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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

SESAME

(*Sesamum indicum* L.)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*to be considered by the
Technical Working Party for Agricultural Crops at its thirty -second session
to be held in Tsukuba, Japan, from September 8 to 12, 2003*

Alternative Names: *

<i>Latin</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Sesamum indicum</i> L.	Sesame	Sésame	Sesam	Sésamo

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated "TGP" documents.

{ Other associated UPOV 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 *Sesamum indicum* 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 seed.

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

20gr.

2.4 The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.

2.5 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.6 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 *Duration of Tests*

The minimum duration of tests should normally be two independent growing cycles.

3.2 *Testing Place*

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be observed at that place, the variety may be tested at an additional place.

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.

3.3.1x Stage of development for the assessment

The optimum stage of development for the assessment of each characteristic is indicated by a number in the second column of the Table of Characteristics. The stages of development denoted by each number are described at the end of Chapter 8.

3.3.2 Type of observation – visual or measurement

The recommended method of observing the characteristic is indicated by the following key in the second column of the Table 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]

3.3.3 Type of plot for observation

The recommended type of plot in which to observe the characteristic is indicated by the following key in the second column of the Table of Characteristics:

A: spaced plants

B: row plot

C: special test]

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 50 plants, which should be divided between two replicates].

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 *Number of Plants/Parts of Plants to be Examined*

Unless otherwise indicated, all observations should be made on 20 plants or parts taken from each of 20 plants.

3.6 *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 minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any difference in a characteristic is sufficiently consistent.

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.

4.2 *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 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 50 plants, 3 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 tested, either by growing a further generation, or by testing a new seed stock to ensure that it exhibits the same characteristics as those shown by the previous 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 is 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 others 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 trials so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

- (a) Plant: growth habit (characteristic 1)
- (a) Leaf blade: length/width ratio (characteristic 10)
- (b) Flowering stem: number of flowers per leaf axil (characteristic 17)
- (c) Capsule: number of carpels (characteristic 22)
- (b) Capsule: dehiscence at ripening (characteristic 27)
- (c) Seed coat: color (characteristic 28)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

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*

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.

6.3 *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 Section 6.1.2

(QL) Qualitative characteristic –see Section 6.3

(QN) Quantitative characteristic –see Section 6.3

(PQ) Pseudo-qualitative characteristic –see Section 6.3

(a) –(x) See Explanations on the Table of Characteristics in Chapter 8, Section 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8, Section 8.2

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

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
1.		Plant: growth habit						
		indeterminate						1
		determinate						2
2.		Plant: branching						
		absent						1
		present						9
3.		Plant: position of branches						
		basal only						1
		upper half only						2
4.		Stem: number of nodes to 1st flower						
		few						3
		medium						5
5.		Stem: pubescence						
		absent or very weak						1
		weak						3
		medium						5
		strong						7
		very strong						9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
6.		Stem:length(at startofflowering)						
		short						3
		medium						5
		long						7
7.		Stem:fasciation						
		absent						1
		present						
8.		Leafblade:length						
		short						3
		medium						5
		long						7
9.		Leafblade:width						
		narrow						3
		medium						5
		broad						7
10.		Leafblade:length/widthratio						
		small						3
		medium						5
		large						7
11. (+)		Leafblade:degree oflobing					<u>TOBE DISCUSSED(see explanation)</u>	
		weak						3
		medium						5
		strong						7

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
12.		Leafblade:green color					
		light					3
		medium					5
		dark					7
13.		Leafblade:anthocyanin coloration					
		absent					1
		present					9
14.		Leafblade:enations on lowerside					
		absent					1
		present					9
15.		Petiole:length					
		short					3
		medium					5
		long					7
16.		Petiole:anthocyanin coloration					
		absent					1
		present					9
17.		Floweringstem: number of flowers per leaf axil					
		one					1
		more than one					2

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
18.		Flowering stem: nectaries						
		absent						1
		present						9
19.		Flower: pink color at outside of corolla						
		light						3
		medium						5
		dark						7
20.		Flower: pink color at inner side of lower lip						
		absent or very light						1
		light						3
		medium						5
		dark						7
		very dark						9
21.		Flower: pubescence of corolla						
		absent or very weak						1
		weak						3
		medium						5
		strong						7
		very strong						9
22.		Capsule: number of carpels						
		two						1
		more than two						2

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
23.		Capsule:length						
		short						3
		medium						5
		long						7
24.		Capsule:maximum width						
		narrow						3
		medium						5
		broad						7
25.		Capsule: pubescence						
		absent or very weak						1
		weak						3
		medium						5
		strong						7
		very strong						9
26.		Capsule: anthocyanin coloration						
		absent						1
		present						9
27.		Capsule: dehiscence at ripening						
		absent						1
		present						9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
28.	Seedcoat:color						
		white					1
		grey					2
		yellow					3
		brown					4
		black					5
29.	Seedcoat:intensity of color (varieties with black coat excluded)						
		light					3
		medium					5
		dark					7
30.	Seedcoat:relief						
		smooth					1
		rough					2
31.	Time of beginning of flowering						
		early					3
		medium					5
		late					7
32.	Time of ripening						
		early					3
		medium					5
		late					7

8. ExplanationsontheTableofCharacteristics

8.1 *Explanationscoveringseveralcharacteristics*

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

- (a)
- (b) etc.

