

TG/SUTERA(proj.2)
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DATE: 2006-07-12

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

SUTERA

UPOV Code: SUTER

Sutera Roth

JAMESBRITTENIA

UPOV Code: JAMES

Jamesbrittenia O. Kuntze

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-ninth session, to be held in Fortaleza, Ceará State, Brazil, from August 28 to September 1, 2006

Alternative Names:*

Botanical name	English	French	German	Spanish
Sutera Roth	Sutera	Sutera	Sutera	Sutera
Jamesbrittenia O. Kuntze	Jamesbrittenia		Jamesbrittenia	

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.

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^{*} 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. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Sutera* Roth and *Jamesbrittenia* O. Kuntze and hybrids between them, of the family *Scrophulariaceae*.

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

20 rooted 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. Except where otherwise indicated, the optimum stage of development for the assessment of the characteristics is at the time of full flowering.
- 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 15 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 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 15 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) Leaf blade: variegation (characteristic 13)
 - (b) Flower: type (characteristic 15)
 - (c) Corolla lobe: number of colors of upper side (characteristic 20)
 - (d) Corolla lobe: main color of upper side (characteristic 21) with the following groups:

Gr. 1: white

Gr. 2: pink

Gr. 3: red

Gr. 4: purple

Gr. 5: violet

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 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: height		Pflanze: Höhe			
QN	very short		sehr niedrig		Giwhisto 12	1
	short		niedrig			3
	medium		mittel		Yasflos	5
	tall		hoch		Sumsut 02	7
2. (*) (+)	Shoot: length		Trieb: Länge			
QN	short		kurz		Wesbadream	3
	medium		mittel		Giwhisto 12	5
	long		lang		Dancoplace	7
3.	Shoot: length of internodes (mide third of shoot)		Trieb: Internodienläi (im mittleren l des Triebes)			
QN	short		kurz		Gicomwhi 14	3
	medium		mittel		Giwhisto 12	5
	long		lang		Yaspea	7
4.	Shoot: anthocya coloration (uppe third of shoot)		Trieb: Anthocyanfär (im oberen Dr des Triebes)			
QN	absent or very we	eak	fehlend oder se gering	hr		1
	weak	weak		gering		3
	medium		mittel	mittel		5
	strong		stark		Novasnow	7
	very strong		sehr stark			9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5.		Petiole: length		Blattstiel: Läng	ge		
QN	(a)	absent or very short		fehlend oder sel kurz	hr		1
		short		kurz		Sumsut 03	3
		medium		mittel			5
		long		lang		Dancop 18	7
6. (*) (+)		Leaf: type		Blatt: Typ			
QL	(a)	simple		einfach			1
		pinnate		zusammengeset	zt		2
7. (*) (+)		Leaf blade: length		Blattspreite: L	änge		
QN	(a)	short		kurz		Wesbadream	3
		medium		mittel		Eskimo	5
		long		lang		Giwhisto 12	7
8. (*) (+)		Leaf blade: width		Blattspreite: B	reite		
QN	(a)	narrow		schmal		Wesbadream	3
		medium		mittel		Eskimo	5
		broad		breit		Giwhisto 12	7
9.		Leaf blade: length/width ratio		Blattspreite: Verhältnis Länge/Breite			
QN	(a)	small		klein			3
		medium		mittel			5
		large		groß			7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10. (+)		Leaf blade: position of broadest part		Blattspreite: Position der breitesten Stelle			
PQ	(a)	towards the middle		mehr zur Mitte			1
		towards the base		mehr zur Basis			2
11. (+)		Only varieties with simple leaves: Leaf blade: depth of incisions of margin		Nur Sorten mit einfachen Blättern: Blattspreite: Tiefe der Randeinschnitte			
QN	(a)	absent or very shallow		fehlend oder sehr flach			1
		shallow		flach			3
		medium		mittel			5
		deep		tief			7
12.		Young leaf: color (if clearly different from color of fully developed leaf)		Junges Blatt: Farbe (falls deutlich verschieden von der Farbe des ausgewachsenen Blattes)			
PQ		white		weiß			1
		yellow		gelb		Dancop 15	2
13. (*)		Leaf blade: variegation		Blattspreite: Panaschierung			
QL	(a)	absent		fehlend		Wesbadream	1
		present		vorhanden			9
14. (+)		Leaf blade: main color of upper side		Blattspreite: Hauptfarbe der Oberseite			
PQ	(a)	yellow		gelb			1
		light green		hellgrün			2
		medium green		mittelgrün		Eskimo	3
		dark green		dunkelgrün			4

