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**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 OBTENCIONES  
VEGETALES**

**DRAFT**

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

**SUGARCANE**  
**(*Saccharum L.*)**

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 vegetatively propagated varieties of *Saccharum* L. of the family *Gramineae*(*Poaceae*).

## 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 States other than that in which the testing takes place must ensure that all customs formalities are complied with. As a minimum, the following quantity of plant material is recommended:

12 seed pieces with 3 buds each, properly packaged to minimize damage to the buds.

2. The seed pieces should be supplied from plants about 8 to 12 months old, visibly healthy, not lacking in vigor or affected by any important pests or diseases. It should preferably not be obtained from *in vitro* propagation.

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. The tests should normally be conducted over one growing cycle. 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 test should be carried out under conditions ensuring normal growth. 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 6 stalks, all from different plants, divided in two or more replicates. 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. All observations for qualitative characteristics should be made on 6 stalks. For quantitative characteristics 24 stalks from different plants should be used. Plants should be observed in first growth (plant cane) and all characteristics should be described on plants between 10 to 12 months of age.

2. All observations determined by measurements, weighing or counting, should be made on 24 stalks.
3. 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 6 stalks, the maximum number of off-types allowed would be 1 (one).
4. All observations on the stem should be made on a representative stem.
5. Unless otherwise indicated all observations on the node and internode should be made on the longest internode of the representative stem.
6. All observations on the leaf blade and leaf sheath should be made on fully extended leaves, on the upper part of stalks of vegetative stage.
7. The cane top is defined as the region between the youngest exposed visible dewlap and the insertion of the fourth youngest fully extended leaf (leaf + 4) in the stem.

#### V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics that are suitable for grouping purposes are those that are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression are fairly evenly distributed throughout the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:
  - (a) Plant: adherence of leaf sheath (characteristic 2))
  - (b) Internode: shape (characteristic 10)
  - (c) Internode: color where exposed to the sun (characteristic 12)
  - (d) Internode: color where not exposed to sun (characteristic 13)
  - (e) Internode: zigzag alignment (characteristic 15)
  - (f) Node: shape of bud (characteristic 21)
  - (g) Leaf sheath: color of dewlap (characteristic 42)
  - (h) Leaf blade: width in the middle of the length (characteristic 44)

