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TG/182/3

INTERNATIONAL UNION
FOR THE PROTECTION
OF NEW VARIETIES OF
PLANTS

UNION INTERNATIONALE
POUR LA PROTECTION
DES OBTENTIONS
VÉGÉTALES

INTERNATIONALER
VERBAND ZUM SCHUTZ
VON PFLANZEN-
ZÜCHTUNGEN

UNIÓN INTERNACIONAL
PARA LA PROTECCIÓN
DE LAS OBTENCIÓNES
VEGETALES

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

GUZMANIA

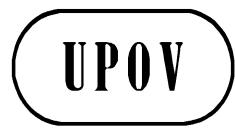
(*Guzmania Ruiz et Pav.*)

**GENEVA
2001**

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GUZMANIA

(*Guzmania Ruiz et Pav.*)

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

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I. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Guzmania* Ruiz et Pav. of the family Bromeliaceae.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. For seed propagated varieties, as seed loses its germination capacity within a few days, it is necessary to provide plants instead of seed. As a minimum, the following quantity of plant material is recommended:

50 young plants of commercial standard, pricked out at least twice.

2. The plant material supplied should be visibly healthy, not lacking in vigor or affected by any important pests or diseases.

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

III. Conduct of Tests

1. A test should normally be conducted for one growing period. If distinctness and/or uniformity cannot be sufficiently established in one growing period, the test should be extended for a second growing period.

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

3. The tests should be carried out under conditions ensuring normal growth (for the Northern Hemisphere).

Soil: Well-drained fertile soil, with a high content of organic matter or organic substrate.

Temperature: Minima of 21°C (day) and 19°C (night) are recommended.

Light: During periods of high light intensity shading is necessary.

Flower induction: When the plants have reached full growth the plants are treated with acetylene saturated water or Ethrel for flower induction.

The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. Each test should include a total of 50 plants. Separate plots

for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

IV. Methods and Observations

1. Unless otherwise stated, all observations should be made on typical organs of 50 plants at the time of full-flowering. All observations determined by measurement or counting should be made on 10 plants or parts taken from each of 10 plants.
2. For the assessment of uniformity in case of vegetatively propagated Guzmania, a population standard of 2% and an acceptance probability of at least 95% should be applied. In the case of seed propagated Guzmania, the variability within the variety should not exceed the variability of comparable varieties already known. Interpretation of results should be made according to the rule of cross-pollinated varieties as stated in the General Introduction to the Test Guidelines.
3. All observations on the leaves should be made on the largest leaves of the middle third of the rosette. All observations on the bract should be made on the largest bract.
4. 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 tolerance set out in British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed within the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:
 - (a) Plant: height (inflorescence excluded) (characteristic 1)
 - (b) Inflorescence: position compared to position of the leaves (characteristic 14)
 - (c) Inflorescence: number of flowers per bract (characteristic 19)

- (d) Bract: color of upper side (characteristic 24) with the following groups:
- Gr. 1: white
 - Gr. 2: green
 - Gr. 3: yellow
 - Gr. 4: orange
 - Gr. 5: orange red
 - Gr. 6: purple pink
 - Gr. 7: red
 - Gr. 8: red purple
 - Gr. 9: purple

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.
2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.
3. Legend
 - (*) Characteristics that should be used on all varieties in every growing period over which examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.
 - (+) See Explanations on the Table of Characteristics in Chapter VIII.

