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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

PHYSIC NUT

UPOV Code(s):JATRO_CUR

Jatropha curcas L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from Mexico
to be considered by the
Technical Working Party for Fruit Crops
at its fifty-first session, to be held in Nîmes, France,
from 2020-07-06 to 2020-07-10

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Jatropha curcas L.	Physic Nut			

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 *Jatropha curcas* 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 young plants or seed.

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

Vegetatively propagated varieties: 5 young plants.
Seed propagated varieties: 30 seeds.

In the case of seed, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent 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 In particular, it is essential that the trees produce a satisfactory crop of fruit in each of the two growing cycles.

3.1.4 The growing cycle is considered to be the period ranging from the beginning of development of an individual flower or inflorescence, through fruit development and concluding with the harvesting of fruit from the corresponding individual flower or inflorescence.

3.1.5 The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.

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 In the case of vegetatively propagated varieties, each test should be designed to result in a total of at least 5 trees.

3.4.2 In the case of seed-propagated varieties, each test should be designed to result in a total of at least 15 trees.

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

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

In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 2.

In the case of seed-propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 15 plants or parts taken from each of 15 plants and any other observation made on all plants in the test, disregarding any off-type plants.

In the case of observations of parts taken from single plants, the number of parts 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 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 The assessment of uniformity for cross-pollinated should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.3 For the assessment of uniformity of vegetatively propagated, 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 seed or 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) Leaf blade: presence of serration on margin (characteristic 7)
(b) Leaf blade: number of lobes (characteristic 9)
(c) Petiole: intensity of anthocyanin coloration (characteristic 11)
(d) Fruit: length (characteristic 20)
(e) Seed: length (characteristic 25)

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:

