

UPOV

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

DRAFT

HIBISCUS

UPOV Code: HIBIS\_

*(Hibiscus L.)*

## GUIDELINES

## FOR THE CONDUCT OF TESTS

## FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*Prepared by an expert from the Republic of Korea*

*to be considered by the  
 Technical Working Party for Ornamental Plants and Forest Trees  
 at its thirty-seventh session,  
 to be held in Hanover, Germany, from July 12 to 16, 2004*

Alternative Names: \*

<i>Latin</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Hibiscus L.</i>	Hibiscus Rose mallow	Hibiscus	Hibiscus, Roseneibisch	Hibisco

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 guidelines ("Test 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.

\* 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 *Hibiscus* L. of the genus *Hibisceae*.

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 provided in the form of rooted young plants.

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

15 plants

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*

The minimum duration of tests should normally be a single growing cycle.

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 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

### 3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 10 plants.

3.4.2 Pot types: in the case of pot types each test should be designed to result in a total of at least 20 plants for varieties resulting from crossing.

3.4.3 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 10 plants or parts taken from each of 10 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 1% and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 10 plants, 1 off-type is 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 plant 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 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) Flower: type (characteristic 22)
- (c) Flower: color group (main division) (characteristic 24)
  - Gr. 1 white or near white
  - Gr. 2 yellow
  - Gr. 3 orange
  - Gr. 4 pink
  - Gr. 5 light red
  - Gr. 6 medium red
  - Gr. 7 brown
  - Gr. 8 purple

Gr. 9 violet blue  
Gr. 10 silver-grey

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

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>1.</b>	<b>Plant: growth habit</b>					
<b>QL</b>	herbaceous					1
	woody					2
<b>2.</b>	<b>Plant: height</b>					
<b>QN</b>	very short					1
	short					3
	medium					5
	tall					7
	very tall					9
<b>3.</b>	<b>Plant : branching</b>					
<b>QN</b>	sparse					
	medium					
	dense					
<b>4.</b>	<b>Branch : attitude</b>					
<b>QN</b>	upright					1
	horizontal					2
	downward					3
<b>5.</b>	<b>Branch : color</b>					
<b>PQ</b>	yellow green					1
	green					2
	greenish brown					3
	brown					4
<b>6.</b>	<b>Branch : hair</b>					
<b>QL</b>	absent					1
	present					9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>7.</b>	<b>Leaf blade : length</b>					
<b>QN</b>	(a) short					3
	medium					5
	long					7
<b>8.</b>	<b>Leaf blade : width</b>					
<b>QN</b>	(a) narrow					3
	medium					5
	broad					7
<b>9.</b>	<b>Leaf blade : intensity of color on green upper side</b>					
<b>QN</b>	(a) very light					1
	light					3
	medium					5
	dark					7
	very dark					9
<b>10.</b>	<b>Leaf blade : variegation</b>					
<b>QL</b>	(a) absent					1
	present					9
<b>11.</b>	<b>Leaf blade : color of variegation</b>					
<b>PQ</b>	(a) white					1
	yellow					2
	yellow green					3
<b>12.</b>	<b>Leaf blade : hair</b>					
<b>QL</b>	(a) absent					1
	present					9