VII. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteresticas

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	Plant: height (inflorescence excluded) (*) (+)	Plante: hauteur (inflorescence exclue)	Pflanze: Höhe (ohne Blütenstand)	Planta: altura (inflorescencia excluida)		
	very short	très basse	sehr niedrig	muy baja	Mandarine	1
	short	basse	niedrig	baja	Pax	3
	medium	moyenne	mittel	media	Torch	5
	tall	haute	hoch	alta	Magenta	7
	very tall	très haute	sehr hoch	muy alta	<i>Guzmania bismarckii</i>	9
2.	Plant: diameter (*)	Plante: diamètre	Pflanze: Durchmesser	Planta: diámetro		
	very small	très petit	sehr klein	muy pequeño	<i>Guzmania angustifolia</i>	1
	small	petit	klein	pequeño	Empire	3
	medium	moyen	mittel	medio	Pax	5
	large	grand	groß	grande	Magenta, Rana	7
	very large	très grand	sehr groß	muy grande	<i>Guzmania bismarckii</i>	9
3.	Plant: number of leaves	Plante: nombre de feuilles	Pflanze: Anzahl Blätter	Planta: número de hojas		
	very few	très petit	sehr gering	muy bajo	<i>Guzmania calamifolia</i>	1
	few	petit	gering	bajo	Decora	3
	medium	moyen	mittel	medio	Rana	5
	many	grand	groß	alto	Magenta	7
	very many	très grand	sehr groß	muy alto		9
4.	Leaf sheath: length	Gaine de la feuille: longueur	Blattscheide: Länge	Vaina: longitud		
	short	courte	kurz	corta	Cherry	3
	medium	moyenne	mittel	media	Rana	5
	long	longue	lang	larga	Magenta	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. Leaf sheath: width	Gaine de la feuille: Blattscheide: Breite	Vaina: anchura			
narrow	étroite	schmal	estrecha	Papilio	3
medium	moyenne	mittel	media	Cherry	5
broad	large	breit	ancha	Fleur d'Anjou	7
6. Leaf blade: length (*)	Limbe: longueur	Blattspreite: Länge	Limbo: longitud		
very short	très court	sehr kurz	muy corto	Rondo	1
short	court	kurz	corto	Pax	3
medium	moyen	mittel	medio	Torch	5
long	long	lang	largo	Lemonade	7
very long	très long	sehr lang	muy largo	<i>Guzmania bismarckii</i>	9
7. Leaf blade: width (*)	Limbe: largeur	Blattspreite: Breite	Limbo: anchura		
very narrow	très étroit	sehr schmal	muy estrecho	<i>Guzmania angustifolia</i>	1
narrow	étroit	schmal	estrecho	Empire	3
medium	moyen	mittel	medio	Luna	5
broad	large	breit	ancho	<i>Guzmania conifera</i>	7
very broad	très large	sehr breit	muy ancho	<i>Guzmania bismarckii</i>	9
8. Leaf blade: shape of apex (*)	Limbe: forme du sommet	Blattspreite: Form der Spitze	Limbo: forma del ápice		
narrow acuminate	étroitement acuminé	schmal zugespitzt	estrecha acuminada	<i>Guzmania calamifolia</i>	1
medium acuminate	moyennement acuminé	mittel zugespitzt	acuminada media	Magenta, Rana	2
broad acuminate	largement acuminé	breit zugespitzt	acuminada ancha	<i>Guzmania conifera</i>	3
narrow acute	étroitement aigu	schmal spitz	aguda estrecha	<i>Guzmania dissitiflora</i>	4
medium acute	moyennement aigu	mittelspitz	aguda media	Empire, Luna	5
broad acute	largement aigu	breit spitz	aguda ancha	Torch	6

