</b>	<b>Seed: width of arile</b>			<b>Semilla: anchura del arilo</b>		
	(+)					
<b>QN</b>				estrecha		3
	(g)			media	Acco, Wonderful	5
				ancha	Piñón tierno de Ojós	7
<b>33.</b>	<b>Seed: length of tegmen</b>			<b>Semilla: longitud del tegmen</b>		
	(+)					
<b>QN</b>	(g)			corta	Valenciano	3
				media	Mollar de Elche	5
				larga		7
<b>34.</b>	<b>Seed: width of tegmen</b>			<b>Semilla: anchura del tegmen</b>		
	(+)					
<b>QL</b>	(g)			estrecha		3
				media	Mollar de Elche, Wonderful	5
				ancha		7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>35.</b>	<b>Seed: toughness of tegmen</b>			<b>Semilla: dureza del tegmen</b>		
(+)						
<b>QL</b>	(g) soft			blando	Mollar de Elche, Valenciano	1
	medium			media	Wonderful	2
	hard			duro	Borde	3
<b>36.</b>	<b>Seed: color</b>			<b>Semilla: color</b>		
<b>PQ</b>	(g) red white			blanco rojo	Mollar de Elche	1
	light pink			rosa claro	Valenciano	2
	medium pink			rosa medio	Tendral	3
	dark pink			rosa oscuro		4
	light red			rojo claro		5
	medium red			rojo medio		6
	dark red			rojo oscuro	Wonderful	7
<b>37.</b>	<b>Time of beginning of flowering</b>			<b>Época de cominezo de la floración</b>		
<b>QN</b>	early			temprana		3
	medium			media		5
	late			tardía		7
<b>38.</b>	<b>Time of maturity for consumption</b>			<b>Época de maduración para el consumo</b>		
<b>QN</b>	very early			muy temprana		1
	early			temprana	Valenciano	3
	medium			media	Mollar de Elche, Wonderful	5
	late			tardía		7
	very late			muy tardía		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) All observations on the tree should be made in winter, when there are not leaves on the tree.
- (b) All observations on the one year shoot should be made in winter.
- (c) All observations on the leaf should be made on mature leaves from current season's shoots and on nodes with low number of leaves.
- (d) All observations on the flower should be made at the time of full flowering and on fully open flowers.
- (e) All observations on the fruit should be made on 10 fruits selected from a 20 fruits sample, at full maturity for consumption.
- (f) All observations on the peel should be made on the equatorial zone of the fruit.
- (g) All observations on the seed should be made on fresh seeds.

### 8.2 *Explanations for individual characteristics*

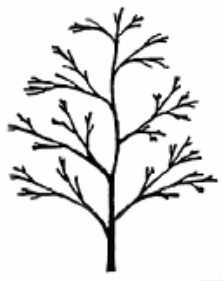
#### Ad. 1: Tree: vigor

The tree vigor refers to the density of branches.

#### Ad. 2: Tree: habit



1  
upright



2  
spreading

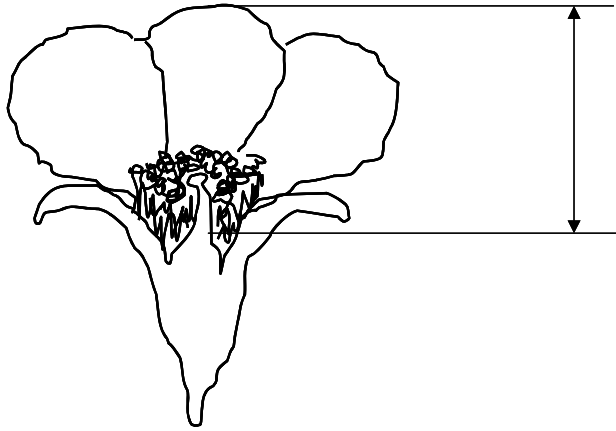


3  
weeping

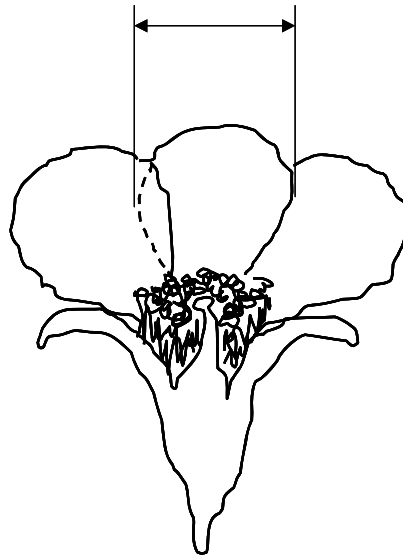


Ad. 15: Flower: length of petal

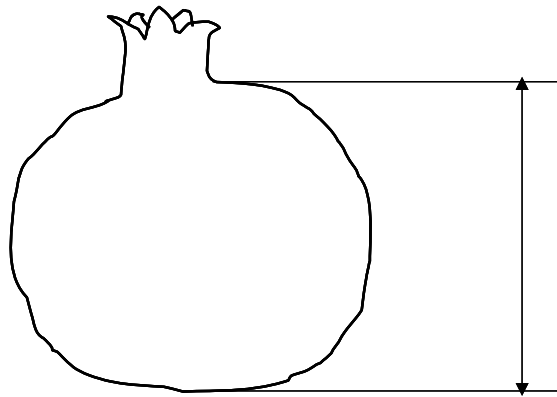
Length of petal must be observed from the union to the calyx.