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

	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)-(d) 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.		**QN VG**					
		Young leaf blade: intensity of anthocyanin coloration					
		absent or very weak				ALJC-01, Doña Aurelia	1
		absent or very weak to weak					2
		weak					3
		weak to medium					4
		medium					5
		medium to strong					6
		strong				Ladda 1	7
		strong to very strong					8
		very strong					9
2.	**(*)**	**QN MS/VG**	**(a)**				
		Leaf blade: length					
		very short					1
		very short to short					2
		short				ALJC-X1	3
		short to medium					4
		medium				Don Rafael	5
		medium to long					6
		long					7
		long to very long					8
		very long					9
3.		**QN VG**	**(+)**				
		Tree: growth habit					
		upright				Don Rafael	1
		semi-upright to spreading				Gran Victoria, Sevangel	2
		spreading				ALJC-01, Doña Aurelia	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4.	**QN** **MS/VG**		**(a)**				
		Leaf blade: width					
		very narrow					1
		very narrow to narrow					2
		narrow				Ladda 1	3
		narrow to medium					4
		medium				Don Rafael	5
		medium to broad					6
		broad					7
		broad to very broad					8
		very broad					9
5.	**QN** **MS/VG**		**(a)**				
		Leaf blade: ratio length/width					
		very low					1
		very low to low					2
		low					3
		low to medium					4
		medium				Ladda 1	5
		medium to high					6
		high				Don Rafael, Doña Aurelia	7
		high to very high					8
		very high					9
6.	**QL** **VG**		**(a)**				
		Leaf blade: shape of base					
		rounded				ALJC-01	1
		cordate					2
7.	**(*)** **QL** **VG**		**(a)**				
		Leaf blade: presence of serration on margin					
		absent				ALJC-01, Doña Aurelia	1
		present					9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
8.		**QL**	**VG**	**(+)**	**(a)**				
		Leaf blade: shape of tip							
		apiculate						Sevangel	1
		acuminate						ALJC-01, ALJC-X1	2
9.	**(*)**	**QN**	**VG**	**(+)**	**(a)**				
		Leaf blade: number of lobes							
		none or few							1
		medium						Doña Aurelia, Gran Victoria	2
		many							3
10.	**(*)**	**QN**	**MS/VG**		**(b)**				
		Petiole: length							
		very short							1
		very short to short							2
		short						ALJC-X1	3
		short to medium							4
		medium						ALJC-01, Gran Victoria	5
		medium to long							6
		long							7
		long to very long							8
		very long							9
11.	**(*)**	**QN**	**VG**		**(b)**				
		Petiole: intensity of anthocyanin coloration							
		absent or weak						Doña Aurelia, Gran Victoria	1
		absent or weak to medium							2
		medium						Sevangel	3
		medium to strong							4
		strong						Ladda 1	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.	**PQ** **VG**	**(c)**				
	Inflorescence: flowers					
	mainly male				ALJC-X1	1
	only female				Doña Aurelia, Gran Victoria	2
	mainly female					3
	mainly hermaphrodite					4
13.	**PQ** **VG**	**(+)** **(c)**				
	Female flower: shape of sepal					
	elliptic				ALJC-01	1
	medium ovate					2
	broad ovate					3
	triangular					4
14.	**QN** **MS/VG**	**(c)**				
	Female flower: length of petal					
	short				Gran Victoria	1
	short to medium					2
	medium				Doña Aurelia	3
	medium to long					4
	long				Don Rafael	5
15.	**QN** **MS/VG**	**(c)**				
	Female flower: width of petal					
	narrow				Doña Aurelia	1
	narrow to medium					2
	medium				Don Rafael	3
	medium to broad					4
	broad				Ladda 1	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	**QN** **MS/VG**		**(c)**				
	Female flower: ratio length/width of petal						
	low					Don Rafael	1
	low to medium						2
	medium					ALJC-01, Gran Victoria	3
	medium to high						4
	high					Doña Aurelia	5
17.	**PQ** **VG**		**(c)**				
	Female flowers: color of petal						
	light green					ALJC-01, Gran Victoria	1
	medium green						2
	dark green						3
	red					Ladda 1	4
18.	**PQ** **VG**		**(+)**				
	Immature fruit: color						
	light green					Sevangel	1
	medium green					ALJC-01	2
	dark green					Gran Victoria	3
	red					Ladda 1	4
19.	**(*)** **QN** **MS/VG**		**(+)**	**(d)**			
	Fruit: thickness of pericarp						
	very thin						1
	very thin to thin						2
	thin					Doña Aurelia	3
	thin to medium						4
	medium					ALJC-01	5
	medium to thick						6
	thick						7
	thick to very thick						8
	very thick						9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20. (*)	**QN MS/VG**	**(d)**				
	Fruit: length					
	very short					1
	very short to short					2
	short				Sevangel	3
	short to medium					4
	medium				ALJC-01	5
	medium to long					6
	long				Gran Victoria	7
	long to very long					8
	very long					9
21.	**QN MS/VG**	**(d)**				
	Fruit: width					
	very narrow					1
	very narrow to narrow					2
	narrow				Sevangel	3
	narrow to medium					4
	medium				Don Rafael	5
	medium to broad					6
	broad					7
	broad to very broad					8
	very broad					9
22.	**QN MS/VG**	**(d)**				
	Fruit: ratio length/width					
	very low					1
	very low to low					2
	low				Gran Victoria	3
	low to medium					4
	medium				ALJC-01	5
	medium to high					6
	high				Sevangel	7
	high to very high					8
	very high					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23.	**(*)**	**QN MS/VG**	**(d)**				
		Fruit: length of peduncle					
		very short					1
		very short to short					2
		short				Doña Aurelia, Gran Victoria	3
		short to medium					4
		medium				ALJC-01, Sevangel	5
		medium to long					6
		long					7
		long to very long					8
		very long					9
24.		**PQ VG**	**(+) (d)**				
		Seed: shape					
		oblong				Doña Aurelia, Ladda 1	1
		elliptic				ALJC-01, Gran Victoria	2
		obovate					3
25.	**(*)**	**QN MS/VG**	**(+) (d)**				
		Seed: length					
		short				Ladda 1	1
		short to medium					2
		medium				Gran Victoria, Sevangel	3
		medium to long					4
		long				Don Rafael	5
26.		**QN MS/VG**	**(+) (d)**				
		Seed: width					
		narrow				Ladda 1, Sevangel	1
		narrow to medium					2
		medium				Don Rafael, Gran Victoria	3
		medium to broad					4
		broad					5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27.		**QN MS/VG**	**(d)**				
		Seed: ratio length/width					
		low				Gran Victoria	1
		low to medium					2
		medium				ALJC-X1, Don Rafael	3
		medium to high					4
		high				Sevangel	5
28.		**QN MS/VG**	**(+)** **(d)**				
		Seed: thickness					
		thin				Ladda 1	1
		thin to medium					2
		medium				Doña Aurelia, Gran Victoria	3
		medium to thick					4
		thick					5
29.		**QN MG**	**(+)** **(d)**				
		Endocarp: intensity of brown color					
		light				Gran Victoria	1
		medium				Ladda 1	2
		dark				Don Rafael, Doña Aurelia	3
30.	**(*)**	**QL VG**	**(d)**				
		Endocarp: glossiness					
		absent				Doña Aurelia, Gran Victoria, Sevangel	1
		present				ALJC-01, Don Rafael	9

