

**UPOV**

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

GENEVA

**DRAFT**

**ELATIOR BEGONIA**

UPOV Code: BEGON\_HIE

*Begonia x hiemalis* Fotsch

**GUIDELINES**

**FOR THE CONDUCT OF TESTS**

**FOR DISTINCTNESS, UNIFORMITY AND STABILITY**

*prepared by an expert from Germany*

*to be considered by the  
Technical Working Party for Ornamental Plants and Forest Trees  
at its thirty-eighth session,  
to be held in Seoul, Republic of Korea, from September 12 to 16, 2005*

Alternative Names: \*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Begonia x hiemalis</i> Fotsch, <i>Begonia Elatior Hybridae</i>	Elatior Begonia, Winter-flowering begonia	Bégonia elatior	Elatior-Begonie	Begonia elatior

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](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 *Begonia x hiemalis* Fotsch, of the family *Begoniaceae*.

## 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 rooted young plants produced from terminal cuttings.

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

20 rooted young plants produced from terminal cuttings

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. Three weeks after potting the plants should receive a short day treatment for two weeks. The day length during the short day treatment should be 9 hours.

3.3.2 The optimum stage of development for the assessment of the characteristics is at the time of full flowering.

3.3.3 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 20 plants.

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 on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observations made on all plants in the test.

### 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 20 plants, 2 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 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) Flower: type (characteristic 15)
- (b) Flower: number of colours (characteristic 19)
- (c) Inner petal: colour of middle of upper side (characteristic 24) with the following groups:
  - Gr. 1: white
  - Gr. 2: yellow
  - Gr. 3: orange
  - Gr. 4: red
  - Gr. 5: red pink
  - Gr. 6: blue pink

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 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

(a), (b), (c) See Explanations on the Table of Characteristics in Chapter 8.1.

(+) See Explanations on the Table of Characteristics in Chapter 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: height (including flowers)</b>		<b>Pflanze: Höhe (einschließlich Blüten)</b>			
<b>QN</b>	very short		sehr niedrig			1
	short		niedrig			3
	medium		mittel			5
	tall		hoch			7
	very tall		sehr hoch			9
<b>2. (*)</b>	<b>Plant: width (including flowers)</b>		<b>Pflanze: Breite (einschließlich Blüten)</b>			
<b>QN</b>	very narrow		sehr schmal			1
	narrow		schmal			3
	medium		mittel			5
	broad		breit			7
	very broad		sehr breit			9
<b>3.</b>	<b>Petiole: anthocyanin coloration on upper side</b>		<b>Blattstiel: Anthocyanfärbung auf der Oberseite</b>			
<b>QN</b>	<b>(a)</b> absent or very weak		fehlend oder sehr gering			1
	weak		gering			3
	medium		mittel			5
	strong		stark			7
	very strong		sehr stark			9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>4.</b> (*) (+)	<b>Leaf blade: length of midrib</b>	<b>Blattspreite: Länge der Mittelrippe</b>			
<b>QN</b>	(a) very short	sehr kurz			1
	short	kurz			3
	medium	mittel			5
	long	lang			7
	very long	sehr lang			9
<b>5.</b> (*) (+)	<b>Leaf blade: width</b>	<b>Blattspreite: Breite</b>			
<b>QN</b>	(a) very narrow	sehr schmal			1
	narrow	schmal			3
	medium	mittel			5
	broad	breit			7
	very broad	sehr breit			9
<b>6.</b> (*)	<b>Leaf blade: color of <u>upper</u> side</b>	<b>Blattspreite: Farbe der <u>Oberseite</u></b>			
<b>PQ</b>	(a) light green	hellgrün			1
	medium green	mittelgrün			2
	dark green	dunkelgrün			3
	reddish green	rötlich grün			4
<b>7.</b>	<b>Leaf blade: color of <u>lower</u> side</b>	<b>Blattspreite: Farbe der <u>Unterseite</u></b>			
<b>PQ</b>	(a) light green	hellgrün			1
	medium green	mittelgrün			2
	dark green	dunkelgrün			3
	red and green	rot und grün			4
	reddish brown	rötlich braun			5