	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>13.</b>	<b>Leaf blade : shape</b>					
<b>PQ</b>	(a) elliptical					1
	ovate					2
	obvate					3
	round					4
	haert					5
<b>14.</b>	<b>Leaf blade : shape of base</b>					
<b>PQ</b>	(a) cuneate					1
	truncate					2
	rounded					3
	cordate					4
	wedged					5
<b>15.</b>	<b>Leaf blade : shape of apex</b>					
<b>PQ</b>	(a) acute					1
	broad acute					2
	rounded					3
<b>16.</b>	<b>Leaf blade : undulation of margin</b>					
<b>QL</b>	(a) absent					1
	present					9
<b>17.</b>	<b>Leaf blade : incisions of margin</b>					
<b>QL</b>	(a) absent					1
	present					9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>18</b>	<b>Leaf blade : type of incisions of margin</b>					
	(a)	serrate				1
<b>QL</b>		biserrate				2
		dentate				3
		bidentate				4
		crenate				5
		bicrenate				6
<b>19.</b>	<b>Leaf blade : depth of incisions of margin</b>					
<b>QN</b>	(a)	shallow				3
		medium				5
		deep				7
<b>20.</b>	<b>Leaf blade : lobing</b>					
<b>QL</b>	(a)	absent				1
		present				9
<b>21.</b>	<b>Leaf blade : intensity of lobing</b>					
<b>QN</b>	(a)	weak				3
		medium				5
		strong				7
<b>22.</b>	<b>Flower : type</b>					
(+)	(b)	single				1
<b>QL</b>		semi double				2
		double				3
<b>23.</b>	<b>Flower: diameter</b>					
<b>QN</b>	(b)	small				3
		medium				5
		large				7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>24.</b>	<b>Flower: color group</b>					
<b>PQ</b>	(b) white or near white					1
	yellow					2
	orange					3
	pink					4
	light red					5
	medium red					6
	brown					7
	purple					8
	violet blue					9
	silver grey					10
<b>25.</b>	<b>Flower : number of colors</b>					
<b>QL</b>	(b) monicolor					1
	two					2
	more than two					3
<b>26.</b>	<b>Flower : overlapping of petals</b>					
<b>QN</b>	(b) absent or very weak					1
(+)	weak					3
	medium					5
	strong					7
	very strong					9
<b>27.</b>	<b>Flower : fragrance</b>					
	(b) absent					1
<b>QL</b>	present					9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>28.</b>	<b>Petal : length</b>					
<b>QN</b>	(b) short					3
	medium					5
	long					7
<b>29.</b>	<b>Petal : width</b>					
<b>QN</b>	(b) narrow					3
	medium					5
	broad					7
<b>30.</b>	<b>Petal : shape</b>					
<b>PQ</b>	(b) narrow ovate					1
	fan					2
	spoon					3
<b>31.</b>	<b>Petal : color of upper side(excluding eye zone)</b>					
<b>QL</b>	(b) absent					1
	present					9
<b>32.</b>	<b>Petal : color of eye zone</b>					
<b>PQ</b>	(b) RHS Colour Chart (indicate reference number)					
<b>33.</b>	<b>Petal : size of eye zone</b>					
<b>QN</b>	(b) small					3
	medium					5
	large					7
<b>34.</b>	<b>Petal : Pattern</b>					
<b>QL</b>	(b) spotted					1
	blotch					2
	streaked					3
	on margins					4

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>35.</b>	<b>Petal : color of spot</b>					
<b>PQ</b>	(b) RHS Colour Chart (indicate reference number)					
<b>36.</b>	<b>Petal : color of blotch</b>					
<b>PQ</b>	(b) RHS Colour Chart (indicate reference number)					
<b>37.</b>	<b>Petal : color of streak</b>					
<b>PQ</b>	(b) RHS Colour Chart (indicate reference number)					
<b>38.</b>	<b>Petal : color of margin</b>					
<b>PQ</b>	(b) RHS Colour Chart (indicate reference number)					
<b>39.</b>	<b>Petal: color of lower side</b>					
<b>PQ</b>	(b) RHS Colour Chart (indicate reference number)					
<b>40</b>	<b>Petal : Serration</b>					
<b>QN</b>	(b) absent or very weak					1
	weak					3
	medium					5
	strong					7
<b>41.</b>	<b>Petal :undulation of margin</b>					
<b>QN</b>	(b) absent or very weak					1
	weak					3
	medium					5
	strong					7
<b>42.</b>	<b>Petal : fading of color</b>					
<b>QL</b>	absent					1