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

(a) Leaf blade: Observations on the leaf blade should be made on mature leaves. Leaves should be taken from the middle third of the current season's shoot.

(b) Petiole: Observations on the petiole should be made on mature leaves taken from the middle third of the current shoot and attached adjacent to the inflorescence.

(c) Inflorescence and flower: Observations on the inflorescence and flower should be made at the first flowering.

(d) Fruit and seed: Observations on the fruit and seed should be made on the fruit taken from the middle part of the fruiting area of the plant at the time of the fruit ripening.

8.2 Explanations for individual characteristics

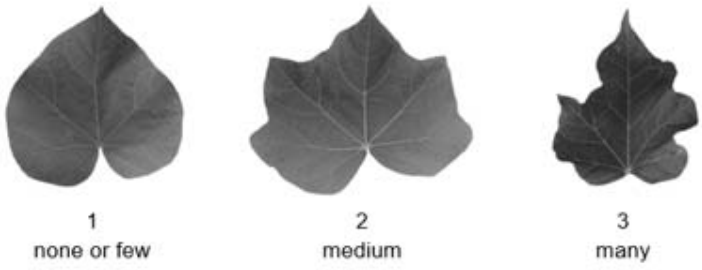
Ad. 3: Tree: growth habit

1 upright | 2 upright to spreading | 3 spreading

Ad. 8: Leaf blade: shape of tip

1 apiculate | 2 acuminate

Ad. 9: Leaf blade: number of lobes

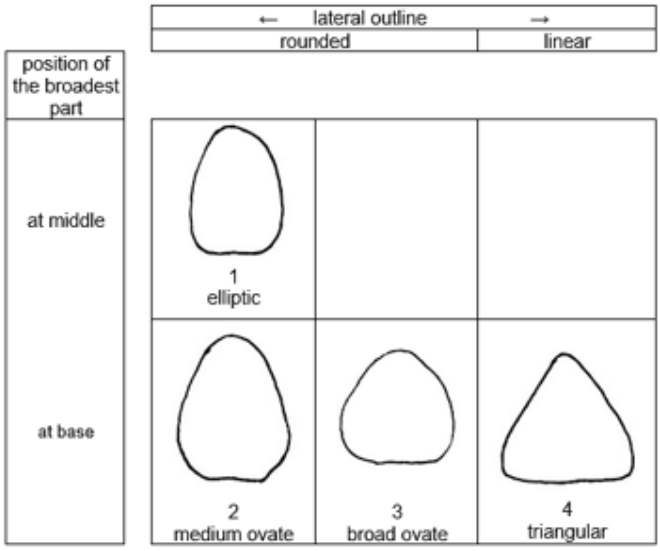


1
none or few

2
medium

3
many

Ad. 13: Female flower: shape of sepal



Ad. 18: Immature fruit: color

Observations should be made on the middle part of the fruiting area at the time just before fruit maturity.

