

UPOV

TG/UROCH(proj.1)

ORIGINAL: English

DATE: 2007-04-26

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

GENEVA

DRAFT

## UROCHLOA \*

UPOV Codes: UROCH\_BRI; UROCH\_DEC; UROCH\_DIC;  
UROCH\_HUM; UROCH\_RUZ

*Urochloa brizantha* (Hochst. ex A. Rich.) Stapf.,  
*Urochloa decumbens* Stapf. R. Webster,  
*Urochloa dictyoneura* (Fig. & De Not.) Veldkamp P.,  
*Urochloa humidicola* (Rendle) Morrone & Zuloaga.,  
*Urochloa ruziziensis* R. Germ. & Evrard.  
and their hybrids

## GUIDELINES

## FOR THE CONDUCT OF TESTS

## FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by an expert from Brazil*

*to be considered by the Technical Working Party for Agricultural Crops  
at its thirty-sixth session, to be held in Budapest, Hungary, from May 28 to June 1, 2007*

Alternative Names:\*

Botanical name	English	French	German	Spanish
<i>Urochloa brizantha</i> (Hochst. ex A. Rich.) R. D. Webster, <i>Brachiaria brizantha</i> (Hochst. ex A. Rich.) Stapf)	Bread Grass, Palisade grass, Palisade signal grass, Signal grass		Palisadengras	
<i>Urochloa decumbens</i> (Stapf) R. D. Webster, <i>Brachiaria decumbens</i> Stapf	Basilisk signal grass, Signal grass, Spreading liverseed grass, Surinam grass		Surinamgras	Pasto alambre, Zacate Surinam
<i>Urochloa dictyoneura</i> (Fig. & De Not.) Veldkamp P., <i>Brachiaria dictyoneura</i> (Fig. & De Not.) Veldkamp P.				
<i>Urochloa humidicola</i> (Rendle) Morrone & Zuloaga, <i>Brachiaria humidicola</i> (Rendle) Schweick.	Creeping signal grass, Koronivia grass			
<i>Urochloa ruziziensis</i> (R. Germ. & C. M. Evrard) Morrone & Zuloaga, <i>Brachiaria ruziziensis</i> R. Germ. & C. M. Evrard	Congo grass, Congo signal grass, Ruzi grass			

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.]

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
1. SUBJECT OF THESE TEST GUIDELINES .....	3
2. MATERIAL REQUIRED.....	3
3. METHOD OF EXAMINATION .....	3
3.1 Number of Growing Cycles.....	3
3.2 Testing Place	3
3.3 Conditions for Conducting the Examination .....	3
3.4 Test Design	4
3.5 Number of Plants / Parts of Plants to be Examined .....	4
3.6 Additional Tests.....	4
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY .....	4
4.1 Distinctness	4
4.2 Uniformity	5
4.3 Stability	5
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL.....	6
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS .....	6
6.1 Categories of Characteristics .....	6
6.2 States of Expression and Corresponding Notes .....	6
6.3 Types of Expression .....	6
6.4 Example Varieties.....	7
6.5 Legend	7
7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES .....	8
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS.....	15
8.1 Explanations covering several characteristics .....	15
8.2 Explanations for individual characteristics.....	15
9. LITERATURE	19
10. TECHNICAL QUESTIONNAIRE.....	20

## 1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Urochloa brizantha* (Hochst. ex A. Rich.) Stapf., *Urochloa decumbens* Stapf. R. Webster, *Urochloa dictyoneura* (Fig. & De Not.) Veldkamp P., *Urochloa humidicola* (Rendle) Morrone & Zuloaga., *Urochloa ruziziensis* R. Germ. & Evrard. and their hybrids.

## 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 plants.

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

Seed propagated varieties:	200 g of seed, or
Vegetatively propagated varieties:	240 plants

2.4 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.

2.5 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.6 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 two independent growing cycles.

### 3.2 *Testing Place*

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness".

### 3.3 *Conditions for Conducting the Examination*

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.3.2 The optimum stage of development for the assessment of each characteristic is indicated by a number in the second column of the Table of Characteristics. The stages of development denoted by each number are described at the end of Chapter 8.