	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>8.</b>	<b>Leaf blade: glossiness of lower side</b>		<b>Blattspreite: Glanz der Unterseite</b>			
<b>QN</b>	<b>(a)</b>					
		absent or very weak	fehlend oder sehr gering			1
		weak	gering			3
		medium	mittel			5
		strong	stark			7
		very strong	sehr stark			9
<b>9.</b> <b>(+)</b>	<b>Leaf blade: base</b>		<b>Blattspreite: Basis</b>			
<b>QN</b>	<b>(a)</b>					
		wide open	weit offen			1
		moderately open	mäßig offen			3
		closed	geschlossen			5
		slightly overlapping	gering überlappend			7
		strongly overlapping	stark überlappend			9
<b>10.</b>	<b>Leaf blade: width of apex</b>		<b>Blattspreite: Breite der Spitze</b>			
<b>QN</b>	<b>(a)</b>					
		narrow	schmal			3
		medium	mittel			5
		broad	breit			7
<b>11.</b>	<b>Leaf blade: depth of incisions of margin</b>		<b>Blattspreite: Tiefe der Randeinschnitte</b>			
<b>QN</b>	<b>(a)</b>					
		absent or very shallow	fehlend oder sehr flach			1
		shallow	flach			3
		medium	mittel			5
		deep	tief			7
		very deep	sehr tief			9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>12.</b>	<b>Leaf blade: undulation of margin</b>		<b>Blattspreite: Randwellung</b>			
<b>QN</b>	<b>(a)</b>					
	absent or very weak		fehlend oder sehr gering			1
	weak		gering			3
	medium		mittel			5
	strong		stark			7
	very strong		sehr stark			9
<b>13.</b>	<b>Bract: size</b>		<b>Hochblatt: Größe</b>			
<b>QN</b>	<b>(b)</b>					
	small		klein			3
	medium		mittel			5
	large		groß			7
<b>14.</b>	<b>Bract: color</b>		<b>Hochblatt: Farbe</b>			
<b>QL</b>	<b>(b)</b>					
	green		grün			1
	red and green		grün und rot			2
	red		rot			3
<b>15.</b>	<b>Flower: type</b>		<b>Blüte: Typ</b>			
<b>(*)</b>						
<b>(+)</b>						
<b>QL</b>						
	single		einfach			1
	double		gefüllt			2
<b>16.</b>	<b><u>Only varieties with double flowers:</u> Flower: number of petals</b>		<b><u>Nur Sorten mit gefüllten Blüten:</u> Blüte: Anzahl Blütenblätter</b>			
<b>(*)</b>						
<b>QN</b>						
	few		gering			3
	medium		mittel			5
	many		hoch			7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>17.</b> (*) (+)	<b>Flower: length</b>		<b>Blüte: Länge</b>			
<b>QN</b>	short		kurz			3
	medium		mittel			5
	long		lang			7
<b>18.</b> (*) (+)	<b>Flower: width</b>		<b>Blüte: Breite</b>			
<b>QN</b>	narrow		schmal			3
	medium		mittel			5
	broad		breit			7
<b>19.</b> (+) (*)	<b>Flower: number of colors</b>		<b>Blüte: Anzahl Farben</b>			
<b>QL</b>	one		eine			1
	two		zwei			2
	more than two		mehr als zwei			3
<b>20.</b> (*)	<b>Outer petal: color of <u>margin</u> of upper side</b>		<b>Äußeres Blütenblatt: Farbe des <u>Randes</u> der Oberseite</b>			
<b>PQ</b>	RHS Colour Chart (indicate reference number)		RHS-Farbkarte (Nummer angeben)			
<b>21.</b> (*)	<b>Outer petal: color of <u>middle</u> of upper side</b>		<b>Äußeres Blütenblatt: Farbe der <u>Mitte</u> der Oberseite</b>			
<b>PQ</b>	RHS Colour Chart (indicate reference number)		RHS-Farbkarte (Nummer angeben)			