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15. (*)	Flower: type		Blüte: Typ			
QL	single		einfach		Wesbadream	1
	double		gefüllt		Sumsut 03	2
16. (*) (+)	Flower: length		Blüte: Länge			
QN	short		kurz			3
	medium		mittel			5
	long		lang			7
17. (*) (+)	Flower: width		Blüte: Breite			
QN	very narrow		sehr schmal			1
	narrow		schmal		Wesbadream	3
	medium		mittel		Wesbavio	5
	broad		breit		Giwhisto 12	7
	very broad		sehr breit			9
18. (+)	Corolla lobe: wid	th	Kronzipfel: B	reite		
QN	narrow		schmal		Wesbadream	3
	medium		mittel		Wesbavio	5
	broad		breit		Gicomwhi 14	7
19. (+)	Corolla lobe: sha of apex	pe	Kronzipfel: Fo der Spitze	orm		
PQ	pointed		spitz			1
	rounded		rundlich			2
	truncate		flach			3
	retuse		eingedrückt			4

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20. (*)	Corolla lobe: number of colors of upper side (excluding corolla tube)		Kronzipfel: Anzahl Farben der Oberseite (ohne Kronröhre)	l		
QL	one		eine		Wesbadream	1
	two		zwei		Dancop 18	2
	more than two		mehr als zwei			3
21. (*) (+)	Corolla lobe: main color of upper side		Kronzipfel: Hauptfarbe der Oberseite			
PQ	RHS Colour Chart (indicate reference number)		RHS-Farbkarte (Nummer angeben)			
22. (*)	Corolla lobe: secondary color of upper side		Kronzipfel: Sekundärfarbe der Oberseite			
PQ	white		weiß			1
	yellow		gelb			2
	dark pink		dunkelrosa			3
	dark purple		dunkelpurpurn			4
	dark violet		dunkelviolett			5
23. (+)	Corolla tube: length	1	Kronröhre: Länge			
QN	short		kurz			3
	medium		mittel			5
	long		lang			7
24. (+)	Only varieties with single flowers: Corolla tube: main color at transition to corolla lobe	0	<u>Nur Sorten mit</u> einfachen Blüten: Kronröhre: Hauptfarbe am Übergang zum Kronlappen			
PQ	yellow		gelb			1
	yellow orange		gelborange			2
	orange		orange			3

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

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 should be made on the fully developed <u>basal</u> leaf (leaf located at the base of the shoot).

8.2 Explanations for individual characteristics

Ad. 2: Shoot: length

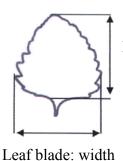
The shoot length should be observed towards the end of full flowering.

Ad. 6: Leaf: type

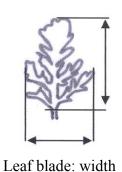




Ad. 7: Leaf blade: length Ad. 8: Leaf blade: width

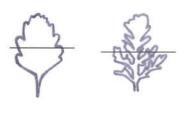


Leaf blade: length



Leaf blade: length

Ad. 10: Leaf blade: position of the broadest part

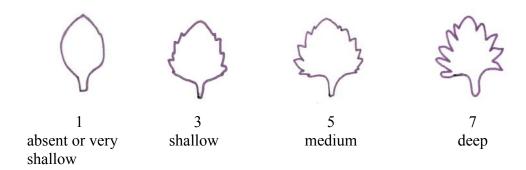


towards the middle



2 towards the base

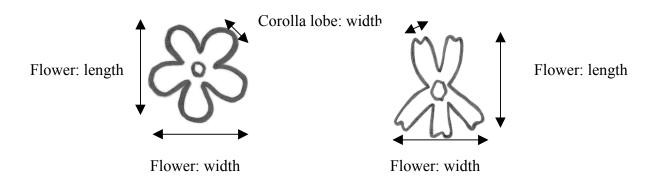
Ad. 11: Only varieties with simple leaves: Leaf blade: depth of incisions of margin



Ad. 14: Leaf blade: main color of upper side

The main color is the color of the largest area of the leaf. If the area of the colors is nearly half and half, the darker color is the main color.