3.3.3 The recommended method of observing the characteristic is indicated by the following key in the second column of the Table of Characteristics:

- MG: single measurement of a group of plants or parts of plants
- MS: measurement of a number of individual plants or parts of plants
- VG: visual assessment by a single observation of a group of plants or parts of plants
- VS: visual assessment by observation of individual plants or parts of plants

### 3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 240 plants, which should be divided between two or more replicates.

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*

3.5.1 Unless otherwise indicated, all observations on single plants should be made on 30 plants or parts taken from each of 30 plants and any other observations made on all plants in the test.

3.5.2 In the case of vegetatively propagated varieties, unless otherwise indicated, all observations should be made on 10 plants or parts taken from each of 10 plants, distributed over a 2 m x 2 m area or in a 10 m row.

### 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 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.3 For the assessment of uniformity of hybrid 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 30 plants, 1 off-type is allowed.

4.2.4 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, no 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 seed stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.

4.3.3 Where appropriate, or in cases of doubt, the stability of a hybrid variety may, in addition to an examination of the hybrid variety itself, also be assessed by examination of the uniformity and stability of its parent lines.

## 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) Level of ploidy (characteristic 1)

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

MG, MS, VG, VS: See Chapter 3.3.3

(+) See Explanations on the Table of Characteristics in Chapter 8.1

(a) – (e) See Explanations on the Table of Characteristics in Chapter 8.2

(DS1 - 9) See Chapter 3.3.2 and 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. VG</b>	<b>Level of ploidy</b>					
(+)						
<b>QL</b>	diploid					1
	triploid					2
	tetraploid				MIXE LN 45, Mulato II, BRS Piatã	3
	pentaploid					4
	hexaploid					5
	heptaploid					6
<b>2. VG</b>	<b>Plant: growth habit</b>					
(+)						
<b>QN</b>	<b>(a)</b> erect				BRS Piatã	1
	semi erect				MIXE LN 45, Mulato II	2
	drooping					3
<b>3. VG</b>	<b>Plant: height</b>					
(+)						
<b>QN</b>	<b>(a)</b> short					3
	medium				MIXE LN 45, Mulato II, BRS Piatã	5
	tall					7
<b>4. MS</b>	<b>Culm: number of basal tillers</b>					
<b>QN</b>	<b>(a)</b> few					3
	<b>(c)</b> medium				MIXE LN 45, BRS Piatã	5
	many				Mulato II	7



	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
<b>5.</b>	<b>MS</b>	<b>Culm: number of nodal tillers</b>					
(+)							
<b>QN</b>	<b>(a)</b>	few			Mulato II, BRS Piatã	3	
	<b>(c)</b>	medium				5	
		many				7	
<b>6.</b>	<b>VS</b>	<b>Rhizome: shape</b>					
(+)							
<b>PQ</b>	<b>(a)</b>	globose				1	
	<b>(e)</b>	intermediate			BRS Piatã	2	
		alonged			MIXE LN 45, Mulato II	3	
<b>7.</b>	<b>VS</b>	<b>Rhizome: development</b>					
(+)							
	<b>(a)</b>	absent or weak					
	<b>(e)</b>	medium					
		strong					
<b>8.</b>	<b>VS</b>	<b>Stolon: development</b>					
(+)							
<b>PQ</b>	<b>(a)</b>	absent or weak			BRS Piatã	1	
	<b>(e)</b>	medium			MIXE LN 45	2	
		strong			Mulato II	3	
<b>9.</b>	<b>MS</b>	<b>Culm: length of internode</b>					
	<b>(a)</b>	short				3	
	<b>(c)</b>	medium			MIXE LN 45	5	
		long				7	