#### 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.

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 caracteres

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>1. Plant: stool growth habit</b>	<b>Plante: port de la souche</b>	<b>Pflanze: Wuchstyp der Mutterpflanze</b>	<b>Planta: porte de la cepa</b>		
erect	dressé	aufrecht	erecto		1
semi-erect	demi-dressé	halbaufrecht	semierecto		3
intermediate	demi-dressé à demi-étalé	mittel	intermedio		5
semi-prostrate	demi-étalé	halbliiegend	semipostrado		7
prostrate	étalé	liegend	postrado		9
<b>2 (*) (+) Plant: adherence of leaf sheath</b>	<b>Plante: adhérence de la gaine de la feuille</b>	<b>Pflanze: Anhaften der Blattspreite</b>	<b>Planta: adherencia de la vaina</b>		
weak	faible	gering	débil		3
medium	moyenne	mittel	media		5
strong	forte	stark	fuerte		7
<b>3. Plant: tillering</b>	<b>Plante: tallage</b>	<b>Pflanze: Bestockung</b>	<b>Planta: macollaje</b>		
low	faible	niedrig	bajo		3
medium	moyen	mittel	medio		5
high	fort	hoch	alto		7
<b>4. Plant: number of suckers</b>	<b>Plante: nombre du drageonnement</b>	<b>Pflanze: Anzahl Stockausschlag</b>	<b>Planta: número de chupones</b>		
very few	très faible	sehr wenig	muy pocos		1
few	faible	wenig	pocos		3
medium	moyen	mittel	medios		5
many	fort	viel	muchos		7
very many	très fort	sehr viel	muchísimos		9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>5. Plant: leaf canopy</b>	<b>Plante: feuillage</b>	<b>Pflanze: Blattlaub</b>	<b>Planta: cierre</b>		
very sparse	très clairsemé	sehr locker	muy abierto		1
sparse	clairsemé	locker	abierto		3
medium	moyen	mittel	medio		5
dense	épais	dicht	denso		7
very dense	très épais	sehr dicht	muy denso		9
<b>6. Plant: intensity of green color of leaf canopy</b>	<b>Plante: intensité de la couleur verte du feuillage</b>	<b>Pflanze: Intensität der Grünfärbung des Blattlaubs</b>	<b>Planta: intensidad del color verde del cierre</b>		
light	pâle	hell	claro		3
medium	moyenne	mittel	medio		5
dark	foncée	dunkel	oscuro		7
<b>7. Stem: culm height (base to TVD leaf)</b> (+)	<b>Tige: hauteur du chaume (de la base à la plus haute feuille dont l'ochréa est visible)</b>	<b>Strunk: Halmhöhe (Basis des TVD-Blatts)</b>	<b>Tronco: altura de la caña (desde la base hasta el collar superior)</b>		
very short	très court	sehr kurz	muy corta		1
short	court	kurz	corta		3
medium	moyen	mittel	mediana		5
long	long	lang	larga		7
very long	très long	sehr lang	muy larga		9
<b>8. Internode: length on the bud side at mid height</b>	<b>Entre-noeud: longueur du côté du bourgeon à mi-hauteur</b>	<b>Internodium: Länge an der Knospenseite in der mittleren Höhe</b>	<b>Entrenudo: longitud del lado de la yema a media altura</b>		
very short	très court	sehr kurz	muy corta		1
short	court	kurz	corta		3
medium	moyen	mittel	mediana		5
long	long	lang	larga		7
very long	très long	sehr lang	muy larga		9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>9. Internode: diameter in the middle part of the internode (as for 8)</b>	<b>Entre-noeud: diamètre dans la partie moyenne de l'entre-noeud (pour 8)</b>	<b>Internodium: Durchmesser im mittleren Teil des Internodiums (wie für 8)</b>	<b>Entrenudo: diámetro en la parte media del entrenudo (como para 8)</b>		
thin	fin	dünn	delgado		3
medium	moyen	mittel	medio		5
thick	épais	dick	grueso		7
<b>10 Internode: shape (*)(+)</b>	<b>Entre-noeud: forme</b>	<b>Internodium: Form</b>	<b>Entrenudo: forma</b>		
cylindrical	cylindrique	zylindrisch	cilíndrica		1
tumescient	renflée	geschwollen	hinchada		2
bobbin-shaped	en forme de bobine	spulenförmig	abobinada		3
conoidal	conoïde	kegelförmig	conoidal		4
obconoidal	obconique	verkehrt kegelförmig	conoidal invertida		5
concave-convex	concave-convexe	konkav-konvex	cóncava-convexa		6
<b>11. Internode: cross-section</b>	<b>Entre-noeud: section transversale</b>	<b>Internodium: Querschnitt</b>	<b>Entrenudo: sección transversal</b>		
circular	circulaire	rund	circular		1
ovate	ovoïde	eiförmig	ovada		2
<b>12 Internode: color where <u>exposed</u> to sun (*)(+)</b>	<b>Entre-noeud: couleur du côté <u>exposé</u> au soleil</b>	<b>Internodium: Farbe an den der Sonne <u>ausgesetzten</u> Stellen</b>	<b>Entrenudo: color de la parte <u>expuesta</u> al sol</b>		
RHS Color chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
<b>13. Internode: color where <u>not exposed</u> to sun (*)(+)</b>	<b>Entre-noeud: couleur du côté <u>non exposé</u> au soleil</b>	<b>Internodium: Farbe an den der Sonne <u>nicht ausgesetzten</u> Stellen</b>	<b>Entrenudo: color de la parte <u>no expuesta</u> al sol</b>		
RHS Color chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		