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9. (*)	Leaf blade: main color of upper side	Limbe: couleur principale de la face supérieure	Blattspreite: Hauptfarbe an der Oberseite	Limbo: color principal del haz		
	yellowish white	blanc jaunâtre	gelblich weiß	blanco amarillento	<i>Guzmania musaica</i>	1
	light green	vert clair	hellgrün	verde claro	Rondo	2
	medium green	vert moyen	mittelgrün	verde medio	Torch	3
	dark green	vert foncé	dunkelgrün	verde oscuro	Ostara	4
	grey green	vert-gris	graugrün	verde gris	<i>Guzmania conifera</i>	5
	red purple	rouge-pourpre	rotpurpurn	púrpura rojizo	<i>Guzmania erythrolepis</i>	6
	purple	pourpre	purpurn	púrpura	<i>Guzmania lindenii,</i> <i>Guzmania vittata</i>	7
	red brown	rouge-brun	rotbraun	marrón rojizo	<i>Guzmania remyi</i>	8
10. (*)	Leaf blade: secondary color of upper side	Limbe: couleur secondaire de la face supérieure	Blattspreite: sekundäre Farbe an der Oberseite	Limbo: color secundario del haz		
	absent	absente	fehlend	ausente	Rondo	1
	present	présente	vorhanden	presente	<i>Guzmania musaica,</i> <i>Guzmania sanguinea</i>	9
11.	Leaf blade: main color of lower side	Limbe: couleur principale de la face inférieure	Blattspreite: Hauptfarbe an der Unterseite	Limbo: color principal del envés		
	yellowish white	blanc jaunâtre	gelblich weiß	blanco amarillento		1
	light green	vert clair	hellgrün	verde claro	<i>Guzmania musaica</i>	2
	medium green	vert moyen	mittelgrün	verde medio	Torch	3
	dark green	vert foncé	dunkelgrün	verde oscuro	Ostara	4
	grey green	vert-gris	graugrün	verde gris	<i>Guzmania conifera</i>	5
	red purple	rouge-pourpre	rotpurpurn	púrpura rojizo		6
	purple	pourpre	purpurn	púrpura		7
	red brown	rouge-brun	rotbraun	marrón rojizo	<i>Guzmania remyi</i>	8

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.	Leaf blade: anthocyanin coloration of lower side	Limbe: pigmentation anthocyanique de la face inférieure	Blattspreite: Anthocyanfärbung an der Unterseite	Limbo: coloración antociánica del envés		
	absent	nulle	fehlend	ausente	Rondo	1
	present	présente	vorhanden	presente	Decora, Ostara	9
13.	Leaf blade: distribution of anthocyanin coloration of lower side	Limbe: répartition de la pigmentation anthocyanique de la face inférieure	Blattspreite: Verteilung der Anthocyanfärbung an der Unterseite	Limbo: distribución de la coloración antociánica del envés		
	as a flush	floue	geflammt	difusa	Magenta	1
	in stripes	en stries	in Streifen	en bandas	<i>Guzmania dissitifolia</i>	2
14.	(*) Inflorescence: position compared to position of leaves	Inflorescence: position par rapport aux feuilles	Blütenstand: Sitz im Vergleich zu den Blättern	Inflorescencia: posición en comparación con la posición de las hojas		
	below	au-dessous	unterhalb	debajo	<i>Guzmania sanguinea,</i> <i>Guzmania erythrolepis</i>	1
	same level	au même niveau	in gleicher Höhe	al mismo nivel	Mandarine	2
	above	au-dessus	oberhalb	encima	Torch	3
15.	(*) Inflorescence: length (+)	Inflorescence: longueur	Blütenstand: Länge	Inflorescencia: longitud		
	very short	très courte	sehr kurz	muy corta	Rondo	1
	short	courte	kurz	corta	Empire	3
	medium	moyenne	mittel	media	Continental	5
	tall	longue	lang	alta	Magenta	7
	very tall	très longue	sehr lang	muy alta	Tiffany	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. (*) (+)	Inflorescence: length of flowering part	Inflorescence: longueur de la partie florifère	Blütenstand: Länge des blühenden Teils	Inflorescencia: longitud de la parte floral		
	short	courte	kurz	corta	Rondo	3
	medium	moyenne	mittel	media	Pax	5
	long	longue	lang	larga	Magenta	7
	very long	très longue	sehr lang	muy larga	Tiffany	9
17. (*) (+)	Inflorescence: diameter of flowering part	Inflorescence: diamètre de la partie florifère	Blütenstand: Durchmesser des blühenden Teils	Inflorescencia: diámetro de la parte floral		
	very small	très petit	sehr klein	muy pequeño	<i>Guzmania remyi</i>	1
	small	petit	klein	pequeño	<i>Guzmania dissitiflora</i>	3
	medium	moyen	mittel	medio	Pax	5
	large	grand	groß	grande	Ruby	7
	very large	très grand	sehr groß	muy grande	Tiffany	9
18. (*) (+)	Inflorescence: number of bracts	Inflorescence: nombre de bractées	Blütenstand: Anzahl Deckblätter	Inflorescencia: número de brácteas		
	very few	très faible	sehr gering	muy bajo	<i>Guzmania eduardii</i>	1
	few	faible	gering	bajo	Cherry, Rana	3
	medium	moyen	mittel	medio	Magenta	5
	many	élevé	groß	alto	Pax, Ultra	7
	very many	très élevé	sehr groß	muy alto	Torch	9
19. (*) (+)	Inflorescence: number of flowers per bract	Inflorescence: nombre de fleurs par bractée	Blütenstand: Anzahl Blüten pro Deckblatt	Inflorescencia: número de flores por bráctea		
	one	une	eine	una	Pax, Torch	1
	more than one	plus d'une	mehr als eine	más de una	Cherry, Rana	2

