

TG/SESAME(proj.2) ORIGINAL: English DATE: 2006-06-01

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

SESAME

UPOV code: SESAM_IND

(Sesamum indicum L.)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Israel

to be considered by the Technical Working Party for Agricultural Crops at its thirty-fifth session to be held in Beijing, China, from July 3 to 7, 2006

Alternative Names:*

Botanical name	English	French	German	Spanish
Sesamum indicum L.	Sesame	Sésame	Sesam	Sésamo

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.]

i:\orgupov\shared\tg\sesame\upov_drafts\tg_sesame_proj_2.doc

TABLE OF CONTENTS

1. 2. 3. 31 3.2 3.3 3.4 Number of Plants / Parts of Plants to be Examined4 3.5 3.6 4. ASSE 41 4.2 4.3 5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL 6 6.1 6.2 6.3 6.4 6.5 TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA 7. 8. 8 1 9 10.

PAGE

1. <u>Subject of these Test Guidelines</u>

These Test Guidelines apply to all varieties of Sesamum indicum L.

2. <u>Material Required</u>

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:

20 gr

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. <u>Method of Examination</u>

3.1 Number of Growing Cycles

The minimum duration of tests should normally be two independent 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

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 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.

3.3.3 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]

3.3.4 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 50plants, 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 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.

4.2 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. <u>Grouping of Varieties and Organization of the Growing Trial</u>

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

- (a) Plant: growth habit (characteristic 1)
- (b) Leaf blade: length/width ratio (characteristic 10)
- (c) Flowering stem: number of flowers per leaf axil (characteristic 17)
- (d) Capsule: number of carpels (characteristic 22)
- (e) Capsule: dehiscence at ripening (characteristic 27)
- (f) 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. <u>Introduction to the Table of Characteristics</u>

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 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: single measurement of a group of plants or parts of plants see Chapter 3.3.1
- MS: measurement of a number of individual plants or parts of plants see Chapter 3.3.1
- VG: visual assessment by a single observation of a group of plants or parts of plants Chapter 3.3.1
- VS: visual assessment by observation of individual plants or parts of plants" ee Chapter 3.3.1
- (+) See Explanations on the Table of Characteristics in Chapter 8, Section 8.1

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

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. (*)	VG	Plant: growth habi	t				
PQ		indeterminate				Arawaka	1
		determinate					2
2. (*)	VG	Plant: branching					
PQ		absent				Teras	1
		present				Jori	9
3.	VG	Plant: position of branches					
PQ		basal only				Rush	1
		upper half only				Mafaza Light	2
		basal and upper half				Jori	3
4.	MS	Stem: number of nodes to 1 st flower					
QN		few					3
		medium				Suke No. 5	5
		many				Adi	7
5.	VG	Stem: pubescence					
QN		absent or very weak				Zirra	1
		weak				Yaefuh	3
		medium				Jori	5
		strong				Anna	7
		very strong					9

TG/SESAME(proj.2) Sesame, 2006-06-01 - 9 -

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6.	VG	Stem: length (at start of flowering)					
QN		short					3
		medium					5
		long					7
7.	VS	Stem: fasciation					
QL	(*)	absent				Jori	1
		present				Adi	
8.	MS	Leaf blade: length					
QN		short					3
		medium					5
		long					7
9.	MS	Leaf blade: width					
QN		narrow					3
		medium					5
		broad					7
10. (*)	MS	Leaf blade: length/width ratio					
QN		small					3
		medium					5
		large					7
11.	VG	Leaf blade: degree				TO BE DISCUSSED	
(+)		of lobing				(see explanation)	
QN		weak					3
		medium					5
		strong					7

TG/SESAME(proj.2) Sesame, 2006-06-01 - 10 -

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
12.	VG	Leaf blade: green color					
QN		light					3
		medium					5
		dark					7
13. (*)	VG	Leaf blade: anthoycyanin coloration					
QL		absent					1
		present					9
14. (*)	VG	Leaf blade: enations on lower side					
QL		absent					1
		present					9
15.	MS	Petiole: length					
QN		short					3
		medium					5
		long					7
16. (*)	VG	Petiole: anthocyanin coloration					
QL		absent				Glauca	1
		present				Dalamit	9
17. (*)	MS	Flowering stem: number of flowers per leaf axil					
PQ		one					1
		more than one					2

TG/SESAME(proj.2) Sesame, 2006-06-01 - 11 -

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
18. (*)	VG	Flowering stem: nectaries					
QL		absent				Maporal	1
		present				Exute	9
19.	VG	Flower: pink color at outer side of corolla					
QN		light				Arawaka	3
		medium				Abusnduk	5
		dark				Segaranten	7
20.	VG	Flower: pink color at inner side of lower lip					
QN		absent or very light					1
		light					3
		medium					5
		dark					7
		very dark					9
21.	VG	Flower: pubescence of corolla	e				
QN		absent or very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9
22. (*)	MS	Capsule: number o carpels	f				
PQ		two				Teras	1
		more than two				Adi	2

TG/SESAME(proj.2) Sesame, 2006-06-01 - 12 -

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
23. (*)	MS	Capsule: length					
QN		short					3
		medium					5
		long					7
24. (*)	MS	Capsule: maximum width	l				
QN		narrow					3
		medium					5
		broad					7
25.	VG	Capsule: pubescence					
QN		absent or very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9
26.	VG	Capsule: anthocyanin coloration					
		absent				Arawaka	1
		present				Maporal	9
27. (*)	VG	Capsule: dehiscence at ripening					
QL		absent				Yaefuh	1
		present				Maporal	9

TG/SESAME(proj.2) Sesame, 2006-06-01 - 13 -

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
28. (*)	VG	Seed coat: color					
QL		white					1
		grey				Jasbrouk	2
		yellow				Zirra	3
		brown				Exute	4
		black				Gomi	5
29.	VG	Seed coat: intensity of color (varieties with black coat excluded)					
QN		light					3
		medium					5
		dark					7
30. (*)	VG	Seed coat: relief					
QL		smooth				Karipucha	1
		rough				Exute	2
31. (*)	VG	Time of beginning of flowering					
QN		early					3
		medium					5
		late					7
32.	VG	Time of ripening					
QN		early					3
		medium					5
		late					7

8. <u>Explanations on the Table of Characteristics</u>

8.1 *Explanations for individual characteristics*

Ad. 11: Leaf blade: degree of lobing

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 leave 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.