English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>14. Internode: depth of growth crack</b> (+)	<b>Entre-noeud: profondeur de la fente de croissance</b>	<b>Internodium: Tiefe des Wachstumsrisses</b>	<b>Entrenudo: profundidad de la rajadura de crecimiento</b>		
absent or very shallow	absente ou très peu profonde	fehlend oder sehr flach	ausente o muy poco profunda		1
shallow	peu profonde	flach	poco profunda		2
deep	profonde	tief	profunda		3
<b>15. Internode: zigzag alignment</b> (* )	<b>Entre-noeud: alignement en zigzag</b>	<b>Internodium: Zickzack-ausrichtung</b>	<b>Entrenudo: alineación en zig zag</b>		
absent or very weakly expressed	absent ou très peu exprimé	fehlend oder sehr schwach ausgeprägt	ausente o expresada muy débilmente		1
weakly expressed	peu exprimé	schwach ausgeprägt	débilmente expresada		3
moderately expressed	demi-exprimé	mittel ausgeprägt	moderadamente expresada		5
strongly expressed	fortement exprimé	stark ausgeprägt	fuertemente expresada		7
<b>16. Internode: appearance (rind surface)</b> (+)	<b>Entre-noeud: apparence (surface de l'écorce)</b>	<b>Internodium: Aussehen (Oberfläche der Schale)</b>	<b>Entrenudo: aspecto (superficie de la corteza)</b>		
smooth	lisse	glatt	lisa		1
medium	moyenne	mittel	media		3
rough (corky)	rugueuse (subéreuse)	rauh (korkartig)	rugosa (suberosa)		5
<b>17. Internode: waxiness</b> (+)	<b>Entre-noeud: pruine</b>	<b>Internodium: Wachsschicht</b>	<b>Entrenudo: cerosidad</b>		
absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil		1
weak	faible	gering	débil		3
medium	moyenne	mittel	media		5
strong	forte	stark	fuerte		7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>18. Node: width of root band</b>	<b>Noeud: largeur de la zone radicaire</b>	<b>Nodium: Breite der Wurzelzone</b>	<b>Nudo: anchura de la banda radicular</b>		
(+)					
narrow	étroite	schmal	estrecha		3
medium	moyenne	mittel	mediana		5
broad	large	breit	ancha		7
<b>19. Node: color of root band</b>	<b>Nœud: couleur de la zone radicaire</b>	<b>Nodium: Farbe der Wurzelzone:</b>	<b>Nudo: color de la banda radicular</b>		
(+)					
RHS Color chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
<b>20. Node: wax ring</b>	<b>Nœud: zone cireuse</b>	<b>Nodium: Wachsring</b>	<b>Nudo: anillo ceroso</b>		
(+)					
absent or very narrow	absente ou très étroite	fehlend oder sehr schmal	ausente o muy estrecha		1
narrow	étroite	schmal	estrecha		3
medium	moyenne	mittel	mediana		5
wide	large	breit	ancha		7
very wide	très large	sehr breit	muy ancha		9