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
	present					9
<b>43.</b>	<b>Staminal column : length</b>					
<b>QN</b>	(b) short					3
	medium					5
	long					7
<b>44.</b>	<b>Stigma: color</b>					
<b>PQ</b>	(b) RHS Colour Chart (indicate reference number)					
<b>45.</b>	<b>Column: color</b>					
<b>PQ</b>	(b) RHS Colour Chart (indicate reference number)					
<b>46.</b>	<b>Time of flowering</b>					
<b>QN</b>	very early					1
	early					3
	medium					5
	late					7
	very late					9

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

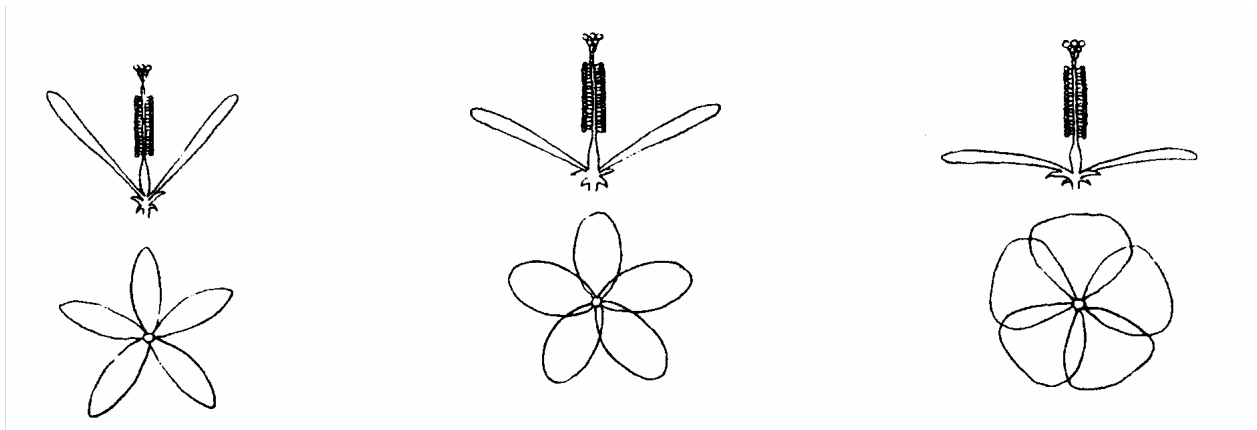
Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

- (a) Observations on the leaves which should be made on fully developed leaves on the middle third of the stem.
- (b) Observations on the flower and flower parts which should be made on a fully opened flower.

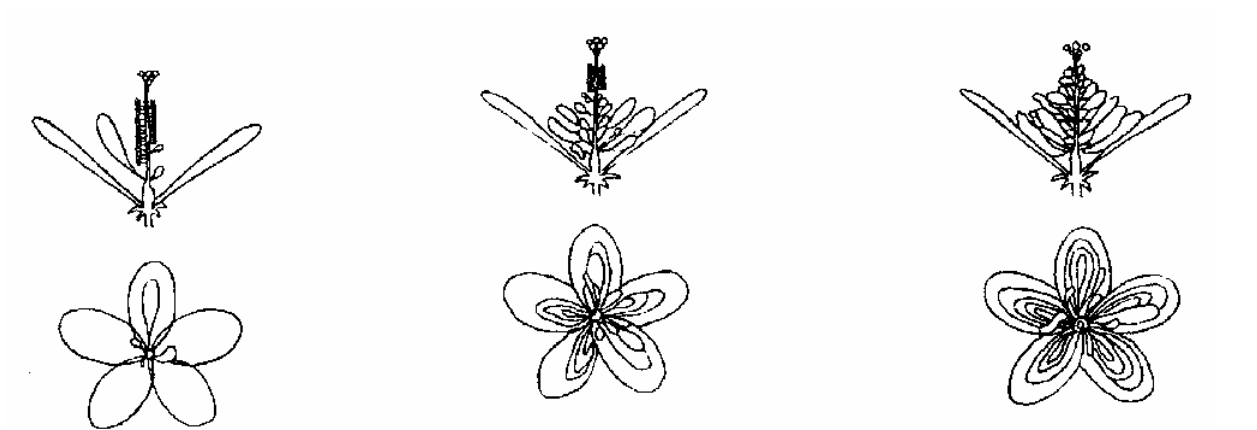
8.2 *Explanations for individual characteristics*