8.2 *Explanationforindividualcharacteristics*

Ad.11:Leafblade:degreeoflobing

Description of the leaf shape is very difficult because of the gradual change of shape along the stem. Leaves become narrower towards the apex of the plant. The use of a fixed leaf (for instance the 5th leaf from the bottom) was found impossible. The only way seems to be to give a general impression in terms of "degree of lobing" of a "typical" leaf in the middle of the stem.

9. Literature

{xx}

10. TechnicalQuestionnaire

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
		Applicationdate: (nottobefilledinbytheapplicant)
TECHNICALQUESTIONNAIRE tobecompletedinconnectionwithanapplicationforplantbreeders'rights		
1. SubjectoftheTechnicalQuestionnaire		
1.1 LatinName	<input type="text" value="SesamumindicumL."/>	
1.2 CommonName	<input type="text" value="Sesame"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
TelephoneNo.	<input type="text"/>	
FaxNo.	<input type="text"/>	
E-mailaddress	<input type="text"/>	
Breeder(ifdifferentfrom applicant)	<input type="text"/>	
3. Proposeddenominationandbreeder'sreference		
Proposeddenomination (ifavailable)	<input type="text"/>	
Breeder'sreference	<input type="text"/>	

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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4. Informationonthebreedingschemeandpropagationofthevariety

4.1 Breedingscheme

Varietyresultingfrom:

4.1.1 Crossing

- (a) controlledcross
 (pleasestateparentvarieties)
- (b) partiallyknowncross
 (pleasestateknownparentvariety(ies))
- (c) totallyunknowncross

4.1.2 Discovery (pleasestatewhere,whenandhowdeveloped)

4.1.3 Other (pleaseprovidedetails)

4.2 Methodofpropagatingthevariety

5. Characteristics of the variety to be indicated (the number in brackets refers to the correspondingcharacteristicinTestGuidelines;pleasemarkthenotewhichbestcorresponds).

Characteristics	ExampleVarieties	Note
5.1 Plant:growthhabit (1)	indeterminate	1 <input type="checkbox"/>
	determinate	2 <input type="checkbox"/>
5.2 Floweringstem:numberofflowersperleafaxil (17)	one	1 <input type="checkbox"/>
	morethanone	2 <input type="checkbox"/>
5.3 Capsule:numberofcarpels (22)	two	1 <input type="checkbox"/>
	morethantwo	2 <input type="checkbox"/>

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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	Characteristics	ExampleVarieties	Note
5.4	Capsule:dehiscenceat ripening		
(27)		absent	1[]
		present	9[]
5.5	Seedcoat:color		
(28)		white	1[]
		grey	2[]
		yellow	3[]
		brown	4[]
		black	5[]

6. Similarvarietiesanddifferencesfromthesevarieties

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

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

Comments:

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes No

(If yes, please provide details)

7.2 Special conditions for the examination of the variety

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

Yes No

7.2.2 If yes, please give details:

7.3 Other information

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.

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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9. Informationonplantmaterialtobeexamined.

9.1 Theexpressionofach aracteristicorseveralcharacteristicsofavarietymaybeaffectedbyfactors,suchaspestsanddisease,chemicaltreatment(e.g. growthretardantsorpesticides),effectsof tissue culture, differentrootstocks, scionstakenfromdifferentgrowth phasesofatree,etc.

9.2 The plant material should not have undergone any treatment which would affect the expressionofthecharacteristicsofthevariety,unlessthecompetentauthoritiesalloworrequest suchtreatment.Iftheplantmaterialhasundergon esuchtreatment,fulldetailsofthetreatment mustbegiven.Inthisrespect,pleaseindicatebelow,tothebestofyourknowledge,iftheplant materialtobeexaminedhasbeensubjectedto:

- | | | |
|--|------------------------------|-----------------------------|
| (a) Microorganisms(e.g. virus,bacteria,phytoplasma) | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (b) Chemicaltreatment(e.g. growthretardantorpesticide) | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (c) Tissueculture | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (d) Otherfactors | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Pleaseprovidedetailsofwhereyouhaveindicated“yes”.

.....

10. Therebydeclarethat,tothebestofmyknowledge,theinformationprovidedinthisform iscorrect:

Applicant'sname

Signature

Date

[Endofdocument]