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>10. MS Culm: diameter</b>					
(a) small					1
medium				MIXE LN 45, Mulato II	2
large					3
<b>11. VG Leaf: attitude</b>					
(+) <b>11. VG Leaf: attitude</b>					
(a) erect					1
(c) arched				MIXE LN 45, Mulato II, BRS Piatã	2
geniculate					3
<b>12. VS Leaf: density of sheath pilosity</b>					
(a) absent or very sparse					1
(c) sparse				MIXE LN 45, BRS Piatã	3
medium					5
dense				Mulato II	7
very dense					9
<b>13. VS <u>Only varieties with pilosity on leaves</u> sheath: Leaf: distribution of sheath pilosity</b>					
(a) basal					1
(c) apical				MIXE LN 45	2
on margins					3
spread				Mulato II, BRS Piatãc	4
<b>14. VG Leaf: shape of blade</b>					
(a) linear				Mulato II, BRS Piatã	1
(c) lanceolate				MIXE LN 45	2

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>15. VG</b>	<b>Leaf blade: length</b>					
<b>QN</b>	(a) short					3
	(c) medium					5
	long				Mulato II, BRS Piatã	7
<b>16. VG</b>	<b>Leaf blade: width</b>					
<b>QN</b>	(a) narrow				BRS Piatã	3
	(c) medium				MIXE LN 45	5
	broad				Mulato II	7
<b>17. VG</b>	<b>Leaf blade: density of pilosity</b>					
	(a) absent or very sparse				BRS Piatã	1
	(c) sparse				MIXE LN 45	3
	medium					5
	dense				Mulato II	7
	very dense					9
<b>18. VS</b>	<b>Leaf blade: distribution of pilosity</b>					
	(a) on the upper side				MIXE LN 45	1
	(c) on the lower side					2
	on both sides				Mulato II	3
	on the base					4
	on the apex only					5
	on the margins only					6

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>19. VG</b>	<b>Inflorescence: length of flower stem</b>					
(b)	short					3
	medium				Mulato II	5
	long				MIXE LN 45, BRS Piatã	7
<b>20. VG</b>	<b>Inflorescence: length of flower stem axis</b>					
(b)	short					3
	medium				Mulato II	5
	long				MIXE LN 45, BRS Piatã	7
<b>21. VG</b>	<b>Inflorescence: length of basal racemes</b>					
(b)	short					3
	medium				MIXE LN 45, Mulato II	5
	long				BRS Piatã	7
<b>22. VG</b>	<b>Inflorescence: shape in transverse section of rachis</b>					
(b)	triangular				MIXE LN 45	1
	winged				Mulato II	2
	crescent				BRS Piatã	3
<b>23. VG</b>	<b>Inflorescence: number of racemes</b>					
(b)	few					3
	medium				MIXE LN 45	5
	many				Mulato II, BRS Piatã	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>24. VG</b>	<b>Inflorescence: stigma pigmentation on anthesis</b>					
(b)	white				Mulato II	1
	pink					2
	purple				MIXE LN 45, BRS Piatã	3
	black					4
<b>25. VG</b>	<b>Spikelet: insertion on rachis</b>					
(+)						
(b)	uniseriate					1
	biseriate				MIXE LN 45, Mulato II	2
	combined				BRS Piatã	3
<b>26. VG</b>	<b>Spikelet: density of pilosity</b>					
(b)	absent or very sparse				MIXE LN 45, BRS Piatã	1
	sparse					3
	medium				Mulato II	5
	dense					7
	very dense					9
<b>27. VG</b>	<b>Time of flowering</b>					
(+)						
(b)	early				BRS Piatã	3
	medium					5
	late				MIXE LN 45, Mulato II	7

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>28. VG Flowering: duration</b>					
(b) short				Mulato II	3
medium				MIXE LN 45, BRS Piatã	5
long					7
<b>29. Seed: density</b>					
(+)					
sparse					3
medium				MIXE LN 45, BRS Piatã	5
dense				Mulato II	7
<b>30. Seeds: thousand seed weight</b>					
(+)					
low					3
medium				MIXE LN 45, Mulato II, BRS Piatã	5
high					7

## 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) Unless otherwise stated, all observations on the vegetative characteristics should be done at the maximum growing stage, in the first growing cycle.
- (b) On stoloniferous varieties, characteristics should be observed on rows. On caespitose growth varieties, characteristics should be observed on spaced plants.
- (c) All observations on culms and fully developed leaves should be made on the middle third of the plant.
- (d) When assessing characteristics of inflorescences, consider:

*Flower stem*: distance between the flag leaf node and the insertion of the last raceme;

*Flower stem axis*: distance between the first and the last raceme insertions;  
and

*Rachis*: axis of the spikelet insertion.

