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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS GENEVA

DRAFT

TORENIA

UPOV Code: TOREN

Torenia L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from Japan

to be considered by the the Technical Working Party for Ornamental Plants and Forest Trees at its forty-second session, to be held in Angers, France, from September 14 to 18, 2009

Alternative Names:*

Botanical name	English	French	German	Spanish
Torenia L.	Bluewings, Wishbone-flower		Torenia	

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.]

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

These Test Guidelines apply to all varieties of *Torenia* 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 or rooted cuttings.
- 2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

Vegetatively propagated varieties: 20 rooted cuttings Seed-propagated varieties: sufficient seed to produce 20 plants

DE recommend to change 20 to 40 for seed propagated varieties and ask whether having enough experience with seed propagated varieties

In the case of seed, 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.

- 2.4 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

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.

3.4 Test Design

- 3.4.1 Each test should be designed to result in a total of at least 10 plants for vegetatively propagated varieties or 20 plants for seed-propagated varieties.
- 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 10 plants or parts taken from each of 10 plants for vegetatively propagated varieties or 20 plants or parts of plants taken from 20 plants for seed-propagated varieties.

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 of vegetatively propagated varieties, 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, one off-type is allowed.
- 4.2.3 For the assessment of uniformity of seed-propagated varieties which are self-pollinated, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 plants, one 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 seed or 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) Upper corolla lobe: color of basal part (characteristic 20) with the following groups:

Gr.1: white

Gr.2: yellow

Gr.3: orange

Gr.4: red

Gr.5: pink

Gr.6: purple

Gr.7: violet

(c) Upper corolla lobe: color of distal part (characteristic 21) with the following groups:

Gr.1: white

Gr.2: yellow

Gr.3: orange

Gr.4: red

Gr.5: pink

Gr.6: purple

Gr 7: violet

Lateral corolla lobe: color of central part (characteristic 22) with the following groups:

Gr.1: white

Gr.3: yellow

Gr.4: orange

Gr.5: red

Gr.2: pink

Gr.6: purple

Gr.7: violet

- (d) Lower corolla lobe: color of blotch (characteristic 26)
- 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) See Explanations on the Table of Characteristics in Chapter 8.1
- (+) See Explanations on the Table of Characteristics in Chapter 8.2

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. (*) (+)		Plant: growth habit					
PQ		upright				Crown Blue	1
		spreading					2
		horizontal				Danmoon20	3
2.		Plant: height					
QN		short				Danmoon20	3
		medium				Crown Blue	5
		tall					7
3.		Plant: width	DE proposal : Shoot : length				
QN		narrow				Crown Blue	3
		medium					5
		broad					7
4. (*)		Stem: intensity of anthocyanin coloration of nodes	DE proposal : Stem →Shoot			DE ask ,JP has example varieties for the other state of expression?	
QN		absent or very weak					1
		weak				Crown Rose	2
		medium				Crown Blue	3
		strong					4
5. (*) (+)		Leaf blade: length					
QN	(a)	short					3
		medium				HATO-04-05	5
		long				Crown Blue	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
6. (*) (+)		Leaf blade: width					
PQ	(a)	narrow					3
		medium				HATO-04-05	5
		broad				Crown Blue	7
7.		Leaf blade: margin					
(+)							
PQ	(a)	dentate				Danmoon20	1
		crenate					2
8.		Leaf blade: intensity of green color on upper side	7				
QN	(a)	weak					3
		medium					5
		strong					7
9.		Petiole: length					
(+)							
QN	(a)	short					1
		medium				Danmoon20	2
		long				Crown Blue	3
10.		Inflorescence: axillary flower					
QL		absent				Crown Blue	1
		present				Danmoon20	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
11. (*) (+)	Calyx: shape of lobing	DE propose: Calyx:number of lobes				
		CA propose: Shape of lobing →lobing				
PQ	deeply two-lobed				Crown Blue	1
	shallowly five-lobed				Danmoon20	2
12. (*) (+)	Flower: length in front view					
QN	short					3
	medium				Crown Blue	5
	long					7
13. (*) (+)	Flower: width in front view					
QN	narrow					3
	medium				Crown Blue	5
	broad					7
14.	Corolla tube: length					
QN	short					3
	medium					5
	long					7
15.	Corolla tube: color of outer side					
(+)	color of outer side					
QN	RHS Colour Chart (indicate reference number)					
16.	Corolla tube: vertical lines of					
(+)	inner side					
QL	absent				Crown Blue	1
	present				Danmoon20	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
17. (*) (+)	Corolla tube: color of inner side at basal part	DE ask, How do assess this char.	you ?			
QN	RHS Colour Chart (indicate reference number)					
18.	Corolla lobe:					
(+)	serration					
QL	absent				Danmoon20	1
	present				Danmoon15	9
19. (*)	Upper corolla lobe: undulation					
QN	weak				Danmoon20	1
	medium					2
	strong				Crown Blue	3
20. (*) (+)	Upper corolla lobe: color of basal part					
PQ	RHS Colour Chart (indicate reference number)					
21. (*) (+)	Upper corolla lobe: color of distal part					
PQ	RHS Colour Chart (indicate reference number)					
22. (*) (+)	Lateral corolla lobe: color of central part					
PQ	RHS Colour Chart (indicate reference number)					