Possible additional characteristics to be considered:

- Stem: shape in cross section
- Seed: 1000-seed weight

9. <u>Literature</u>

Descriptors for Sesame. International Board for Plant Genetic Resources, Rome, 1981.

Joshi A.B., 1961. Sesamum. Indian Central Oilseeds Committee.Hyderabad-1, India, pp. 109.

Bar-Tel, B. & Zwia Goldberg, 1985. Descriptors for Sesame - A Modified Approach. Sesame and Safflower : Status and Potentials. FAO Plant Production and Protection Paper 66, Rome.

TG/SESAME(proj.2) Sesame, 2006-06-01 - 16 -

10. <u>Technical Questionnaire</u>

TEC	CHNICAL QUESTIONNAIR	Е	Page {x} of {y}	Reference Number:
				Application date: (not to be filled in by the applicant)
			INICAL QUESTIONN tion with an applicatio	VAIRE n for plant breeders' rights
1.	Subject of the Technical Q	uesti	ionnaire	
	1.1 Botanical name	Ses	amum indicum L.	
	1.2 Common name	Ses	same	
2.	Applicant			
	Name			
	Address			
	Telephone No.			
	Fax No.			
	E-mail address			
	Breeder (if different from a	appli	cant)	T
3.	Proposed denomination and	d bre	eeder's reference	
	Proposed denomination (if available)			
	Breeder's reference			

TG/SESAME(proj.2) Sesame, 2006-06-01 - 17 -

TECH	NICAL Q	UESTIONNAIRE Page {x} of {y} Reference	Number:							
[#] 4. Ii	[#] 4. Information on the breeding scheme and propagation of the variety									
4	.1 Breed	ing scheme								
	Varie	ty resulting from:								
	4.1.1	Crossing								
		(a) controlled cross (please state parent varieties)	[]							
		(b) partially known cross (please state known parent variety(ies))	[]							
		(c) unknown cross	[]							
	4.1.2	Discovery and development (please state where and when discovered and how developed)	[]							
	4.1.3	Other (please provide details)	[]							

 $^{^{\#}}$ Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TG/SESAME(proj.2) Sesame, 2006-06-01 - 18 -

TECHNICAL (QUESTIONNAIRE	Page $\{x\}$ of $\{y\}$	Reference Number:				
4.2 Method of propagating the variety							
4.2.1	Seed-propagated var	rieties					
	(a) Self-pollination	n	[]				
	(b) Cross-pollinat (i) population (ii) synthetic	n	[]				
	(c) Hybrid		[]				
	(d) Other (please provid	e details)"	[]				
4.2.3	Other (please provide deta	ils)	[]"				

TG/SESAME(proj.2) Sesame, 2006-06-01 - 19 -

TECH	HNICAL QUESTIONNAIRE	Page $\{x\}$ of $\{y\}$	Reference Number:	
	Characteristics of the variety to sponding characteristic in Test sponds).			
	Characteristics		Example Varieties	Note
5.1 (1)	Plant: growth habit			
	indeterminate		Arawaka	1[]
	determinate			2[]
5.2 (17)	Flowering stem: number of flower	s per leaf axil		
	one			1[]
	more than one			2[]
5.3 (22)	Capsule: number of carpels			
	two		Teras	1[]
	more than two		Adi	2[]
5.4 (27)	Capsule: dehiscence at ripening			
	absent		Yaefuh	1[]
	present		Maporal	9[]
5.5 (28)	Seed coat: color			
	white			1[]
	grey		Jasbrouk	2[]
	yellow		Zirra	3[]
	brown		Exute	4[]
	black		Gomi	5[]

TG/SESAME(proj.2) Sesame, 2006-06-01 - 20 -

TECHNICAL QUESTI	ONNAIRE	Page {x}	of {y}	Reference N	lumber:		
6. Similar varieties and differences from these varieties <i>Please use the following table and box for comments to provide information on how your</i> <i>candidate variety differs from the variety (or varieties) which, to the best of your knowledge,</i> <i>is (or are) most similar. This information may help the examination authority to conduct its</i> <i>examination of distinctness in a more efficient way.</i>							
Denomination(s) of variety(ies) similar to your candidate varietyCharacteristic(s) in which your candidate variety differs from the similar variety(ies)Describe the expression of the characteristic(s)Describe the expression of the characteristic(s)Denomination(s) of variety(ies)Characteristic(s) in which your candidate of the characteristic(s)Describe the expression of the characteristic(s)Variety(ies)variety differs from the similar variety(ies)For the similar 							
			(example to	be inserted)	(example to b	e inserted)	
Comments:							

TG/SESAME(proj.2) Sesame, 2006-06-01 - 21 -

TEC	HNICAL 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	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						
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.

TG/SESAME(proj.2) Sesame, 2006-06-01 - 22 -

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".							
10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:								
	Applicant's name							
	Signa	ature Date						

[End of document]