- (e) The term “stolon” means a stem growing along the surface of the ground and taking root at the nodes or apex to form new plants. The term “rhizome” means a stem growing under the surface of the ground that sends out roots from its lower portion and leaves or shoots from its upper portion.

### 8.2 *Explanations for individual characteristics*

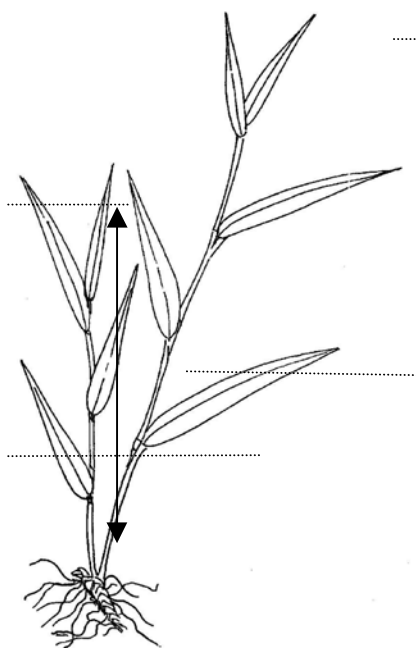
#### Ad. 1: Level of ploidy

The assessment of the level of ploidy must be done on samples of root tips taken from 10 culms, randomly chosen.

Ad. 2: Plant: growth habit

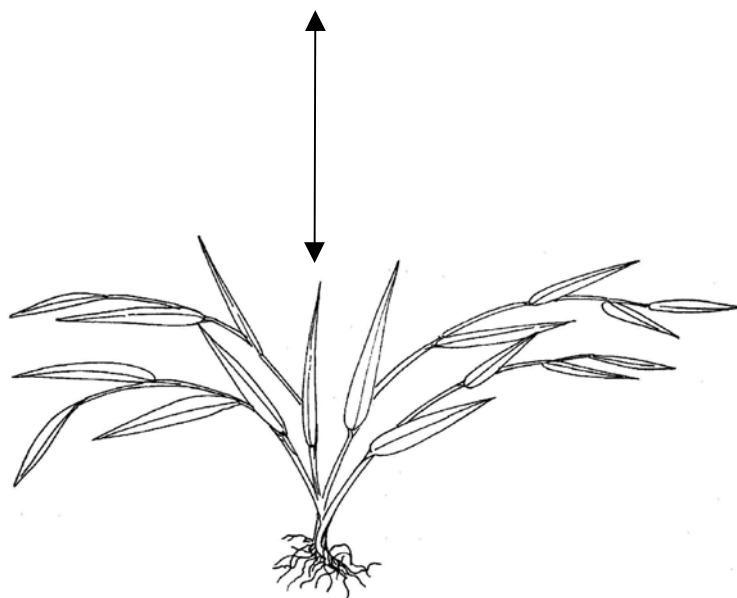
Ad. 3: Plant: height

The height of the plant should be measured in the center of the plant, at the beginning of flowering.

