TG/UROCH(proj.8)
ORIGINAL: English
DATE: 2014-10-09

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

Urochloa

UPOV Code: UROCH_RUZ; UROCH_DIC; UROCH_HUM; UROCH_DEC; UROCH_BRI; UROCH_RBR; UROCH_RDB

Urochloa brizantha (Hochst. ex A. Rich.) R. D. Webster;
Urochloa decumbens (Stapf) R. D. Webster;
Urochloa dictyoneura (Fig. & De Not.) Veldkamp;
Urochloa humidicola (Rendle) Morrone & Zuloaga;
Urochloa ruziziensis (R. Germ. & C. M. Evrard) Crins;
Urochloa ruziziensis (R. Germ. & C. M. Evrard) Crins x U. brizantha (Hochst. ex A. Rich.) R. D. Webster;
Urochloa ruziziensis x Urochloa decumbens x Urochloa brizantha

[*]

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by (an) expert(s) from Brazil

to be considered by the

Technical Working Party for Agricultural Crops
at its forty-third session
to be held in Mar del Plata, Argentina
from 2014-11-17
to 2014-11-21

Alternative Names:[*]

Botanical name	*English*	*French*	*German*	*Spanish*
Urochloa brizantha (Hochst. ex A. Rich.) R. D. Webster, Brachiaria brizantha (Hochst. ex A. Rich.) Stapf, Panicum brizanthum Hochst. ex A. Rich.	Bread Grass, Palisade grass, Palisade grass, Palisade signal grass, Signal Grass	Signal	Palisadengrass	Pasto alambre, Pasto señal, Zacate señal, Zacate signal, Brachiaria

[*] 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.]

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Urochloa decumbens (Stapf) R. D. Webster, Brachiaria decumbens Stapf	Basilisk signal grass, Signal grass, Spreading liverseed grass, Surinam grass		Surinamgrass	Zacate Surinam, Pasto chontalpo, Pasto de la palizada, Pasto de las orillas, Pasto peludo, Pasto prodigio, Zacate prodigio, Brachiaria
Urochloa dictyoneura (Fig. & De Not.) Veldkamp , Brachiaria dictyoneura (Fig. & De Not.) Stapf, Panicum dictyoneurum Fig. & De Not.	Koronivia grass			
Urochloa humidicola (Rendle) Morrone & Zuloaga, Brachiaria humidicola (Rendle) Schweick.; Panicum humidicola Rendle	Creeping signal grass, Koronivia grass	Koronivia		Braquiaria dulce, Kikuyu de la Amazonía, Pasto humidícola, Pasto humidícola dulce
Urochloa ruziziensis (R. Germ. & C. M. Evrard) Crins, Brachiaria ruziziensis R. Germ. & C. M. Evrard	Congo grass, Congo signal grass, Ruzi grass			Congo señal, Gambutera, Kenia, Pasto Congo, Pasto ruzi, Brachiaria
Urochloa ruziziensis (R. Germ. & C. M. Evrard) Crins x U. brizantha (Hochst. ex A. Rich.) R. D. Webster, Brachiaria ruziziensis R. Germ. & C. M. Evrard x B. brizantha (Hochst. ex A. Rich.) Stapf				
Urochloa ruziziensis x Urochloa decumbens x Urochloa brizantha, Brachiaria ruziziensis x Brachiaria decumbens x Brachiaria brizantha				

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.

TABLE OF CONTENTS PAGE

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of Urochloa brizantha (Hochst. ex A. Rich.) R. D. Webster, Brachiaria brizantha (Hochst. ex A. Rich.) Stapf, Panicum brizanthum Hochst. ex A. Rich.; Urochloa decumbens (Stapf) R. D. Webster, Brachiaria decumbens Stapf; Urochloa dictyoneura (Fig. & De Not.) Veldkamp , Brachiaria dictyoneura (Fig. & De Not.) Stapf, Panicum dictyoneurum Fig. & De Not.; Urochloa humidicola (Rendle) Morrone & Zuloaga, Brachiaria humidicola (Rendle) Schweick.; Panicum humidicola Rendle; Urochloa ruziziensis (R. Germ. & C. M. Evrard) Crins x U. brizantha (Hochst. ex A. Rich.) R. D. Webster, Brachiaria ruziziensis R. Germ. & C. M. Evrard x B. brizantha (Hochst. ex A. Rich.) Stapf; Urochloa ruziziensis x Urochloa decumbens x Urochloa brizantha, Brachiaria ruziziensis x Brachiaria decumbens x Brachiaria brizantha; Urochloa ruziziensis (R. Germ. & C. M. Evrard) Crins, Brachiaria ruziziensis R. Germ. & C. M. Evrard.