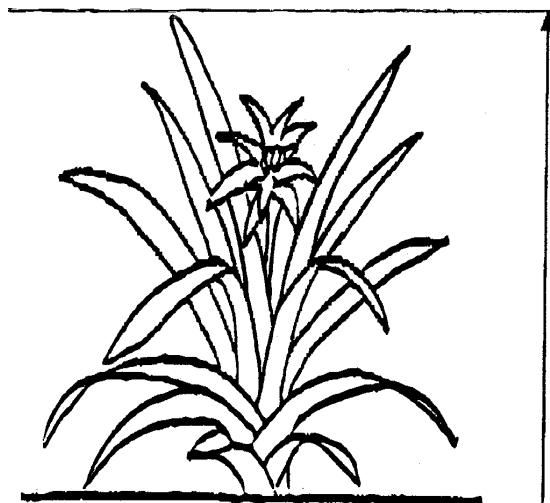
	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20. (*)	Inflorescence: varieties with more than one flower per bract: total number of flowers per bract	Inflorescence: variétés à plus d'une fleur par bractée: nombre total de fleurs par bractée	Blütenstand: Sorten mit mehr als einer Blüte pro Deckblatt:	Inflorescencia: variedades con más bráctea: número total de flores por bráctea		
	few	petit	gering	bajo	Papilio	3
	medium	moyen	mittel	medio	Luna, Rana	5
	many	grand	groß	alto	Continental	7
21. (*)	Bract: length	Bractée: longueur	Deckblatt: Länge	Bráctea: longitud		
	very short	très courte	sehr kurz	muy corta	<i>Guzmania dissitiflora,</i> <i>Guzmania remyi</i>	1
	short	courte	kurz	corta	Rondo, Torch	3
	medium	moyenne	mittel	media	Papilio, Pax	5
	long	longue	lang	larga	Magenta, Rana	7
	very long	très longue	sehr lang	muy larga	Tiffany	9
22. (*)	Bract: width	Bractée: largeur	Deckblatt: Breite	Bráctea: anchura		
	very narrow	très étroite	sehr schmal	muy estrecha	<i>Guzmania barbiae</i>	1
	narrow	étroite	schmal	estrecha	Papilio	3
	medium	moyenne	mittel	media	Cherry, Ultra	5
	broad	large	breit	ancha	Lemonade, Tiffany	7
	very broad	très large	sehr breit	muy ancha	Fleur d'Anjou	9
23.	Bract: width of tip	Bractée: largeur de l'extrémité	Deckblatt: Breite der Spitze	Bráctea: anchura de la punta		
	narrow	étroite	schmal	estrecha	Ruby	1
	medium	moyenne	mittel	media	Cherry, Magenta	2
	broad	large	breit	ancha	Torch	3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
24. (*)	Bract: color of upper side RHS Colour Chart (indicate reference number)	Bractée: couleur de la face supérieure Code RHS des couleurs (indiquer le numéro de référence)	Deckblatt: Farbe der Oberseite RHS-Farbkarte (Nummer angeben)	Bráctea: color del haz Tabla de colores RHS (indíquese el número de referencia)		
25. (*)	Bract: color of lower side RHS Colour Chart (indicate reference number)	Bractée: couleur de la face inférieure Code RHS des couleurs (indiquer le numéro de référence)	Deckblatt: Farbe der Unterseite RHS-Farbkarte (Nummer angeben)	Bráctea: color del envés Tabla de colores RHS (indíquese el número de referencia)		
26.	Flower: length of prophyll short medium long	Fleur: longueur de la préfeuille courte moyenne longue	Blüte: Länge des Vorblatts kurz mittel lang	Flor: longitud del profilo corto medio largo	Marlebeka Continental, Decora Cherry, Rana	3 5 7
27.	Flower: width of prophyll narrow medium broad	Fleur: largeur de la préfeuille étroite moyenne large	Blüte: Breite des Vorblatts schmal mittel breit	Flor: anchura del profilo estrecho medio ancho	Papilio Ranba Continental	3 5 7
28. (*)	Flower: color of prophyll RHS Colour Chart (indicate reference number)	Fleur: couleur de la préfeuille Code RHS des couleurs (indiquer le numéro de référence)	Blüte: Farbe des Vorblatts RHS-Farbkarte (Nummer angeben)	Flor: color del profilo Tabla de colores RHS (indíquese el número de referencia)		
29. (*)	Flower: color of calyx RHS Colour Chart (indicate reference number)	Fleur: couleur du calice Code RHS des couleurs (indiquer le numéro de référence)	Blüte: Farbe des Kelchs RHS-Farbkarte (Nummer angeben)	Flor: color del cáliz Tabla de colores RHS (indíquese el número de referencia)		