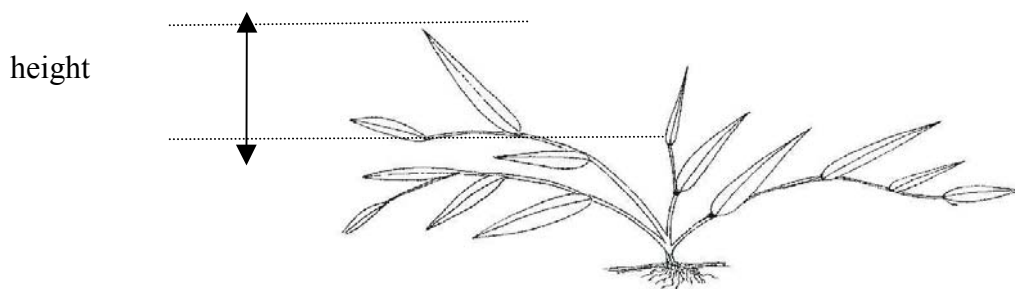


1  
erect

height



2  
semi erect



3  
drooping

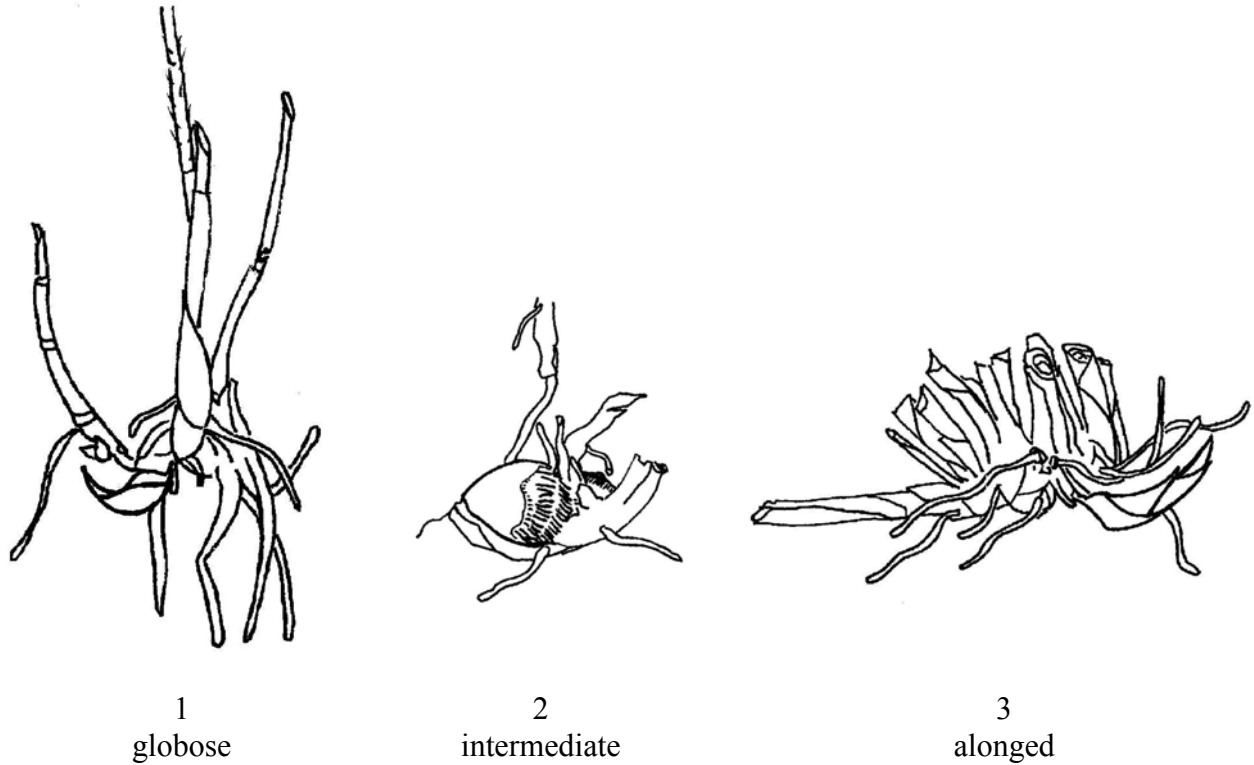
height



Ad. 5: Culm: number of nodal tillers

The assessment of the number of nodal tillers should be made 45 days after a standardization cut made at the maximum growing stage.