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.

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

500 g 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

3.1.1 The minimum duration of tests should normally be two independent growing cycles.

3.1.2 The two independent growing cycles should be in the form of two separate plantings.

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.

3.4 Test Design

3.4.1 For apomictic varieties, each test should be designed to result in a total of at least 40 spaced plants which should be divided between at least 2 replicates.

3.4.2 For cross-pollinated varieties, each test should be designed to result in a total of at least 60 spaced plants which should be divided between at least 3 replicates.

3.4.3 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 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.

4.1.4 Number of Plants / Parts of Plants to be Examined

In the case of apomictic varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observations made on all plants in the test, disregarding any off-type plants.

In the case of cross-pollinated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 60 plants or parts taken from each of 60 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation 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

Type of observation: visual (V) or measurement (M)

“Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.”

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

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 apomictic varieties, a population standard of 2% and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 40 plants, 2 off-types are allowed.

4.2.4 The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction. In the case of single cross hybrids, the uniformity standards are set out in Section 4.2.2

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 further examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial 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: hairiness (characteristic 12)
(b) Inflorescence: shape of rachis in transverse section (characteristic 17)
(c) Inflorescence: stigma color at anthesis (characteristic 18)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

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

6.2.1 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.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	Note
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	Note
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 “Development of Test Guidelines”.

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 4.1.5

(a)-(c) See Explanations on the Table of Characteristics in Chapter 8.

(+) See Explanations on the Table of Characteristics in Chapter 8.

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*) QN VG|B (+) (a) **Plant: growth habit**					
erect				BRS Piatã, CIAT BR02/1718	1
semi erect				BRS Tupi, Llanero	3
semi prostate				MIXE LN 45, Mulato II	5
prostrate				Humidícola comum	7
2. (*) QN MS|B (+) (a) **Plant: height**					
short				BRS Tupi	3
medium				BRS Piatã, MIXE LN 45, Mulato II	5
tall				CIAT BR02/1718, Xaraés	7
3. (*) QN MS|B **Stolon: length of internode**					
absent or very short				BRS Piatã	1
short				Mulato II	3
medium				Humidícola comum	5
long				BRS Tupi	7
4. (*) QN MS|B (+) **Culm: length of internode**					
short				BRS Tupi	3
medium				MIXE LN 45	5
long				Xaraés	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. QN MS|B **Culm: diameter**					
small					1
medium				MIXE LN 45, Mulato II	2
large					3
6. (*) QN VG|B (+) (a) (b) **Flag leaf: curvature of leaf blade**					
weak					1
medium					2
strong					3
7. (*) QN VG|B **Leaf sheath: density of hairs**					
absent or sparse				BRS Piatã	1
medium					2
dense				Mulato II	3
8. (*) PQ VG|B (a) (b) **Flag leaf: distribution of hairs on sheath**					
at base					1
at apex				MIXE LN 45	2
on margins					3
throughout				BRS Piatã, Mulato II	4

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9. (*) PQ VG|B (+) **Flag leaf: shape of blade**					
narrow lanceolate				BRS Piatã	1
medium lanceolate				MIXE LN 45, Mulato II	2
broad lanceolate					3
10. QN MS|B **Leaf blade: length**					
short				Basilisk, Humidícola comum	3
medium				MIXE LN 45	5
long				BRS Piatã, Mulato II	7
11. (*) QN MS|B (a) (b) **Leaf blade: width**					
narrow				BRS Piatã	3
medium				MIXE LN 45	5
broad				Mulato II	7
12. (*) QL VG|B **Leaf blade: hairiness**					
absent				BRS Tupi	1
present				Mulato II	9
13. (*) PQ VG|B **Leaf blade: distribution of hairs**					
on upper surface only				BRS Tupi, Llanero	1
on lower surface only				MIXE LN 45	2
on margins only				Marandú, Xaraés	3
on both surfaces				Mulato II, Basilsk	4

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14. (*) QN MS|B (c) **Inflorescence: length of peduncle**					
short					3
medium				Mulato II	5
long				BRS Piatã, MIXE LN 45	7
15. QN MS|B (c) **Inflorescence: length of rachis**					
short				Mulato II	3
medium				Llanero	5
long				Marandú	7
16. QN MS|B (c) **Inflorescence: length of basal racemes**					
short				BRS Tupi, Humidícola comum	3
medium				MIXE LN 45, Mulato II	5
long				Marandú	7
17. (*) PQ VG|B (+) **Inflorescence: shape of rachis in transverse section**					
triangular				MIXE LN 45	1
winged				Mulato II	2
crescent				BRS Piatã	3
18. (*) PQ VG|B (+) **Inflorescence: stigma color at anthesis**					
white				Mulato II	1
light purple				Llanero	2
medium purple				BRS Piatã, MIXE LN 45	3
dark purple				Marandú, Toledo	4