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>22.</b>	<b>Outer petal: incisions of margin</b>		<b>Äußeres Blütenblatt: Randeinschnitte</b>			
<b>QN</b>	absent or very shallow		fehlend oder sehr flach			1
	shallow		flach			3
	medium		mittel			5
	deep		tief			7
<b>23. (* )</b>	<b>Inner petal: color of <u>margin</u> of upper side</b>		<b>Inneres Blütenblatt: Farbe des <u>Randes</u> der Oberseite</b>			
<b>PQ</b>	(c) RHS Colour Chart (indicate reference number)		RHS-Farbkarte (Nummer angeben)			
<b>24. (* )</b>	<b>Inner petal: color of <u>middle</u> of upper side</b>		<b>Inneres Blütenblatt: Farbe der <u>Mitte</u> der Oberseite</b>			
<b>PQ</b>	(c) RHS Colour Chart (indicate reference number)		RHS-Farbkarte (Nummer angeben)			
<b>25. (* )</b>	<b>Inner petal: color <u>middle</u> of lower side</b>		<b>Inneres Blütenblatt: Farbe der <u>Mitte</u> der Unterseite</b>			
<b>PQ</b>	(c) RHS Colour Chart (indicate reference number)		RHS-Farbkarte (Nummer angeben)			
<b>26.</b>	<b>Inner petal: incisions of margin</b>		<b>Inneres Blütenblatt: Randeinschnitte</b>			
<b>QN</b>	(c) absent or very shallow		fehlend oder sehr flach			1
	shallow		flach			3
	medium		mittel			5
	deep		tief			7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>27.</b>	<b>Inner petal: undulation of margin</b>		<b>Inneres Blütenblatt: Wellung des Randes</b>			
<b>QN</b>	(c)	absent or very weak		fehlend oder sehr gering		1
		weak		gering		3
		medium		mittel		5
		strong		stark		7
		very strong		sehr stark		9

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

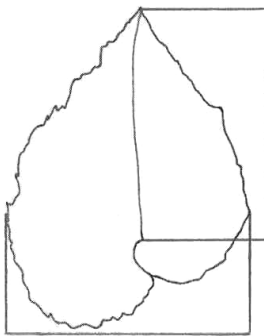
Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

- (a) Leaf and petiole: observations on the leaf and the petiole should be made on a fully developed leaf from the middle part of the plant.
- (b) Bract: observations on the bract should be made on a fully developed bract from a fully developed inflorescence.
- (c) Inner petal: observations on the inner petal should be made on a fully developed petal from the second outer row of the inner petals.