Ad. 16: Flower: length
Ad. 17: Flower: width
Ad. 18: Corolla lobe: width



Ad. 19: Corolla lobe: shape of apex



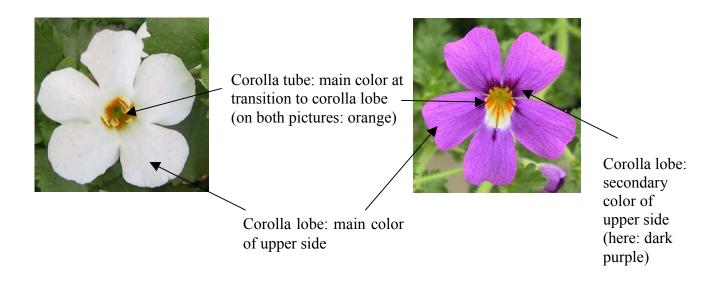
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Ad. 21: Corolla lobe: main color of upper side

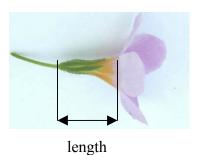
Ad. 22: Corolla lobe: secondary color of upper side

Ad. 24: Only varieties with single flowers:

Corolla tube: main color at transition to corolla lobe



Ad. 23: Corolla tube: length



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9. <u>Literature</u>

Hilliard, O.M. , 1994: The Manuleae. A Tribe of Scrophulariaceae, Edinburgh University Press

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10. <u>Technical Questionnaire</u>

TECHNICAL QUESTIONNAII			Page {x} of {y}	Reference Number:		
				Application date: (not to be filled in by the ap	plica	ınt)
			INICAL QUESTIONN tion with an applicatio	NAIRE on for plant breeders' rights		
1.	Subject of the Technical (Quest	ionnaire			
	 1.1 Genus 1.2 Species Botanical name (please complete) Common name 	Suc	tera Roth] []]
	 2.1 Genus 2.2 Species Botanical name (please complete) Common name 		mesbrittenia O. Kuntze] []]
	3.1 Hybrid: please indi Botanical name	cate 1	name(s) of genera and	species used in the crossing][]
2.	Applicant					
	Name					
	Address					
	Telephone No.					
	Fax No.					
	E-mail address					
	Breeder (if different from	appl	icant)]	

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TEC	CHNICAL (QUESTIONNAIRE	Page $\{x\}$ of $\{y\}$	Reference Number:	
3.	Proposed (if availal	denomination and brodenomination ble)	eeder's reference		
[#] 4.	4.1 Bree Varie	on on the breeding scheding scheme ety resulting from: Crossing	eme and propagation	of the variety	
	4.1.3	(c) unknown cross Mutation (please state parent v	rent varieties) cross own parent variety(ies) variety) and when discovered a	[]	
	4.2.1 4.2.1 4.2.2 4.2.3	(a) cuttings (b) in vitro propa (c) other (state n	e variety ation agation nethod)	[] [] []	

 $^{^{\#}}$ 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:

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 (13)	Leaf blade: variegation		
	absent	Wesbadream	1[]
	present		9[]
5.2 (15)	Flower: type		
	single	Wesbadream	1[]
	double	Sumsut 03	2[]
5.3 (17)	Flower: width		
	very narrow		1[]
	narrow	Wesbadream	3[]
	medium	Wesbavio	5[]
	broad	Giwhisto 12	7[]
	very broad		9[]
5.4 (20)	Corolla lobe: number of colors of upper side (excluding corolla tube)		
	one	Wesbadream	1[]
	two	Dancop 18	2[]
	more than two		3[]

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

	Characteristics	Example Varieties	Note
5.5i (21)	Corolla lobe: main color of upper side		
	RHS Colour Chart (indicate reference number)		
5.5ii (21)	Corolla lobe: main color of upper side		
	white		1[]
	pink		2[]
	red		3[]
	purple		4[]
	violet		5[]
	other color (indicate which)		
5.6 (22)	Corolla lobe: secondary color of upper side		
	white		1[]
	yellow		2[]
	dark pink		3[]
	dark purple		4[]
	dark violet		5[]
	other color (indicate which)		

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TEC	HNICAL QUEST	IONNAIRE	Page {x	{ O1 { y }	Reference I	Number.			
cand is (o	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.								
vari	Denomination(s) of variety(ies) similar to your candidate variety the similar variety(ies) Characteristic(s) in which your candidate of the characteristic(s) the similar variety(ies) variety								
(Exan	nple)	Flower:	width	br	oad	medium			
[#] 7.	Additional inform	mation which	may help	in the examin	nation of the	variety			
7.1	In addition to the characteristics w		-			are there any additional			
	Yes []		No []					
	(If yes, please pro	ovide details)							
7.2	Are there any spe	ecial condition	ns for grov	ving the vari	ety or conduc	cting the examination?			
	Yes []		No []					
	(If yes, please pro	ovide details)							
7.3	Other information	n							
Ques	A representative stionnaire.	ve color phot	tograph o	f the variety	y should ac	company the Technical			

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

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TECHNICAL QUESTIONNAIRE Page {x} of {y} Reference Number:							
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.						
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. vir	us, bacteria, phytoplas	ma)	Yes []	No []	
	(b)	Chemical treatment (e.g.	growth retardant, pest	icide)	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							