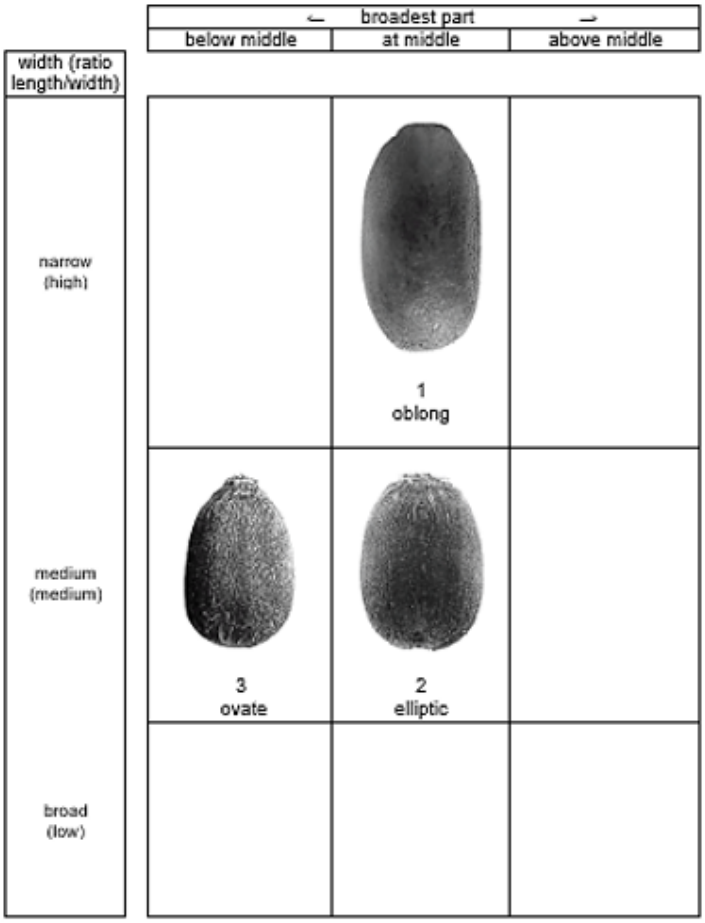
Ad. 19: Fruit: thickness of pericarp

3
thin

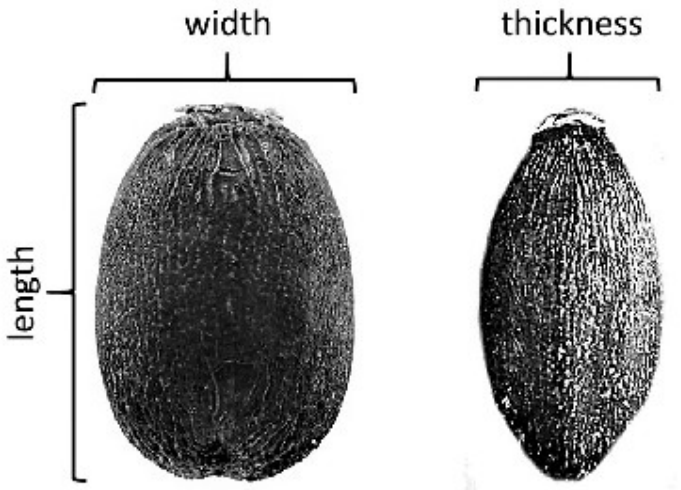
5
medium

7
thick

Ad. 24: Seed: shape



Ad. 25: Seed: length



Ad. 26: Seed: width

See Ad. 25.

Ad. 28: Seed: thickness

See Ad. 25.

Ad. 29: Endocarp: intensity of brown color

The intensity of brown color should be assessed as the overall brown color of the endocarp surface.

9. Literature

Avendaño-Arzate, C.H., Zamarripa-Colmenero, A. 2012: Guía gráfica de descriptores varietales de piñón mexicano (*Jatropha curcas* L.) Publicación Especial Núm. 1. Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias. Campo Experimental, Tuxtla Chico, Chiapas, México. 76 pp.

