



**TG/88/5(proj.)**  
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**INTERNATIONAL UNION  
FOR THE PROTECTION  
OF NEW VARIETIES OF  
PLANTS**

**UNION INTERNATIONALE  
POUR LA PROTECTION  
DES OBTENTIONS  
VÉGÉTALES**

**INTERNATIONALER  
VERBAND ZUM SCHUTZ  
VON PFLANZEN-  
ZÜCHTUNGEN**

**UNIÓN INTERNACIONAL  
PARA LA PROTECCIÓN  
DE LAS OBTENCIONES  
VEGETALES**

**DRAFT**

**GUIDELINES**  
**FOR THE CONDUCT OF TESTS**  
**FOR DISTINCTNESS, UNIFORMITY AND STABILITY**

**COTTON**  
**(*Gossypium* L.)**

These Guidelines should be read in conjunction with document TG/1/2, which contains explanatory notes on the general principles on which the Guidelines have been established.

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## I. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Gossypium hirsutum* L. and *Gossypium barbadense* L. lines, hybrids and interspecific hybrid varieties.

## II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from a state other than that in which the testing takes place must make sure that all customs formalities are complied with. The minimum quantity of seed to be supplied by the applicant in one or several samples should be:

3 kg of delinted seed.

If requested, in the case of hybrids and interspecific hybrid varieties, an additional 2 kg of seed of each component should be submitted. The seed should at least meet the minimum requirements for germination capacity, moisture content and purity for marketing certified seed in the country in which the application is made. The germination capacity should be as high as possible.

2. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

## III. Conduct of Tests

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

2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The field tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. Each test should include about 500 plants which should be divided between two or more replicates. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

## IV. Methods and Observations

1. The characteristics described in Chapter VII should be used for the testing of distinctness of lines, hybrids and interspecific hybrid varieties.

2. Unless otherwise indicated, all observations for the assessment of distinctness and stability should be made on 20 plants or parts taken from each of 20 plants.
3. For the assessment of uniformity, population standard of 1 per cent with an acceptance probability of at least 95 per cent should be applied. In the case of a sample size of 500 plants, the maximum number of off-types allowed would be 9.
4. Unless otherwise indicated, all observations on the leaf and on the stem should be made where leaves are fully extended.
5. Unless otherwise indicated, all observations on the fruiting branch should be made at flowering stage on the lowest fruiting branch.
6. All observations on the flower should be made on the first day of flowering.
7. Unless otherwise indicated, all observations on the boll should be made at green maturity.
8. All observations on the seed and the fiber should be made at full maturity.

#### V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:
  - (a) Flower: color of petal (characteristic 1)
  - (b) Leaf: shape (characteristic 11)
  - (c) Leaf: nectaries (characteristic 14)
  - (d) Boll: shape in longitudinal section (characteristic 20)
  - (e) Boll: time of opening (when 50% of the plants have at least one boll opened) (characteristic 27)
  - (f) Fiber: length (characteristic 34)

#### VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.
2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

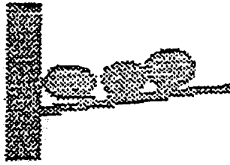
3. Legend:

(\*) Characteristics that should be used on all varieties in every growing period over which examinations are made and always be included in the variety descriptions except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

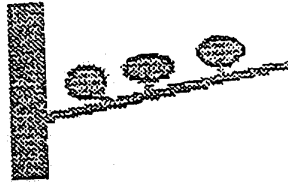
(+) See Explanations on the Table of Characteristics in Chapter VIII.

VIII. Explanations on the Table of Characteristics

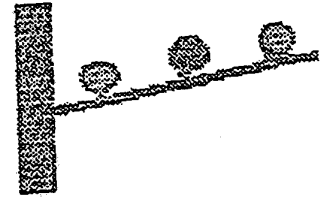
Ad. 6: Plant: type of flowering



1  
clustered

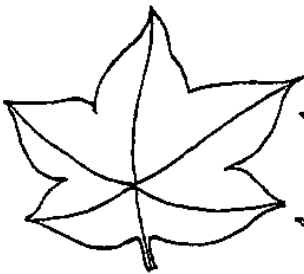


2  
semi-clustered

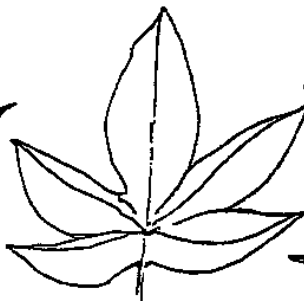


3  
non clustered

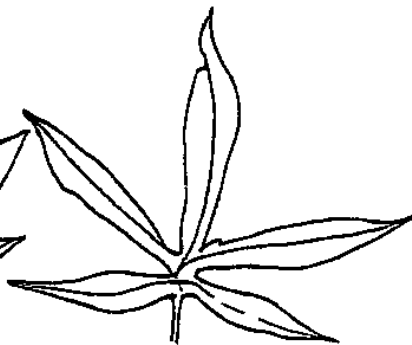
Ad. 11: Leaf: shape



1  
palmate



2  
palmate to digitate

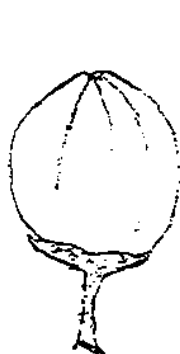


3  
digitate



4  
lanceolate

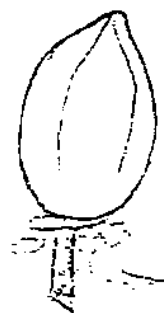
Ad. 20: Boll: shape in longitudinal section