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. (*) QN VG|B **Spikelet: pubescence**					
absent or very sparse				BRS Piatã	1
sparse				Humidícola comum	3
medium				Mulato II, Xaraés	5
dense				BRS Tupi, Llanero	7
20. QN VG|B **Glume: anthocyanin coloration**					
absent or very weak				BRS Piatã	1
weak				Basilisk	3
medium				Marandú	5
strong				Llanero	7
21. (*) QN MG|B (+) **Time of beginning of flowering**					
early				BRS Piatã, Basilisk, Llanero	3
medium				Marandú	5
late				Xaraés	7

8. Explanations on the Table of Characteristics

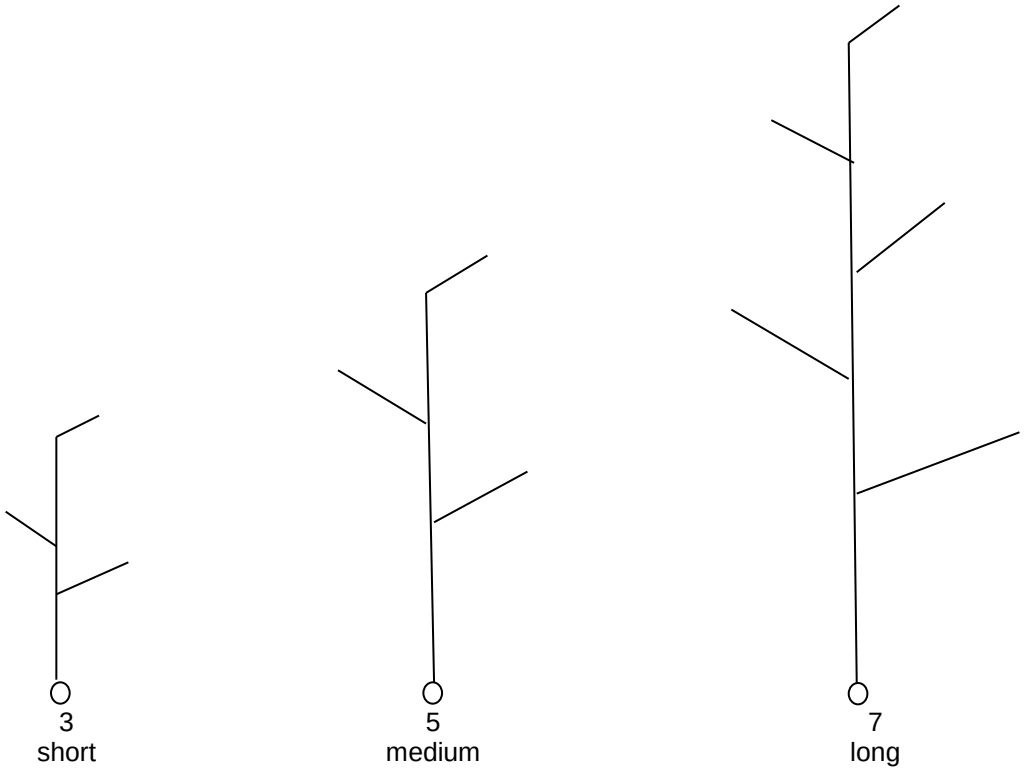
8.1 Explanations covering several characteristics

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

(a) Observations should be made at full flowering stage.

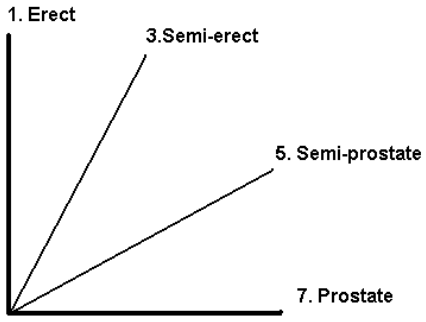
(b) Observations on culms and fully developed leaves should be made on the second leaf from the top, in the main culm.

(c)



8.2 Explanations for individual characteristics

Ad. 1: Plant: growth habit



Ad. 2: Plant: height

The height of the plant should be measured in the center of the plant, at the beginning of flowering, from the third fully developed leaf to the level ground, excluding inflorescences. To be observed in first and second year.