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
23. (*) (+)	Lateral corolla lobe: color of marginal part					
PQ	RHS Colour Chart (indicate reference number)					
24. (*) (+)	Lower corolla lobe: color of basal part	DE propose to change Lower corolla lobe: color of centre DE comment: Is this necessary? The same color as in ch.18	2			
PQ	RHS Colour Chart (indicate reference number)					
25. (*) (+)	Lower corolla lobe: color of basal part	DE propose to change Lower corolla lobe: color of margin	2			
PQ	RHS Colour Chart (indicate reference number)					
26. (*)	Lower corolla lobe: color of blotch					
PQ	white					1
	yellow					2
27.	Lower corolla lobe: size of blotch					
QN	small					3
	medium					5
	large					7
28.	Lower corolla lobe: intensity of blotch					
QN	absent or very weak					1
	medium					2
	strong					3

8. Explanations on the Table of Characteristics

Unless otherwise indicated, all characteristics should be observed at the time of full flowering.

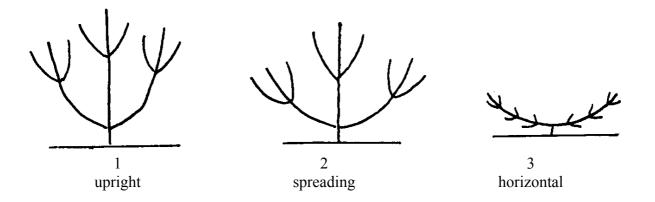
8.1 Explanations covering several characteristics

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

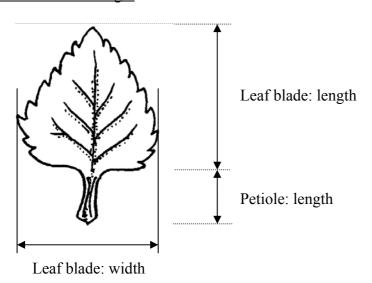
(a) Observations on the leaf blade should be made on fully expanded leaves from the middle third of a flowering stem. (lower third is better: DE suggestion)

8.2 Explanations for individual characteristics

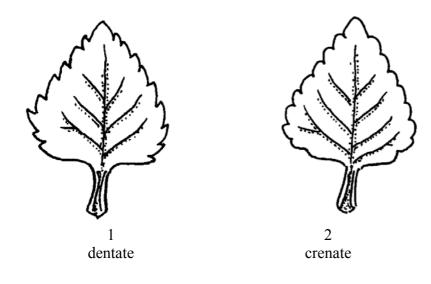
Ad. 1: Plant: growth habit



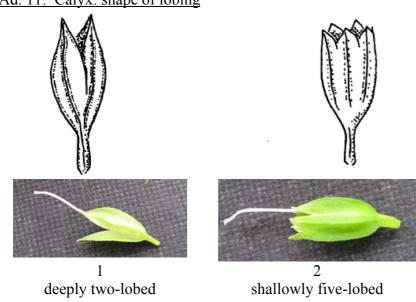
Ad. 5: Leaf blade: length Ad. 6: Leaf blade: width Ad. 9: Petiole: length