Ad. 22. Flower: type

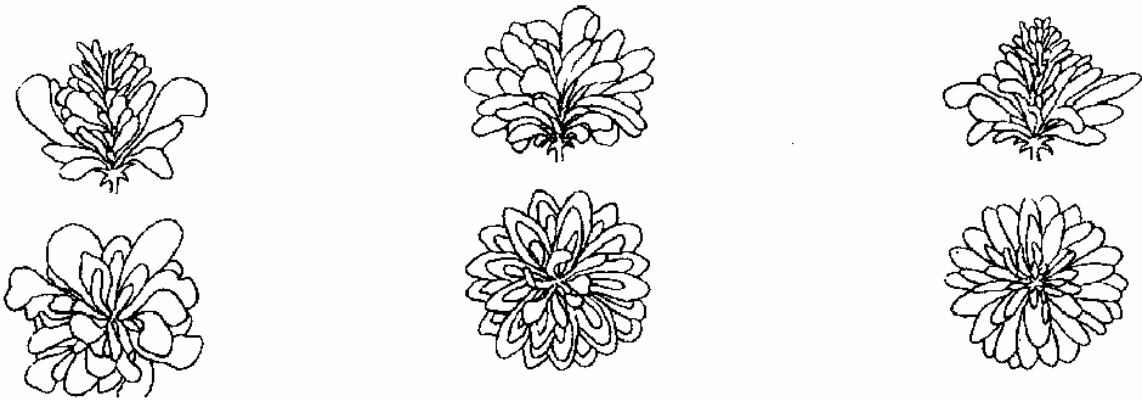
1. single



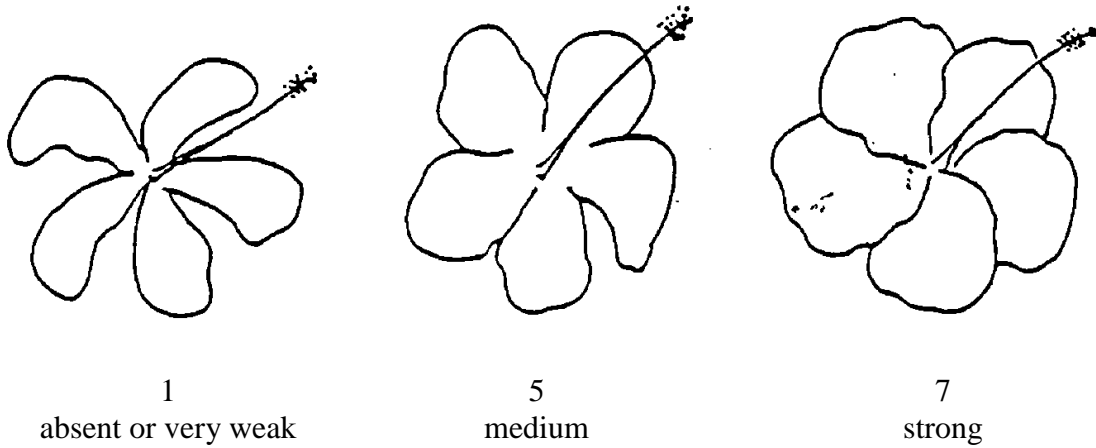
2. semi-double



3. double



Ad. 26: Flower: overlapping of petals

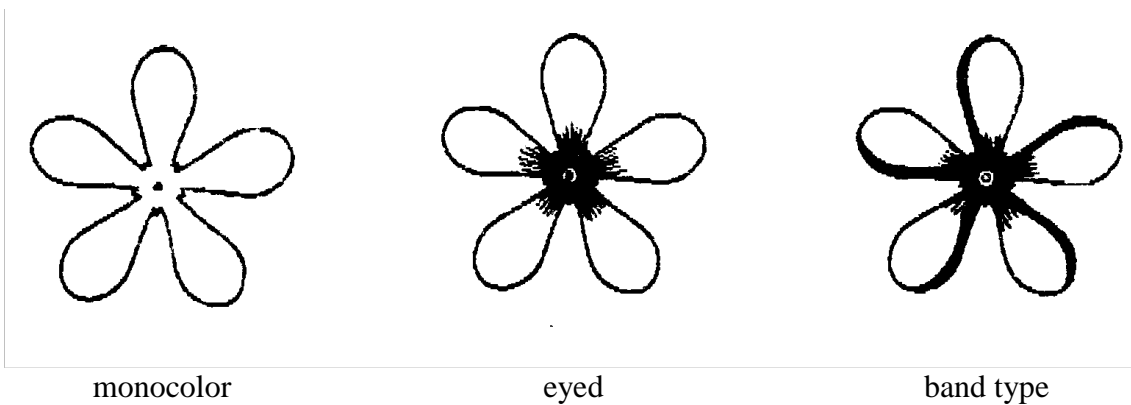


1  
absent or very weak

5  
medium

7  
strong

Ad 31: Petal : pattern of color



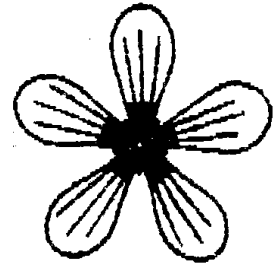
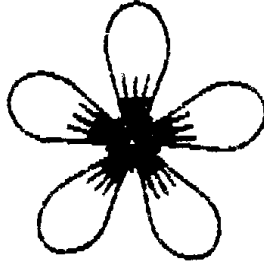
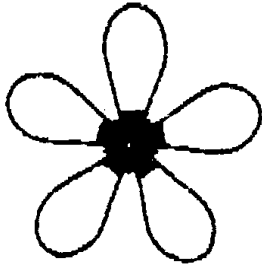
monocolor

eyed

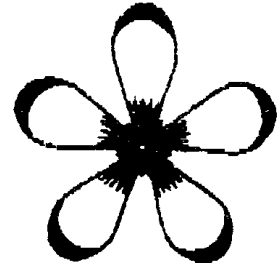
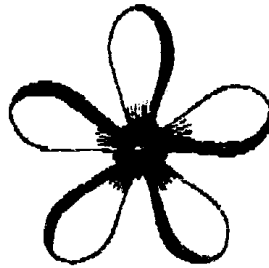
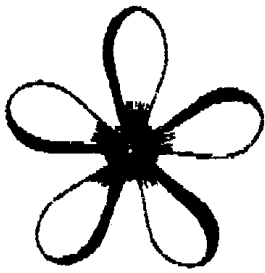
band type



※ eyed type



※ band type



9. Literature

[to be provided]

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
<b>TECHNICAL QUESTIONNAIRE</b> to be completed in connection with an application for plant breeders' rights		
1. Subject of the Technical Questionnaire		
1.1	<i>Latin Name</i>	<input type="text" value="Hibiscus L."/>
1.2	Common Name	<input type="text" value="Hibiscus"/>
2. Applicant		
	Name	<input type="text"/>
	Address	<input type="text"/>
	Telephone No.	<input type="text"/>
	Fax No.	<input type="text"/>
	E-mail address	<input type="text"/>
	Breeder (if different from applicant)	<input type="text"/>

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

#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)
- (b) partially known cross   
(please state known parent variety(ies))
- (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)

4.2 Method of propagating the variety

- (a) grafting
- (b) cuttings
- (c) other   
(please provide details)