1  
rounded



2  
elliptical



3  
ovate



4  
conical

Ad. 23: Boll: prominence of tip



3  
weak



5  
medium



7  
strong

Ad. 24: Plant: shape



1  
cylindrical

2  
conical

3  
spreading

Ad. 34, 35, 36, 37 and 38: Fiber: length (34), strength (35), elongation (36), fineness (micronaire) (37), length uniformity (38)

Characteristics 34, 35, 36, 37 and 38 should be observed according to:

- Standard Test Methods for Measurement of Cotton Fibres by High Volume Instruments (HVI) (Motion Control Fiber Information System). Designation D-4604-95
- Standard Test Methods for Measurement of Physical Properties of Cotton Fibers by High Volume Instruments (HVI). Designation D-5867-95
- Established by the American Society for Testing and Materials (ASTM)



## IX. Literature

American Society for Testing and Materials (ASTM) (1995): Standard Test

Methods for Measurement of Cotton Fibers by High Volume Instruments (HVI)

(Motion Control Fiber Information System) (Designation: D4604-95)

American Society for Testing and Materials (ASTM) (1995), Standard Test Methods for Measurement of Physical Properties of Cotton Fibers by High Volume Instruments (Designation: D5867-95)

“Cotton”, Ed. R.J. Kohel and C.F. Lewis, no. 24 in the series “Agronomy”, American Society of Agronomy, Inc., Crop Science Society of America, Inc., Soil Science Society of America, Inc., Publishers Madison, Wisconsin, 1984, US.

Manual de Identificación de Variedades de Algodón, Ministerio de Agricultura, Pesca y Alimentación, Secretaria General de Agricultura y Alimentación, 1999, ES.

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
<p style="text-align: center;">TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights</p>	
<p>1. Genus <i>Gossypium</i> L.</p> <p style="text-align: center;">COTTON</p> <p>1.1 <i>Gossypium hirsutum</i> L. [ ]</p> <p>1.2 <i>Gossypium barbadense</i> L. [ ]</p> <p>1.3 Interspecific hybrids (Hybrids of 1.1 and 1.2) [ ]</p> <p>1.4 Others [ ]</p>	
<p>2. Applicant (Name and address)</p>	
<p>3. Proposed denomination or breeder's reference</p>	

4. Information on origin, maintenance and reproduction of the variety

4.1 Type of material:

(a) line

- male sterile line [ ]

- male fertile line [ ]

(b) hybrid [ ]

(c) other (please indicate) [ ]

.....

4.2 Formula (if applicable, for each component in separate sheets, the information according to the following Chapters 5 to 7 to be added)

Single hybrid

- female parental line .....

- male parental line .....

N.B. In case of use of male sterility system, indicate the name of the maintainer line of the female parental line.

4.3 Genetic origin and breeding method

4.4 Other information on origin, maintenance and reproduction of the variety.

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the state of expression which best corresponds).

Characteristics	Example Varieties	Note
<b>5.1 Flower: color of petal (1)</b>		
cream	Crema-111, Zeta 2	1 [ ]
yellow	Acalpi	2 [ ]
<b>5.2 Leaf: shape (11)</b>		
palmate	Crema-111, Zeta 2	1 [ ]
palmate to digitate	Acalpi	2 [ ]
digitate	Sureña	3 [ ]
lanceolate		4 [ ]
<b>5.3 Leaf: nectaries (14)</b>		
absent	Tempra, Xpress	1 [ ]
present	C310, Zeta 2	9 [ ]
<b>5.4 Boll: shape in longitudinal section (20)</b>		
rounded	Lachata, GSA-71	1 [ ]
elliptical		2 [ ]
ovate	Corona, 4S	3 [ ]
conical		4 [ ]
<b>5.5 Boll: time of opening (when 50% of the plants have at least one boll opened) (27)</b>		
very early	Tabladilla 100	1 [ ]
early	Tabladilla 16, Sindos 80	3 [ ]
medium	C-310, Korina	5 [ ]
late	Acala SJ2, Zeta 2	7 [ ]
very late	Acalpi, Vered 171	9 [ ]

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the state of expression which best corresponds).

Characteristics		Example Varieties	Note
<b>5.6 Fiber: length</b> <b>(34)</b>	very short		1 [ ]
	short		3 [ ]
	medium	Crema-111, Sindos 80	5 [ ]
	long	C-310, Zeta 2	7 [ ]
	very long	Ourania	9 [ ]

## 6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different <sup>o)</sup>	State of expression of similar variety	State of expression of candidate variety

<sup>o)</sup> In the case of identical states of expressions of both varieties, please indicate the size of the difference.