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>21.</b> (* (+)	<b>Node: shape of bud</b>	<b>Nœud: forme du bourgeon</b>	<b>Nodium: Form der Knospe</b>	<b>Nudo: forma de la yema</b>	
	triangular-pointed	triangulaire-pointue	dreieckig-spitz	triangular-puntiaguda	1
	oval	ovale	elliptisch	oval	2
	obovate	obovale	verkehrt eiförmig	trasovada	3
	pentagonal	pentagonale	fünfeckig	pentagonal	4
	rhomboid	rhomboïdale	rhomboid	romboide	5
	round	ronde	rund	redonda	6
	ovate	ovoïde	eiförmig	ovada	7
	rectangular	rectangulaire	rechteckig	rectangular	8
	beaked	becquée	schnabelförmig	en pico	9
<b>22.</b> (+)	<b>Node: width of bud, excluding wings</b>	<b>Nœud: largeur du bourgeon, à l'exclusion des ailes</b>	<b>Nodium: Breite der Knospe, ohne Flügel</b>	<b>Nudo: anchura de la yema, excluyendo las alas</b>	
	very narrow	très étroit	sehr schmal	muy estrecha	1
	narrow	étroit	schmal	estrecha	3
	medium	moyen	mittel	mediana	5
	wide	large	breit	ancha	7
	very wide	très large	sehr breit	muy ancha	9
<b>23.</b> (+)	<b>Node: bud prominence (on second senescent leaf from the top)</b>	<b>Nœud: proéminence du bourgeon (sur la deuxième feuille sénescence à partir du sommet)</b>	<b>Nodium: Knospenausbildung (am zweiten alternden Blatt von oben)</b>	<b>Nudo: Prominencia de la yema (en la segunda hoja senescente a partir de la parte superior)</b>	
	very weak	très faible	sehr gering	muy débil	1
	weak	faible	gering	débil	3
	medium	moyenne	mittel	media	5
	strong	forte	stark	fuerte	7
	very strong	très forte	sehr stark	muy fuerte	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>24.</b>	<b>Node: depth of bud groove</b>	<b>Nœud: profondeur du sillon du bourgeon</b>	<b>Nodium: Tiefe der Knospenfurche</b>	<b>Nudo: profundidad del canal de la yema</b>		
(+)						
	absent or very shallow	absent ou très peu profond	fehlend oder sehr flach	ausente o muy poco profundo		1
	shallow	peu profond	flach	poco profundo		3
	medium	moyen	mittel	medio		5
	deep	profond	tief	profundo		7
<b>25.</b>	<b>Node: bud tip in relation to growth ring</b>	<b>Nœud: sommet du bourgeon par rapport à l'anneau de croissance</b>	<b>Nodium: Knospenspitze im Verhältnis zum Wachstumsring</b>	<b>Nudo: ápice de la yema en relación con el anillo de crecimiento</b>		
(+)						
	clearly below	nettement en-dessous	deutlich unterhalb	claramente por debajo		1
	intermediate	intermédiaire	in der Mitte	intermedio		2
	clearly above	nettement en-dessus	deutlich oberhalb	claramente por encima		3
<b>26.</b>	<b>Node: pubescence on the bud</b>	<b>Nœud: pilosité sur le bourgeon</b>	<b>Nodium: Behaarung an der Knospe</b>	<b>Nudo: pubescencia en la yema</b>		
(+)						
	absent	absente	fehlend	ausente		1
	present	présente	vorhanden	presente		9
<b>27.</b>	<b>Node: position of the pubescence on the bud (where the characteristics 26 is "present")</b>	<b>Nœud: position des poils sur le bourgeon (où le caractère 26 est "présente")</b>	<b>Nodium: Lage der Behaarung an der Knospe (wo das Merkmal 26 "vorhanden" ist)</b>	<b>Nudo: posición de la pubescencia en la yema (donde la característica 26 sea "presente")</b>		
(+)						
	basal	basale	an der Basis	basal		1
	apical	apicale	an der Spitze	apical		2
	lateral	latérale	seitlich	lateral		3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>28.</b>	<b>Node: bud cushion</b>	<b>Nœud: coussinet du</b>	<b>Nodium:</b>	<b>Nudo: cojín de la</b>		
(+)	<b>(space between base of bud and leaf scar)</b>	<b>bourgeon (espace entre la base du bourgeon et la cicatrice foliaire)</b>	<b>Knospenswulst (Abstand zwischen der Knospensbasis und der Blattnarbe)</b>	<b>yema (espacio entre la base de la yema y la cicatriz foliar)</b>		
	absent or very narrow	absent ou très étroit	fehlend oder sehr schmal	ausente o muy estrecho		1
	narrow	étroit	schmal	estrecho		3
	medium	moyen	mittel	mediano		5
	broad	large	breit	ancho		7
	very broad	très large	sehr breit	muy ancho		9
<b>29.</b>	<b>Node: distribution of bud wing</b>	<b>Nœud: distribution de l'aile du bourgeon</b>	<b>Nodium: Verteilung des Knospensflügels</b>	<b>Nudo: distribución de las alas de la yema</b>		
(+)						
	apical	apicale	an der Spitze	apical		1
	median	médiane	in der Mitte	mediana		2
	sub-median	sous-médiane	unterhalb der Mitte	submediana		3
<b>30.</b>	<b>Node: width of bud wing</b>	<b>Nœud: largeur de l'aile du bourgeon</b>	<b>Nodium: Breite des Knospensflügels</b>	<b>Nudo: anchura del ala de la yema</b>		
(+)						
	narrow	étroite	schmal	estrecha		3
	medium	moyenne	mittel	mediana		5
	wide	large	breit	ancha		7
<b>31.</b>	<b>Leaf sheath: length (TVD leaf)</b>	<b>Gaine de la feuille: longueur (plus haute feuille dont l'ochréa est visible)</b>	<b>Blattscheide: Länge (TVD-Blatt)</b>	<b>Vaina: longitud (collar superior)</b>		
(+)						
	very short	très courte	sehr kurz	muy corta		1
	short	courte	kurz	corta		3
	medium	moyenne	mittel	mediana		5
	long	longue	lang	larga		7
	very long	très longue	sehr lang	muy larga		9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>32. Leaf sheath: number of hairs (groups 57 and 60)</b> (+)	<b>Gaine de la feuille: nombre de poils (groupes 57 et 60)</b>	<b>Blattscheide: Anzahl Haare (Gruppen 57 und 60)</b>	<b>Vaina: número de pelos (grupos 57 y 60)</b>		
absent or very few	absent ou très petit	fehlend oder sehr gering	ausente o muy bajo		1
few	petit	gering	bajo		3
medium	moyen	mittel	media		5
many	grand	groß	numerosos		7
very many	très grand	sehr groß	muy numerosos		9
<b>33. Leaf sheath: length of hairs (groups 57 and 60)</b> (+)	<b>Gaine de la feuille: longueur des poils (groupes 57 et 60)</b>	<b>Blattscheide: Länge der Haare (Gruppen 57 und 60)</b>	<b>Vaina: longitud de los pelos (grupos 57 y 60)</b>		
short	courts	kurz	cortos		3
medium	moyens	mittel	medianos		5
long	longs	lang	largos		7
<b>34. Leaf sheath: distribution of hairs</b>	<b>Gaine de la feuille: distribution des poils</b>	<b>Blattscheide: Verteilung der Haare</b>	<b>Vaina: distribución de los pelos</b>		
only dorsal	uniquement dorsale	dorsal	únicamente dorsal		1
lateral and dorsal	latérale et dorsale	lateral und dorsal	lateral y dorsal		2