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# 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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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 Plant : Growth habit</b>		
(1) herbaceous		1[ ]
woody		2[ ]
<b>5.2 Flower : type</b>		
(22) single		1[ ]
Semi-double		2[ ]
double		3[ ]
<b>5.2 Flower: color group</b>		
(24) white or near white		1[ ]
yellow		2[ ]
orange		3[ ]
pink		4[ ]
light-red		5[ ]
red		6[ ]
brown		7[ ]
purple		8[ ]
violet-blue		9[ ]
Silver-gray		10[ ]

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>	<i>Plant: height</i>	<i>short</i>	<i>tall</i>

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 Special conditions for the examination of the variety</p> <p>7.2.1 Are there any special conditions for growing the variety or conducting the examination?</p> <p>Yes [ ] No [ ]</p> <p>If yes, please give details:</p> <p>7.3 Use:</p> <p>(a) grown in the open: garden</p> <p>(b) grown under glass or other protection : pot type</p> <p>7.4 Other information</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.

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 or pesticide) | Yes [ ] | No [ ] |
| (c) Tissue culture  | Yes [ ] | No [ ] |
| (d) Other factors   | Yes [ ] | No [ ] |

Please provide details of 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

[Annex follows]

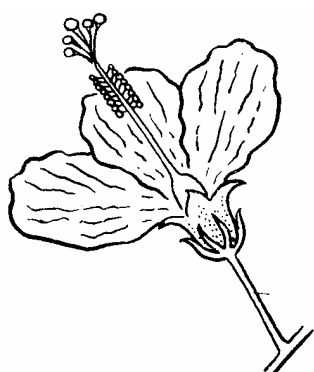


ANNEX

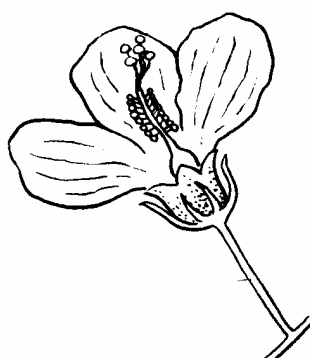
Table 1. The number of chromosome in some genus *Hibisceae*

Name of species	No. of chromosome (2n)	Name of species	No. of chromosome (2n)
<i>H. syriacus</i>	80	<i>H. surallensis</i>	36
<i>H. acetosella</i>	72	<i>H. aculeatus</i>	72
<i>H. asper</i>	72	<i>H. bifureatus</i>	72
<i>H. cannabinus</i>	36	<i>H. diversifolius</i>	144
<i>H. meeusei</i>	72	<i>H. radiatus</i>	72
<i>H. rostellatus</i>	72	<i>H. sabdariffa</i>	72
<i>H. costatus</i>	36	<i>H. furcellatus</i>	72
<i>H. abelmoschus</i>	72	<i>H. calypheyllus</i>	80
<i>H. coccineus</i>	38	<i>H. denisonii</i>	84
<i>H. lasiocarpus</i>	38	<i>H. indwigii</i>	40
<i>H. manihot</i>	60,66,68	<i>H. militaris</i>	38
<i>H. moscheutos</i>	38	<i>H. pedunculatus</i>	30
<i>H. rosa sinensis</i>	92,144,168	<i>H. tiliaceus</i>	80,96
<i>H. mutabilis</i>	92	<i>H. trionum</i>	56
<i>H. waimeae</i>	84		