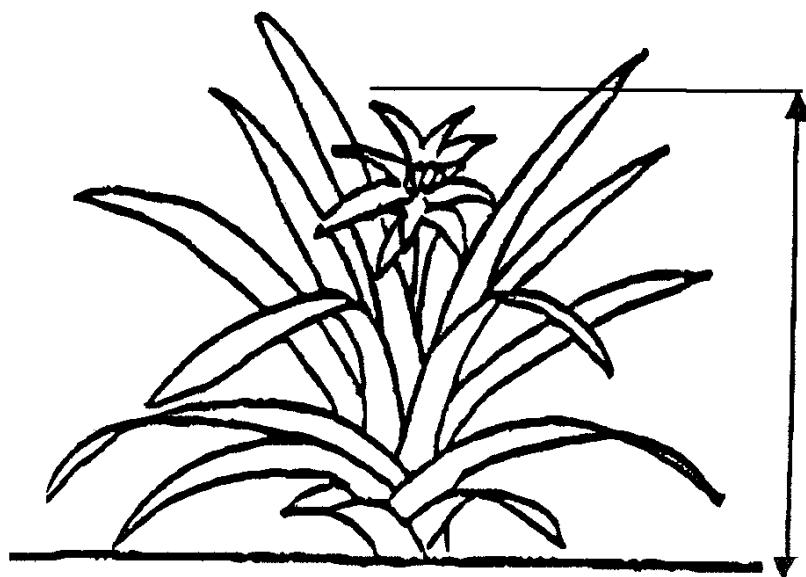
	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30. (*)	Flower: color of corolla	Fleur: couleur de la corolle	Blüte: Farbe der Krone	Flor: color de la corola		
	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Tabla de colores RHS (indíquese el número de referencia)		
31.	Flower: color of ovary	Fleur: couleur de l'ovaire	Blüte: Farbe des Fruchtknotens	Flor: color del ovario		
	white	blanc	weiß	blanco	Ultra	1
	light yellow	jaune clair	hellgelb	amarillo claro	Mignon	2
	light green	vert clair	hellgrün	verde claro	Pax, Torch	3
32.	Flower: color of style	Fleur: couleur du style	Blüte: Farbe des Griffels	Flor: color del estilo		
	white	blanc	weiß	blanco	Mignon	1
	light yellow	jaune clair	hellgelb	amarillo claro	Pax, Torch	2
	medium yellow	jaune moyen	mittelgelb	amarillo medio	<i>Guzmania fusisepala</i> , <i>Guzmania jarmiloi</i>	3
	yellow green	vert-jaune	gelbgrün	verde amarillento	<i>Guzmania dissitiflora</i>	4
33.	Flower: color of stigma	Fleur: couleur du stigmate	Blüte: Farbe der Narbe	Flor: color del estigma		
	white	blanc	weiß	blanco	Pax, Ultra	1
	light yellow	jaune clair	hellgelb	amarillo claro	Guayabo	2
	light green	vert clair	hellgrün	verde claro	Torch	3
	medium green	vert moyen	mittelgrün	verde medio	Montezuma	4