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>35. Leaf sheath: shape of ligule</b> (+)	<b>Gaine de la feuille: forme de la ligule</b>	<b>Blattscheide: Form der Ligula</b>	<b>Vaina: forma de la lígula</b>		
strap-shaped	en forme de bande	bandförmig	en forma de correa		1
deltoid	deltoïde	deltaförmig	deltoïde		2
crescent-shaped	en forme de croissant	halbmondförmig	en forma de cuarto creciente		3
bow-shaped	en forme d'arceau	bogenförmig	arqueada		4
steeply sloping	fortement inclinée	steil abfallend	con una inclinación pronunciada		5
horizontal	horizontale	waagrecht	horizontal		6
<b>36. Leaf sheath: ligule width</b>	<b>Gaine de la feuille: largeur de la ligule</b>	<b>Blattscheide: Breite der Ligula</b>	<b>Vaina: anchura de la lígula</b>		
narrow	étroite	schmal	estrecha		1
medium	moyenne	mittel	mediana		2
wide	large	breit	ancha		3
<b>37. Leaf sheath: length of ligule hairs</b> (+)	<b>Gaine de la feuille: longueur des poils de la ligule</b> (groupe 61)	<b>Blattscheide: Länge der Ligulahaare</b> (Gruppe 61)	<b>Vaina: longitud de los pelos de la lígula</b> (grupo 61)		
very short	très courts	sehr kurz	muy cortos		1
short	courts	kurz	cortos		3
medium	moyens	mittel	medianos		5
long	longs	lang	largos		7
very long	très longs	sehr lang	muy largos		9

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>38. Leaf sheath: shape of underlapping auricle</b> (+)	<b>Gaine de la feuille: forme de l'auricule sous-jacente</b>	<b>Blattscheide: Form des unterlappenden Blattöhrchens</b>	<b>Vaina: forma de la aurícula subyacente</b>		
transitional	transitoire	durchgehend	transicional		1
deltoid	deltoïde	deltaförmig	deltoïde		2
dentoid	en forme de dent	zahnförmig	dentoïde		3
unciform	unciforme	hakenförmig	unciforme		4
calcarifom	en forme d'éperon	spornförmig	calcariforme		5
lanceolate	lancéolée	lanzettlich	lanceolada		6
falcate	falciforme	sichelförmig	falciforme		7
<b>39. Leaf sheath: size of underlapping auricle</b>	<b>Gaine de la feuille: taille de l'auricule sous-jacente</b>	<b>Blattscheide: Größe des unterlappenden Blattöhrchens</b>	<b>Vaina: tamaño de la aurícula subyacente</b>		
small	petite	klein	pequeña		3
medium	moyenne	mittel	mediana		5
large	grande	groß	grande		7
<b>40. Leaf sheath: shape of overlapping auricle</b> (+)	<b>Gaine de la feuille: forme de l'auricule de chevauchement</b>	<b>Blattscheide: Form des überlappenden Blattöhrchens</b>	<b>Vaina: forma de la aurícula superpuesta</b>		
transitional	transitoire	durchgehend	transicional		1
deltoid	deltoïde	deltaförmig	deltoïde		2
dentoid	en forme de dent	zahnförmig	dentoïde		3
unciform	unciforme	hakenförmig	unciforme		4
calcariform	en forme d'éperon	spornförmig	calcariforme		5
lanceolate	lancéolée	lanzettlich	lanceolada		6
falcate	falciforme	sichelförmig	falciforme		7