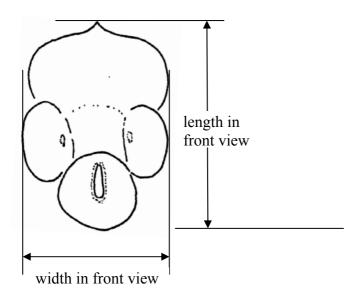
Ad. 7: Leaf blade: margin



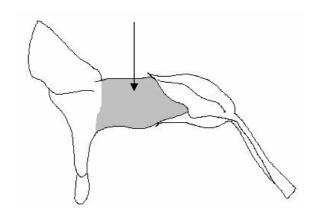
Ad. 11: Calyx: shape of lobing



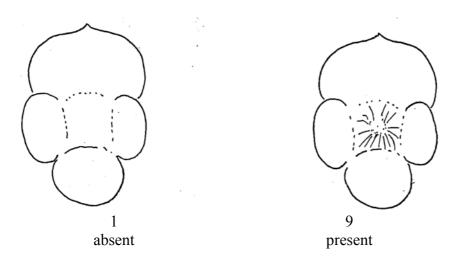
Ad. 12: Flower: length in front view Ad. 13: Flower: width in front view



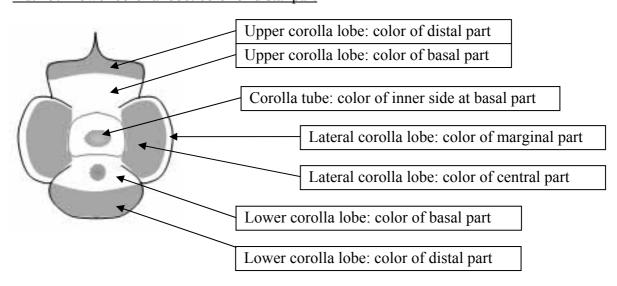
Ad. 15: Corolla tube: color of outer side



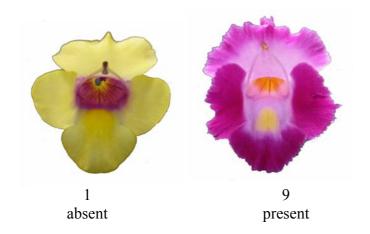
Ad. 16: Corolla tube: vertical lines of inner side



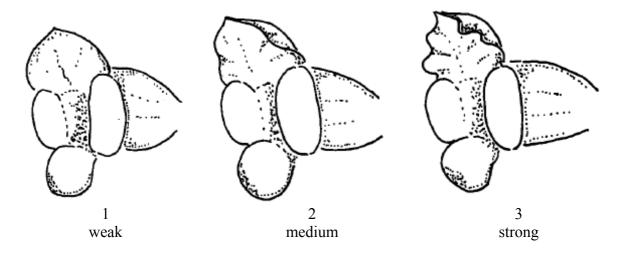
- Ad. 17: Corolla tube: color of inner side at basal part
- Ad. 20: Upper corolla lobe: color of basal part
- Ad. 21: Upper corolla lobe: color of distal part
- Ad. 22: Lateral corolla lobe: color of central part
- Ad. 23: Lateral corolla lobe: color of marginal part
- Ad. 24: Lower corolla lobe: color of basal part
- Ad. 25: Lower corolla lobe: color of distal part



Ad. 18: Corolla lobe: serration



Ad. 19: Upper corolla lobe: undulation



9. <u>Literature</u>

To be provided

10. <u>Technical Questionnaire</u>

TEC	HNICAL QUESTIONNAIRE	Page $\{x\}$ of $\{y\}$	Reference Number:				
			Application date: (not to be filled in by the applicant)				
	TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights						
1.	Subject of the Technical Questionnaire						
	1.1.1 Botanical name	orenia L.					
	1.1.2 Common name	luewings, Wishbone-flo	ower				
	1.2 Species/Group (please complete)						
2.	Applicant						
	Name						
	Address						
	Telephone No.						
	Fax No.						
	E-mail address						
	Breeder (if different from app	olicant)					

TEO	CHNICAL QUESTIONNAIR	E Page {x} of {y}	Reference Number:	
3.	Proposed denomination and	l breeder's reference		
	Proposed denomination (if available)]
	Breeder's reference]