VIII. Explanations on the Table of Characteristics

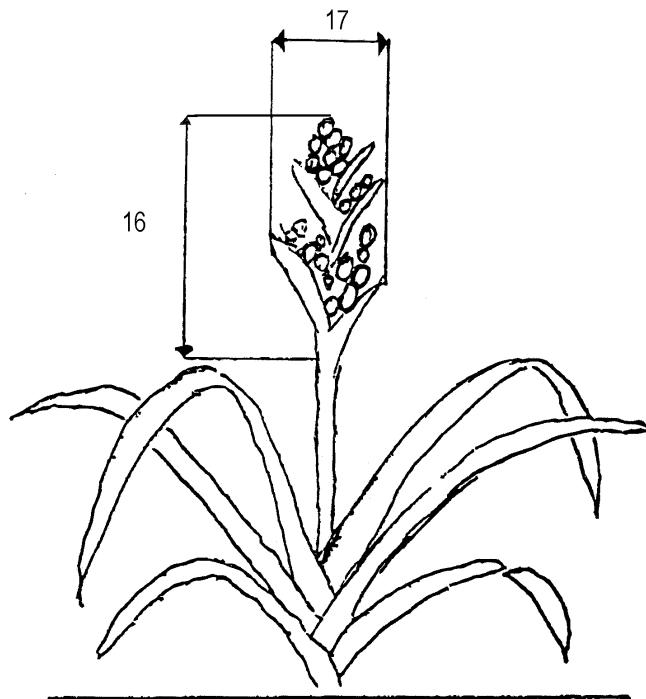
Ad. 1: Plant: height (inflorescence excluded)