English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>41. Leaf sheath: size of overlapping auricle</b> (+)	<b>Gaine de la feuille: taille de l'auricule de chevauchement</b>	<b>Blattscheide: Größe des überlappenden Blattöhrchens</b>	<b>Vaina: tamaño de la aurícula superpuesta</b>		
small	petite	klein	pequeña		3
medium	moyenne	mittel	mediana		5
large	grande	groß	grande		7
<b>42. Leaf sheath: color of dewlap</b> (* (+)	<b>Gaine de la feuille: couleur de l'ochréa</b>	<b>Blattscheide: Farbe des Lappens</b>	<b>Vaina: color del collar</b>		
RHS Color chart (indicate reference number)	code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
<b>43. Leaf blade: curvature</b>	<b>Limbe: courbure</b>	<b>Blattspreite: Biegung</b>	<b>Limbo: curvado</b>		
erect	dressé	aufrecht	erecto		1
curved tips	sommets incurvés	gebogene Spitzen	ápices curvados		2
arched	arqué	gebogen	arqueado		3
curved at base	incurvé à la base	an der Basis gebogen	curvado a la base		4
<b>44. Leaf blade: width in the middle of the length</b> (*	<b>Limbe: largeur à mi-longueur</b>	<b>Blattspreite: Breite in der Mitte der Länge</b>	<b>Limbo: anchura en el punto medio</b>		
narrow	étroit	schmal	estrecho		3
medium	moyen	mittel	mediano		5
broad	large	breit	ancho		7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>45. Leaf: midrib width (TVD leaf at longitudinal mid-point)</b>	<b>Feuille: largeur de la nervure principale (plus haute feuille dont l'ochréa est visible à mi-longueur)</b>	<b>Blatt: Breite der Mittelrippe (TVD-Blatt in der Mitte der Länge)</b>	<b>Hoja: anchura de la nervadura (punto medio del collar superior)</b>		
very narrow	très étroite	sehr schmal	muy estrecha		1
narrow	étroite	schmal	estrecha		3
medium	moyenne	mittel	mediana		5
wide	large	breit	ancha		7
very wide	très large	sehr breit	muy ancha		9
<b>46. Leaf: ratio lamina width/midrib width</b>	<b>Feuille: rapport épaisseur du limbe/épaisseur de la nervure principale</b>	<b>Blatt: Verhältnis der Breite der Lamina zur Breite der Mittelrippe</b>	<b>Hoja: relación entre la anchura de la lámina y la anchura de la nervadura</b>		
low	faible	niedrig	baja		3
medium	moyen	mittel	media		5
high	important	hoch	alta		7
<b>47. Leaf blade: lamina length (TVD leaf) (+)</b>	<b>Limbe: longueur (plus haute feuille dont l'ochréa est visible)</b>	<b>Blattspreite: Länge der Lamina (TVD-Blatt)</b>	<b>Limbo: longitud de la lámina (collar superior)</b>		
very short	très court	sehr kurz	muy corta		
short	court	kurz	corta		
medium	moyen	mittel	mediana		
long	long	lang	larga		
very long	très long	sehr lang	muy larga		