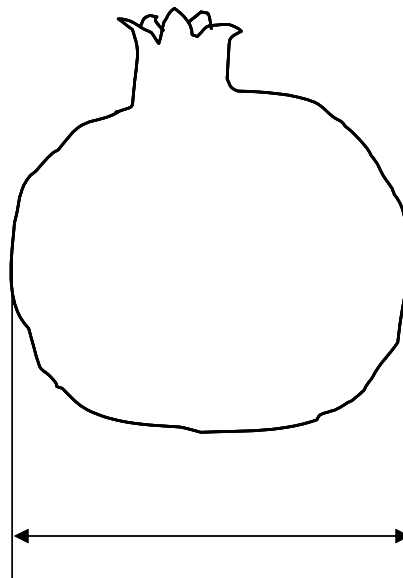
Ad. 16: Flower: width of petals



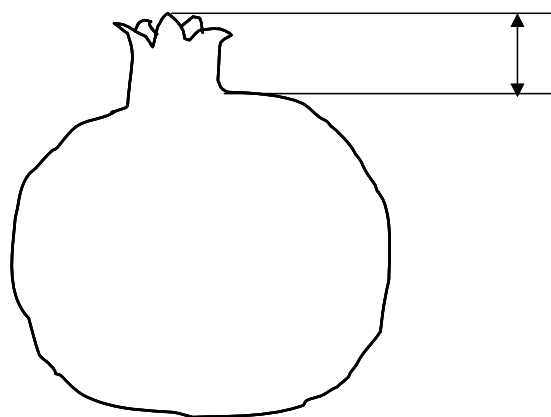
Ad. 17: Fruit: length



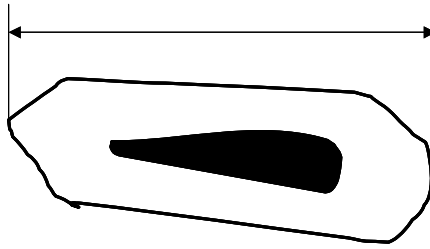
Ad. 18: Fruit: diameter



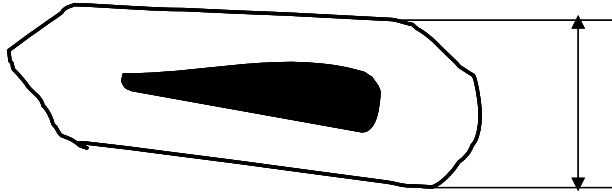
Ad. 20: Fruit: length of calyx crown



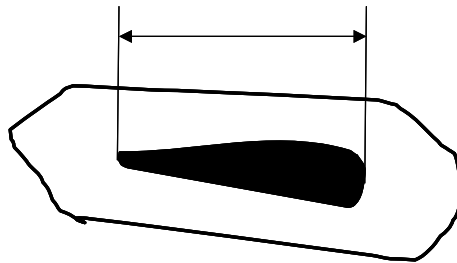
Ad. 27: Seed: length of aril



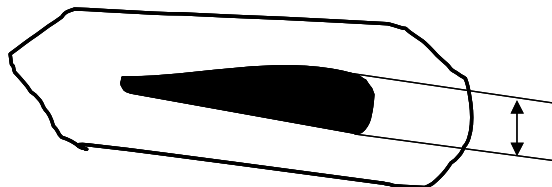
Ad. 28: Seed: width of aril



Ad. 29: Seed: length of tegmen



Ad. 30: Seed: width of tegmen



9. Literature

Holland, D. Hatib, K. Bar-Ya'akov, I. 2009. Pomegranate: Botany, Horticulture, Breeding. In: Horticultural Reviews. Volume 35. Ed. Janick, J. John Wiley and Sons, Inc. Hoboken. New Jersey. pp. 127-191.

Melgarejo, P., Salazar, D. 2003. Tratado de fruticultura para zonas áridasy semiáridas. Volumen II. Algarrobo, grandado y jinjolero. AMV. Ediciones Mundiprensa.

Morton, J. 1987. Pomegranate. In: Fruits of warm climates. Ed. Morton, J. Miami FL. pp. 352-355.