Ad. 4: Culm: length of internode

The assessment of the length of internode should be made medium third of plant; it does not refer to floral culm.

Ad. 6: Flag leaf: curvature of leaf blade

1
weak

2
medium

3
strong

Ad. 9: Flag leaf: shape of blade

narrow lanceolate
1

medium lanceolate
2

broad lanceolate
3

Ad. 17: Inflorescence: shape of rachis in transverse section

triangular
1

winged
2

crescent
3

Ad. 18: Inflorescence: stigma color at anthesis

To be observed at anthesis.

Ad. 21: Time of beginning of flowering

The time of beginning of flowering should be assessed when 50% of the plants have at least one inflorescence fully emerged.

9. Literature

Assis, G.M.L. de, Euclydes, R.F., Cruz, C.D. and Valle, C. B. do. 2003: Discriminação de Espécies de Brachiaria Baseada em Diferentes Grupos de Caracteres Morfológicos. R. Bras. Zootec., v.32, n.3, pp.576-584

Dahmer, N., Schifino-Wittman, M.T., Dall'Agnol, M., Castro, B de. Cytogenetic data for Paspalum notatum Flügge accessions. Sci. Agric., Piracicaba, v.65, n.4, p.381-388,2008.

Miles, J. W., Maass, B. L. and Valle, C. B. do. eds. 1996: Brachiaria: Biology, Agronomy, and Improvement. CIAT Publication No. 259

Pozzobon, M.T., Valls, J.M., 1997: Chromosome number in germplasm accessions of Paspalum notatum (Gramineae). Braz. J. Genet., Ribeirão preto, v.20, n.1, p.29-34

Simioni, C., Schifino-Wittman, M.T., Dall'Agnol, M.: 2006 Sexual polyploidization in red clover, Sci. Agric., Piracicaba, v.63, n.1, p.26-31

10. Technical Questionnaire

TECHNICAL 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	Urochloa decumbens (Stapf) R. D. Webster	[ ]
1.1.2	Common Name	Basilisk signal grass, Signal grass, Spreading liverseed grass, Surinam grass	
1.2.1	Botanical Name	Urochloa humidicola (Rendle) Morrone & Zuloaga	[ ]
1.2.2	Common Name	Creeping signal grass, Koronivia grass	
1.3.1	Botanical Name	Urochloa ruziziensis (R. Germ. & C. M. Evrard) Morrone & Zuloaga	[ ]
1.3.2	Common Name	Congo grass, Congo signal grass, Ruzi grass	
1.4.1	Botanical Name	Urochloa dictyoneura (Fig. & De Not.) Veldkamp	[ ]
1.4.2	Common Name	Koronivia grass	
1.5.1	Botanical Name	Urochloa brizantha (Hochst. ex A. Rich.) R. D. Webster,	[ ]
1.5.2	Common Name	Bread Grass, Palisade grass, Palisade grass, Palisade signal grass, Signal Grass	
1.6.1	Botanical Name	Urochloa ruziziensis (R. Germ. & C. M. Evrard) Crins x U. brizantha (Hochst. ex A. Rich.) R. D. Webster	[ ]
1.6.2	Common Name		
1.7.1	Botanical Name	Urochloa ruziziensis x Urochloa decumbens x Urochloa brizantha	[ ]
1.7.2	Common Name		

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

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)

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

(b) partially known cross [ ]
(please state known parent variety(ies))

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

(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) apomitic [ ]
(b) non-apomitic [ ]
(c) Other [ ]
(please provide details)

4.2.2 Other
(please provide details) [...]

4.2.3 Ploidy [ ]

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

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

Three-Way Hybrid

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

(……..……..) x (……..……..)
single hybrid used as female parent 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
5.1 (12)	**Leaf blade: hairiness**		
	absent	BRS Tupi	1[ ]
	present	Mulato II	9[ ]
5.2 (17)	**Inflorescence: shape of rachis in transverse section**		
	triangular	MIXE LN 45	1[ ]
	winged	Mulato II	2[ ]
	crescent	BRS Piatã	3[ ]
5.3 (18)	**Inflorescence: stigma color at anthesis**		
	white	Mulato II	1[ ]
	light purple	Llanero	2[ ]
	medium purple	BRS Piatã, MIXE LN 45	3[ ]
	dark purple	Marandú, Toledo	4[ ]

6. Similar varieties and differences from these varieties

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

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the **similar** variety(ies)	Describe the expression of the characteristic(s) for **your** candidate variety
Example	*Inflorescence: stigma color at anthesis*	*dark purple*	*light purple*

Comments:

7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [ ] No [ ]

(If yes, please provide details)

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

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

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.

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