Ad. 6: Rhizome: shape

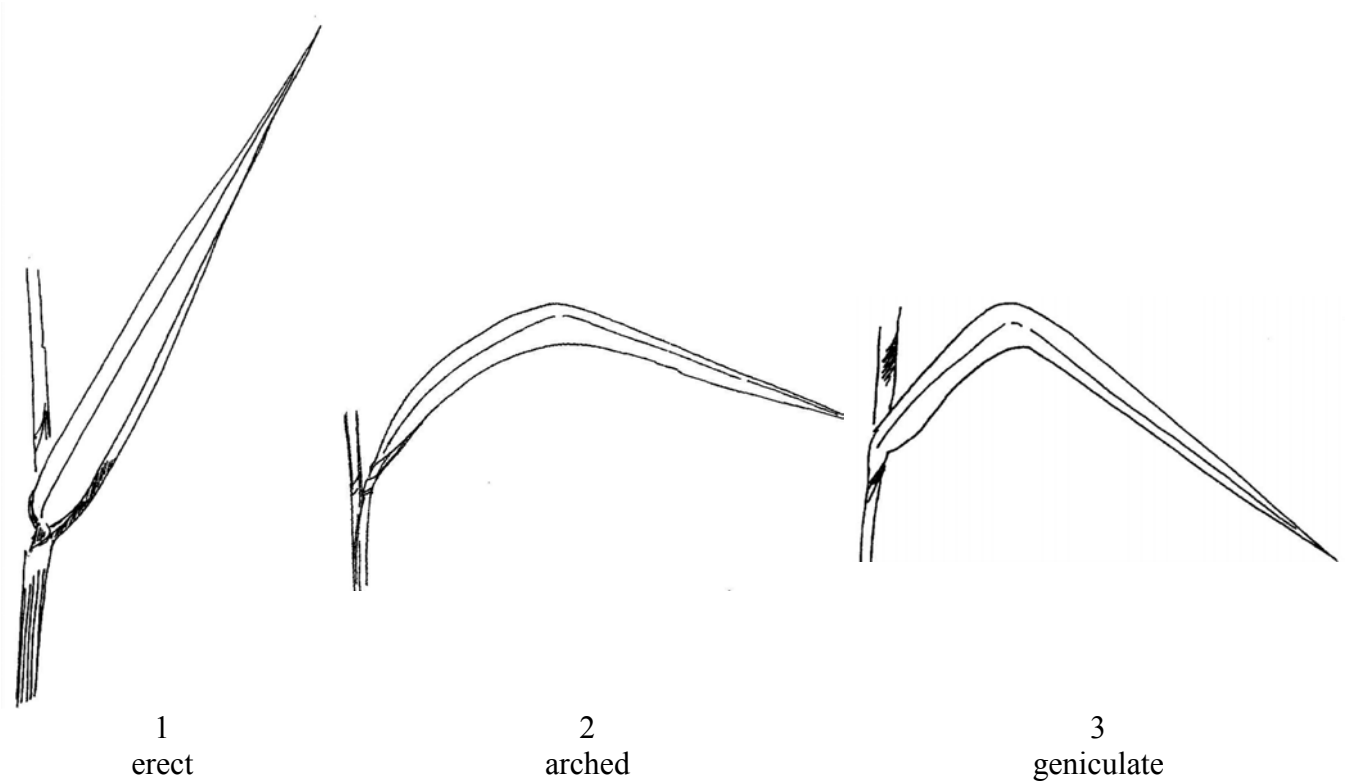


Ad. 7: Rhizome: development

Ad. 8: Stolon: development

The development of stolons and rhizomes should be assessed 3 months after sowing/planting.

Ad. 11: Leaf: attitude



Ad. 25: Spikelet: insertion on rachis

To consider:

*Combined* – spikelet that bears, simultaneously, uniseriate and biseriate insertions.

Ad. 27: Flowering: duration

The duration of flowering should be assessed on the second growing cycle.

Ad. 29: Seed: density

Ad. 30: Seeds: thousand seed weight

All observations on seeds should be made according to the ISTA International Rules for Seed Testing (ISTA 1999, ISBN 3-906549-27-5).