Özgüven, A. 2006. Proceedings of the 1<sup>st</sup> International Symposium on Pomegranate and minor Mediterranean Fruits. Acta Horticulturae 818. Adana. Turkey.

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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	Application date: (not to be filled in by the applicant)
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TECHNICAL QUESTIONNAIRE  
to be completed in connection with an application for plant breeders' rights

In the case of hybrid varieties which are the subject of an application for plant breeders' rights, and where the parent lines are to be submitted as a part of the examination of the hybrid variety, this Technical Questionnaire should be completed for each of the parent lines, in addition to being completed for the hybrid variety.

1. Subject of the Technical Questionnaire

1.1 Botanical name

1.2 Common name

2. Applicant

Name

Address

Telephone No.

Fax No.

E-mail address

Breeder (if different from applicant)

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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3. Proposed denomination and breeder's reference

Proposed denomination  
(if available)

Breeder's reference

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

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## 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:
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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
<b>5.1 Tree: vigor</b> (1)		
very weak		1[ ]
very weak to weak		2[ ]
weak		3[ ]
weak to medium		4[ ]
medium		5[ ]
medium to strong		6[ ]
strong		7[ ]
strong to very strong		8[ ]
very strong		9[ ]
<b>5.2 Tree: bark color</b> (3)		
light grey		1[ ]
medium grey		2[ ]
dark grey		3[ ]
<b>5.3 Petiole: intensity of anthocyanin coloration</b> (12)		
very weak		1[ ]
very weak to weak		2[ ]
weak	Acco	3[ ]
weak to medium		4[ ]
medium	Mollar de Elche	5[ ]
medium to strong		6[ ]
strong	Borde, Tendral	7[ ]
strong to very strong		8[ ]
very strong		9[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
<b>5.4 Flower: predominant color of the corolla (14)</b>		
white		1[ ]
pinkish white		2[ ]
pink		3[ ]
light orange	Borde	4[ ]
medium orange	Mollar de Elche, Wonderful	5[ ]
orange-red		6[ ]
medium red		7[ ]
<b>5.5 Flower: length of petal (15)</b>		
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[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
<b>5.6 Fruit: diameter (22)</b>		
very small		1[ ]
very small to small		2[ ]
small		3[ ]
small to medium		4[ ]
medium	Borde	5[ ]
medium to large		6[ ]
large	Mollar de Elche, Wonderful	7[ ]
large to very large		8[ ]
very large		9[ ]
<b>5.7 Fruit: color of skin (26)</b>		
greenish yellow		1[ ]
cream yellow	Mollar de Albaterra	2[ ]
red yellow	Mollar de Elche	3[ ]
light pink		4[ ]
medium pink		5[ ]
dark pink	Valenciano	6[ ]
red	Acco	7[ ]
dark red		8[ ]
purplish red		9[ ]
dark purplish red		10[ ]

<b>TECHNICAL QUESTIONNAIRE</b>	Page {x} of {y}	Reference Number:
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	Characteristics	Example Varieties	Note
<b>5.8</b>	<b>Seed: color</b>		
<b>(36)</b>			
	red white		1[ ]
	light pink		2[ ]
	medium pink		3[ ]
	dark pink		4[ ]
	light red		5[ ]
	medium red		6[ ]
	dark red		7[ ]
<b>5.9</b>	<b>Time of beginning of flowering</b>		
<b>(37)</b>			
	very early		1[ ]
	very early to early		2[ ]
	early		3[ ]
	early to medium		4[ ]
	medium		5[ ]
	medium to late		6[ ]
	late		7[ ]
	late to very late		8[ ]
	very late		9[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
<b>5.10 Time of maturity for consumption (38)</b>		
very early		1[ ]
very early to early		2[ ]
early	Valenciano	3[ ]
early to medium		4[ ]
medium	Mollar de Elche, Wonderful	5[ ]
medium to late		6[ ]
late		7[ ]
late to very late		8[ ]
very late		9[ ]

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 <b>similar</b> variety(ies)	Describe the expression of the characteristic(s) for <b>your</b> candidate variety
<i>Example</i>	{ GN 33 } (Chapter 10: TQ 6) – similar varieties }		
Comments:			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>#7. Additional information which may help in the examination of the variety</p> <p>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?</p> <p>Yes [ ] No [ ]</p> <p>(If yes, please provide details)</p> <p>7.2 Are there any special conditions for growing the variety or conducting the examination?</p> <p>Yes [ ] No [ ]</p> <p>(If yes, please provide details)</p> <p>7.3 Other information</p> <p>7.3 A representative color image of the variety should accompany the Technical Questionnaire.</p>		
<p>8. Authorization for release</p> <p>(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?</p> <p>Yes [ ] No [ ]</p> <p>(b) Has such authorization been obtained?</p> <p>Yes [ ] No [ ]</p> <p>If the answer to (b) is yes, please attach a copy of the authorization.</p>		

# 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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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