TECHNICAL QUESTIONNAIRE	Page $\{x\}$ of $\{y\}$	Reference Number:

[#] 4.	Info	rmation	on th	e breeding scheme and propagation of the variety	7	
	4.1	Breedi	ing sc	heme		
		Varie	ty res	ulting from:		
		4.1.1	Cros	ssing		
			(a)	controlled cross (please state parent varieties)	[]
			(b)	partially known cross (please state known parent variety(ies))	[]
			(c)	unknown cross	[]
		4.1.2		ation ase state parent variety)	[]
		4.1.3	(ple	Discovery and development (please state where and when discovered and how developed)]
		4.1.4	Othe	er ase 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:

4.2 Method of propagating the variety						
4.2.1	Seed-propagated varieties					
	(a)	Self-pollination	[]			
	(b)	Cross-pollination (i) population (ii) synthetic variety	[]			
	(c)	Hybrid	[]			
	(d)	Other (please provide details)	[]			
4.2.2	Vege	etatively propagated varieties				
	(a)	cuttings	[]			
	(b)	in vitro propagation	[]			
	(c)	other (state method)	[]			
4.2.3		ner ease provide details)	[]			

TECHNICAL QUESTIONNAIRE	Page $\{x\}$ of $\{y\}$	Reference Number:

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
5.1 (1)	Plant: growth habit		
	upright	Crown Blue	1[]
	spreading		2[]
	horizontal	Danmoon20	3[]
5.2(i) (20)	Upper corolla lobe: color of basal part		
	RHS Colour Chart (indicate reference number)		
5.2(ii) (20)	Upper corolla lobe: color of basal part		
	white		1[]
	yellow		2[]
	orange		3[]
	red		4[]
	pink		5[]
	purple		6[]
	violet		7[]
	other (indicate color)		
5.3(i) (21)	Upper corolla lobe: color of distal part		
	RHS Colour Chart (indicate reference number)		

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

	Characteristics	Example Varieties	Note
5.3(ii) (21)	Upper corolla lobe: color of distal part		
	white		1[]
	yellow		2[]
	orange		3[]
	red		4[]
	pink		5[]
	purple		6[]
	violet		7[]
	other (indicate color)		
5.4(i) (22)	Lateral corolla lobe: color of central part		
	RHS Colour Chart (indicate reference number)		
5.4(ii) (22)	Lateral corolla lobe: color of central part		
	white		1[]
	yellow		2[]
	orange		3[]
	red		4[]
	pink		5[]
	purple		6[]
	violet		7[]
	other (indicate color)		
5.5 (26)	Lower corolla lobe: color of blotch		
	white		1[]
	yellow		2[]

TECHNICAL QUESTI	ONNAIRE	Page {x} o	of {y}	Reference Nu	ımber:
6. Similar varieties and differences from these varieties					
Please use the following candidate variety differs is (or are) most similar examination of distincts	rs from the vo r. This inform	ariety (or va nation may	rieties) wh help the ex	ich, to the bes	t of your knowledge,
Denomination(s) of variety(ies) similar to your candidate variety	Character which your variety diffe similar va	candidate ers from the	of the cha	the expression aracteristic(s) he similar hety(ies)	Describe the expression of the characteristic(s) for your candidate variety
Example:					
Comments:					

Page $\{x\}$ of $\{y\}$

Reference Number:

TECHNICAL QUESTIONNAIRE

[#] 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 [1		
	(If yes, please provid	le details)			
7.2	Are there any specia	l conditions for grow	ving the variety or conducting the examination?		
	Yes []	No []		
	(If yes, please provid	le details)			
7.3	Other information				
A re	epresentative color pho	otograph of the variet	ty should accompany the Technical Questionnaire.		
8.	Authorization for rel	lease			
	(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 author	orization been obtaine	ed?		
	Yes []	No	[]		
	If the answer to (b) i	s yes, please attach a	a copy of the authorization.		

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

TECH	INICA	AL 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. vire	us, bacteria, phytoplasi	ma) Yes [] No []
	(b)	Chemical treatment (e.g.	growth retardant, pesti	cide) 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					
	Signature Date				

[End of document]