9. Literature

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
<p>TECHNICAL QUESTIONNAIRE          to be completed in connection with an application for plant breeders' rights</p>		
1. Subject of the Technical Questionnaire		
1.1.1 Botanical name	<i>Urochloa brizantha</i> (Hochst. ex A. Rich.) R. D. Webster ( <i>Brachiaria brizantha</i> (Hochst. ex A. Rich.) Stapf)	[ ]
1.1.2 Common name	Bread Grass, Palisade grass, Palisade signal grass, Signal grass	
1.2.1 Botanical name	<i>Urochloa decumbens</i> (Stapf) R. D. Webster ( <i>Brachiaria decumbens</i> Stapf)	[ ]
1.2.2 Common name	Basilisk signal grass, Signal grass, Spreading liverseed grass, Surinam grass	
1.3.1 Botanical name	<i>Urochloa dictyoneura</i> (Fig. & De Not.) Veldkamp P. ( <i>Brachiaria dictyoneura</i> (Fig. & De Not.) Veldkamp P.)	[ ]
1.3.2 Common name	-	
1.4.1 Botanical name	<i>Urochloa humidicola</i> (Rendle) Morrone & Zuloaga ( <i>Brachiaria humidicola</i> (Rendle) Schweick.)	[ ]
1.4.2 Common name	Creeping signal grass, Koronivia grass	
1.5.1 Botanical name	<i>Urochloa ruziziensis</i> (R. Germ. & C. M. Evrard) Morrone & Zuloaga ( <i>Brachiaria ruziziensis</i> R. Germ. & C. M. Evrard)	[ ]
1.5.2 Common name	Congo grass, Congo signal grass, Ruzi grass	
1.6 Hybrid species (please provide details)		[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>2. Applicant</p> <p>Name <input data-bbox="625 376 1350 427" type="text"/></p> <p>Address <input data-bbox="625 450 1350 624" type="text"/></p> <p>Telephone No. <input data-bbox="625 647 1350 698" type="text"/></p> <p>Fax No. <input data-bbox="625 721 1350 772" type="text"/></p> <p>E-mail address <input data-bbox="625 795 1350 846" type="text"/></p> <p>Breeder (if different from applicant) <input data-bbox="625 913 1350 965" type="text"/></p>		
<p>3. Proposed denomination and breeder's reference</p> <p>Proposed denomination (if available) <input data-bbox="625 1061 1350 1113" type="text"/></p> <p>Breeder's reference <input data-bbox="625 1167 1350 1218" type="text"/></p>		

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

#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 Seed-propagated varieties

(a) Self-pollination  [ ]

(b) Cross-pollination  [ ]  
(i) population  [ ]  
(ii) synthetic variety  [ ]

(c) Hybrid  [ ]  
(see below)

(d) Other  [ ]  
(please provide details)

4.2.2 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:
-------------------------	-----------------	-------------------

In the case of hybrid varieties the production scheme for the hybrid should be provided on a separate sheet. This should provide details of all the parent lines required for propagating the hybrid e.g.

Single Hybrid

(... female parent ...) x (... male parent ...)

Three-Way Hybrid

(... female line ...) x (... male line ...)

=> single hybrid used as female parent x (... male parent ...)

and should identify in particular:

- (a) any male sterile lines
- (b) maintenance system of male sterile lines.

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 Level of ploidy</b> (1)		
diploid		1 [ ]
triploid		2 [ ]
tetraploid	MIXE LN 45, Mulato II, BRS Piatã	3 [ ]
pentaploid		4 [ ]
hexaploid		5 [ ]
heptaploid		6 [ ]
<b>5.2 Plant: growth habit</b> (2)		
erect	BRS Piatã	1 [ ]
semi erect	MIXE LN 45, Mulato II,	2 [ ]
drooping		3 [ ]

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

Characteristics	Example Varieties	Note
<b>5.3 Stolon: development (8)</b>		
absent or weak	BRS Piatã	1 [ ]
medium	MIXE LN 45	2 [ ]
strong	Mulato II	3 [ ]
<b>5.4 Leaf blade: density of pilosity (17)</b>		
absent or very sparse	BRS Piatã	1 [ ]
sparse	MIXE LN 45	3 [ ]
medium		5 [ ]
dense	Mulato II	7 [ ]
very dense		9 [ ]
<b>5.5 Time of flowering (27)</b>		
early	BRS Piatã	3 [ ]
medium		5 [ ]
late	MIXE LN 45, Mulato II	7 [ ]



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

6. Similar varieties and differences from these varieties

*Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.*

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the <b>similar</b> variety(ies)	Describe the expression of the characteristic(s) for <b>your</b> candidate variety
---	---	--	--

*Example*

--

--

<p>Comments:</p>
------------------



TECHNICAL 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. 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 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]