	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>48.</b>	<b>Leaf blade: pubescence on margin</b>	<b>Limbe: pilosité sur le bord</b>	<b>Blattspreite: Behaarung am Rand</b>	<b>Limbo: pubescencia en el borde</b>		
(+)	absent or very sparse	absente ou très faible	fehlend oder sehr locker	ausente o muy rala		1
	sparse	faible	locker	rala		3
	medium	moyenne	mittel	media		5
	dense	forte	dicht	densa		7
<b>49.</b>	<b>Leaf blade: serration of margin</b>	<b>Limbe: dentelure du bord</b>	<b>Blattspreite: Randzählung</b>	<b>Limbo: dentado del borde</b>		
(+)	absent	absente	fehlend	ausente		1
	present	présente	vorhanden	presente		2
<b>50</b>	<b>Cane top: length</b>	<b>Sommet de la canne: longueur</b>	<b>Rohrspitze: Länge</b>	<b>Parte superior de la caña: longitud</b>		
	short	courte	kurz	corta		3
	medium	moyenne	mittel	mediana		5
	long	longue	lang	larga		7
<b>51</b>	<b>Cane top: shape of cross-section</b>	<b>Sommet de la canne: forme de la section transversale</b>	<b>Rohrspitze: Form des Querschnitts</b>	<b>Parta superior de la caña: forma de la sección transversal</b>		
	circular	circulaire	rund	circular		1
	ovate	ovoïde	eiförmig	ovada		2
<b>52.</b>	<b>Cane top: color</b>	<b>Sommet de la canne: couleur</b>	<b>Rohrspitze: Farbe</b>	<b>Parte superior de la caña: color</b>		
	RHS Color chart (indicate reference number)	code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>53. Cane top: waxiness</b>	<b>Sommet de la canne: pruine</b>	<b>Rohrspitze: Wachsschicht</b>	<b>Parte superior de la caña: cerosidad</b>		
absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil		1
weak	faible	gering	débil		3
medium	moyenne	mittel	media		5
strong	forte	stark	fuerte		7
very strong	très forte	sehr stark	muy fuerte		9

VIII. Explanations on the Table of Characteristics

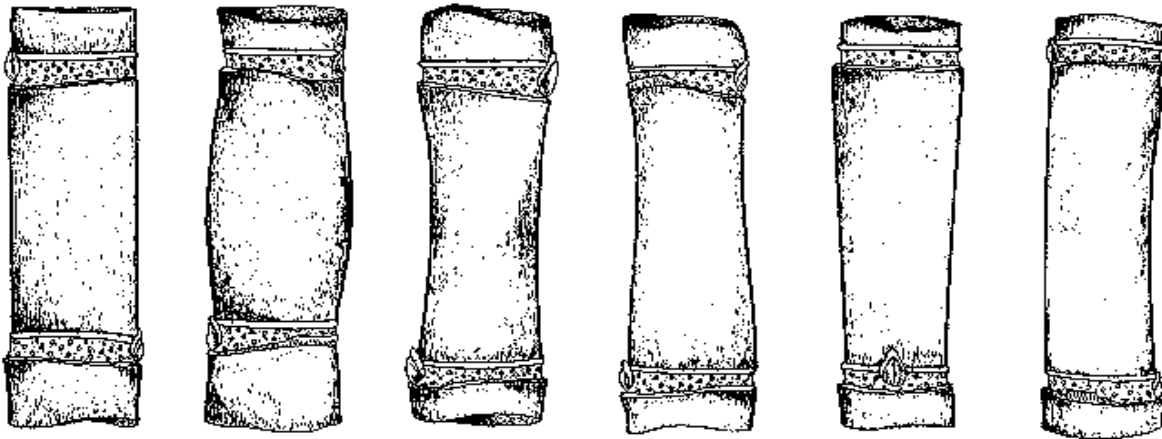
Ad. 2: Plant: adherence of leaf sheath

In the lower half of the stool in the senescing leaves.

Ad. 7: Leaf: culm height (base to TVD leaf)

Based on quantitative measurements of 24 stalks.  
TVD = top visible dewlap

Ad. 10: Internode shape



1                      2                      3                      4                      5                      6  
cylindrical      tumescent      bobbin-shaped      conoidal      obconoidal      concave-convex