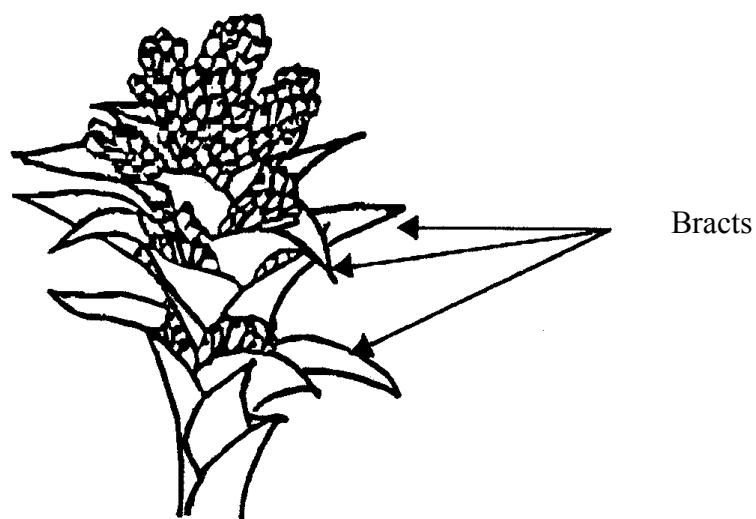
Ad. 15: Inflorescence: length



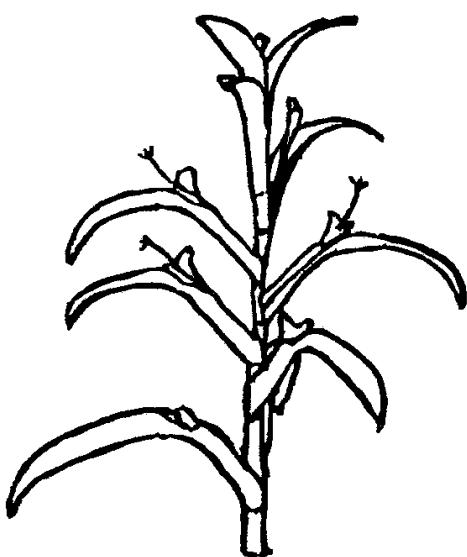
Ad. 16 and 17: Inflorescence: length of flowering part (16), diameter of flowering part (17)



Ad. 18: Inflorescence: number of bracts



Add. 19: Inflorescence: number of flowers per bract



1
one



2
more than one

IX. Literature

Baensch, U. and Baensch, U., 1994: Blooming Bromeliads, Tropic Beauty Publishers, Nassau/Bahamas, ISBN 0-9641056-0-8, BS.

Rauh, W., 1981: Bromelien, Verlag Eugen Ulmer, Stuttgart, ISBN 3-8001-6029-3, DE.

Rauh, W., 1990: The Bromeliad Lexicon, Blandford, London, GB.

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights	
1.1 Genus	<i>Guzmania</i> Ruiz et Pav. GUZMANIA
1.2 Species (indicate species)
2. Applicant (Name and address)	
3. Proposed denomination or breeder's reference	

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

4.1 Origin

(a) Seedling (indicate parent varieties)

.....

[]

(b) Mutation (indicate parent variety)

.....

[]

(c) Discovery (indicate where and when)

.....

[]

(d) Other (specify)

.....

[]

4.2 Method of reproduction

– seed

[]

– cuttings

[]

– *in vitro* propagation

[]

– other (state method)

[]

4.3 Other information

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

Characteristics	Example Varieties	Note
5.1 Plant: height (inflorescence excluded) (1)		
very short	Mandarine	1[]
short	Pax	3[]
medium	Torch	5[]
tall	Magenta	7[]
very tall	<i>Guzmania bismarckii</i>	9[]
5.2 Inflorescence: position compared to position of leaves (14)		
below	<i>Guzmania sanguinea,</i> <i>Guzmania erythrolepis</i>	1[]
same level	Mandarine	2[]
above	Torch	3[]
5.3 Inflorescence: number of flowers per bract (19)		
one	Pax, Torch	1[]
more than one	Cherry, Rana	2[]
5.4i Bract: color of upper side (24)	RHS Colour Chart (indicate reference number)	

Characteristics	Example Varieties	Note	
5.4ii Bract: color of upper side (24)			
white	Bolero	1[]	
green	<i>Guzmania septata</i>	2[]	
yellow	Pax	3[]	
orange	Samba	4[]	
orange red	Jive	5[]	
purple pink	Gwendolyn, Lipstick	6[]	
red	Empire	7[]	
red purple	Amaranth	8[]	
purple	Papilio	9[]	
6. Similar varieties and differences from these varieties			
Denomination of similar variety	Characteristic in which the similar variety is different ^{o)}	State of expression of similar variety	State of expression of candidate variety

^{o)} In the case of identical states of expressions of both varieties, please indicate the size of the difference.

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

7.3 Other information

A representative color photo of the variety should be added to 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 that question is yes, please attach a copy of such an authorization.