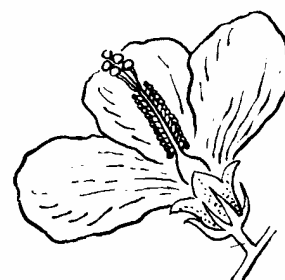
➤ Flower



*H. rosa-sinensis* L.  
Chinese Hibiscus

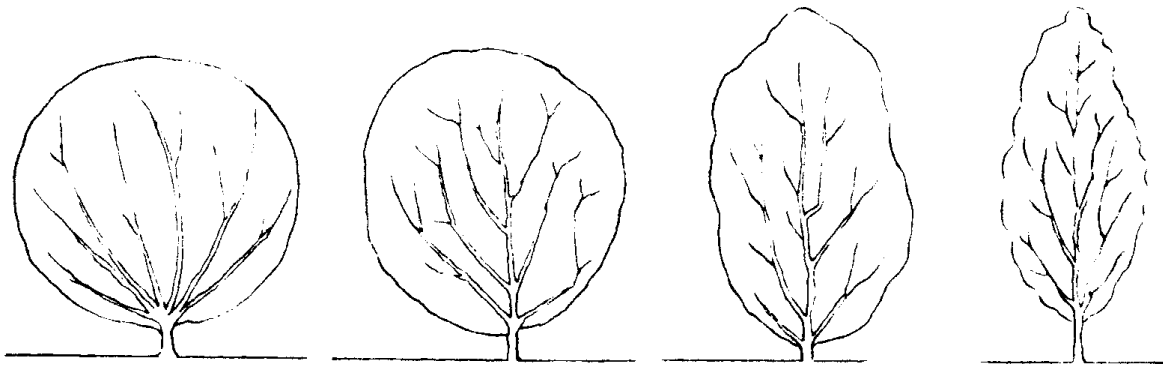


*H. mutabilis* L.  
Cotton Rose



*H. syriacus* L.  
Rose of Sharon

➤ Tree form



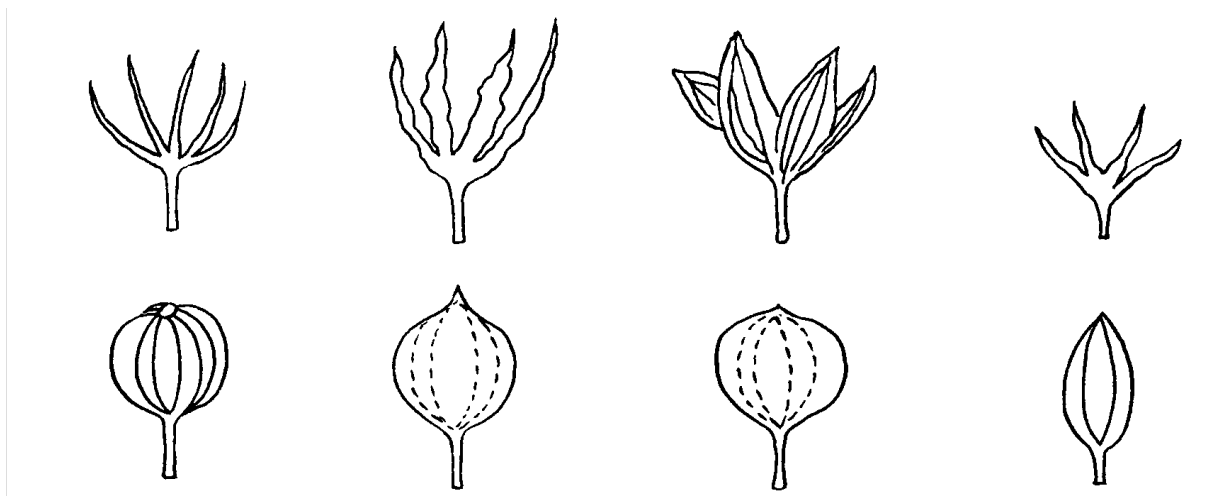
H. mutabilis L.  
Cotton Rose

H. para-mutabilis  
-

H. sinosyrriacus  
-

H. syriacus L.  
Rose of Sharon

➤ Epicalyx and seed



H. mutabilis L.  
Cotton Rose

H. para-mutabilis  
-

H. sinosyrriacus  
-

H. syriacus L.  
Rose of Sharon

[End of document]