8.2 *Explanations for individual characteristics*

Ad. 4: Leaf blade: length of midrib

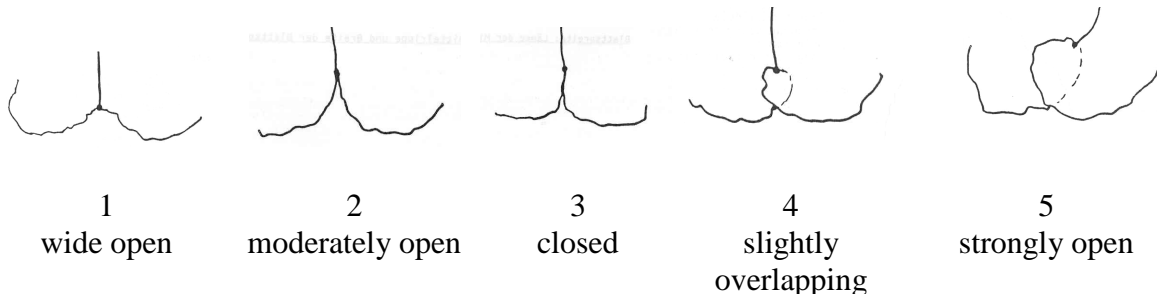
Ad. 5: Leaf blade: width



Leaf blade: length  
of midrib

Leaf blade: width

Ad. 9: Leaf blade: base



1  
wide open

2  
moderately open

3  
closed

4  
slightly  
overlapping

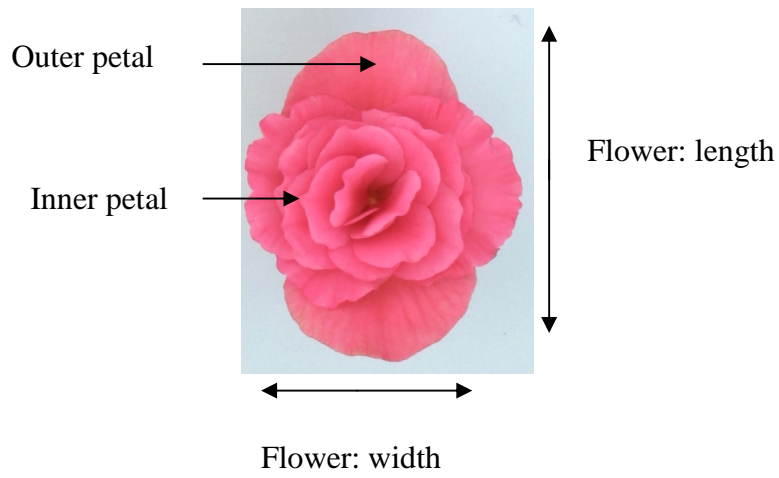
5  
strongly open

Ad. 15: Flower: Type

A single flower has two outer and two inner petals only. A double flower has two outer petals and more than two inner petals.

Ad. 17: Flower: length

Ad. 18: Flower: width



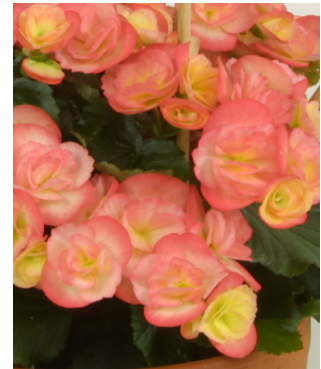
Ad. 19: Flower: number of colors



1  
one



2  
two



3  
more than two

9. Literature



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 Botanical name	<input type="text" value="Begonia x hiemalis Fotsch&lt;br/&gt;(syn. Begonia Elatior Hybridae)"/>	
1.2 Common name	<input type="text" value="Elatior begonia"/>	
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"/>	
3. Proposed denomination and breeder's reference		
Proposed denomination (if available)	<input type="text"/>	
Breeder's reference	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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

4.2.1 Vegetative propagation

- (a) cuttings  [ ]
- (b) *in vitro* propagation  [ ]
- (c) other (state method)  [ ]

4.2.2 Seed  [ ]

4.2.3 Other  [ ]  
(please provide details)

# 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 Flower: type</b> (15)		
single		1[ ]
double		2[ ]
<b>5.2 <u>Only varieties with double flowers:</u></b> (16) <b>Flower: number of petals</b>		
few		3[ ]
medium		5[ ]
many		7[ ]
<b>5.3 Flower: number of colors</b> (19)		
one		1[ ]
two		2[ ]
more than two		3[ ]
<b>5.4i Outer petal: color of <u>middle</u> of upper side</b> (21)		
RHS Colour Chart (indicate reference number)	.....	
<b>5.4ii Outer petal: color of <u>middle</u> of upper side</b> (21)		
white		1[ ]
yellow		2[ ]
orange		3[ ]
red		4[ ]
red pink		5[ ]
blue pink		6[ ]
other (indicate color)	.....	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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<b>5.5 Outer petal: incisions of margin</b> (22)	
absent or very shallow	1[ ]
shallow	3[ ]
medium	5[ ]
deep	7[ ]
<b>5.6i Inner petal: color of <u>middle</u> of <u>upper</u> side</b> (24)	
RHS Colour Chart (indicate reference number)	.....
<b>5.6ii Inner petal: color of <u>middle</u> of <u>upper</u> side</b> (24)	
white	1[ ]
yellow	2[ ]
orange	3[ ]
red	4[ ]
red pink	5[ ]
blue pink	6[ ]
other (indicate color)	.....

**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 similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>(Example)</i>	<i>Flower: number of colors</i>	<i>one</i>	<i>two</i>

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

Yes [ ] No [ ]

(If yes, please provide details):

7.3 Other information

A representative color photograph of the variety should accompany the Technical Questionnaire.

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.

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# Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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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 of where you have indicated “yes”.

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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]