Barrientos Priego, A., Córdova Téllez, L. Zamarripa Colmanero, A., Avendaño Arrazate, C.H. 2014: Guía técnica para la descripción varietal de jatropha (*Jatropha curcas* L.). Servicio Nacional de Inspección y Certificación de Semillas, Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación. Tlalnepantla, Estado de México, México. 19 p.

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	*Jatropha curcas* L.
1.2	Common name	Physic Nut

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:

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 Seed-propagated varieties

(a) Self-pollination [ ]
(b) Cross-pollination [ ]
(i) Population [ ]
(c) Hybrid [ ]
(d) Other (please provide details) [ ]

4.2.2 Vegetative propagation

(a) Cuttings [ ]
(b) Other (state method) [ ]

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 (2)	**Leaf blade: length**		
	very short		1 [ ]
	very short to short		2 [ ]
	short	ALJC-X1	3 [ ]
	short to medium		4 [ ]
	medium	Don Rafael	5 [ ]
	medium to long		6 [ ]
	long		7 [ ]
	long to very long		8 [ ]
	very long		9 [ ]
5.2 (7)	**Leaf blade: presence of serration on margin**		
	absent	ALJC-01, Doña Aurelia	1 [ ]
	present		9 [ ]
5.3 (9)	**Leaf blade: number of lobes**		
	none or few		1 [ ]
	medium	Doña Aurelia, Gran Victoria	2 [ ]
	many		3 [ ]
5.4 (10)	**Petiole: length**		
	very short		1 [ ]
	very short to short		2 [ ]
	short	ALJC-X1	3 [ ]
	short to medium		4 [ ]
	medium	ALJC-01, Gran Victoria	5 [ ]
	medium to long		6 [ ]
	long		7 [ ]
	long to very long		8 [ ]
	very long		9 [ ]

	Characteristics	Example Varieties	Note
5.5 (11)	**Petiole: intensity of anthocyanin coloration**		
	absent or weak	Doña Aurelia, Gran Victoria	1 [ ]
	absent or weak to medium		2 [ ]
	medium	Sevangel	3 [ ]
	medium to strong		4 [ ]
	strong	Ladda 1	5 [ ]
5.6 (19)	**Fruit: thickness of pericarp**		
	very thin		1 [ ]
	very thin to thin		2 [ ]
	thin	Doña Aurelia	3 [ ]
	thin to medium		4 [ ]
	medium	ALJC-01	5 [ ]
	medium to thick		6 [ ]
	thick		7 [ ]
	thick to very thick		8 [ ]
	very thick		9 [ ]
5.7 (20)	**Fruit: length**		
	very short		1 [ ]
	very short to short		2 [ ]
	short	Sevangel	3 [ ]
	short to medium		4 [ ]
	medium	ALJC-01	5 [ ]
	medium to long		6 [ ]
	long	Gran Victoria	7 [ ]
	long to very long		8 [ ]
	very long		9 [ ]
5.8 (23)	**Fruit: length of peduncle**		
	very short		1 [ ]
	very short to short		2 [ ]
	short	Doña Aurelia, Gran Victoria	3 [ ]
	short to medium		4 [ ]
	medium	ALJC-01, Sevangel	5 [ ]
	medium to long		6 [ ]
	long		7 [ ]
	long to very long		8 [ ]
	very long		9 [ ]

	Characteristics	Example Varieties	Note
5.9 (25)	**Seed: length**		
	short	Ladda 1	1 [ ]
	short to medium		2 [ ]
	medium	Gran Victoria, Sevangel	3 [ ]
	medium to long		4 [ ]
	long	Don Rafael	5 [ ]
5.10 (30)	**Endocarp: glossiness**		
	absent	Doña Aurelia, Gran Victoria, Sevangel	1 [ ]
	present	ALJC-01, Don Rafael	9 [ ]

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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	Characteristic(s) in which your candidate variety differs	Describe the expression of the characteristic(s) for the	Describe the expression of the characteristic(s) for **your**
Example	*Seed: length*	*short*	*long*

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

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

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:

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 [ ]	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”.

.....

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]