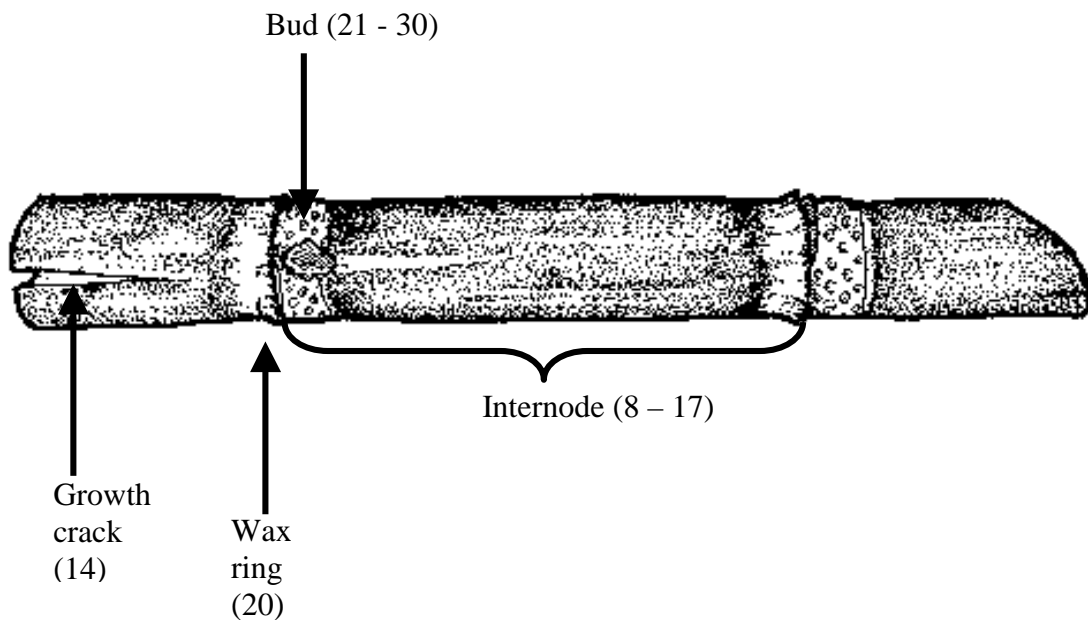
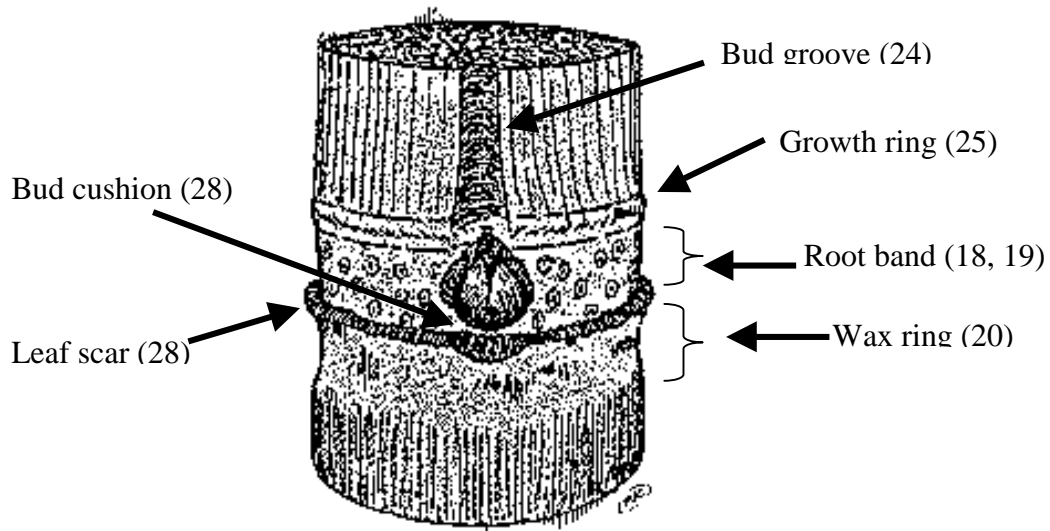
Ad. 12: Internode: color where exposed to sun

With wax, after three days of exposure to the sun.

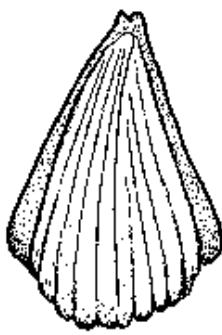
Ad. 13: Internode: color where not exposed to sun

On a stalk protected from the sun, on which the wax has been removed.

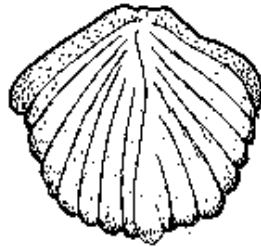
Ad. 8 to 17: Internode and 18 to 30: Node



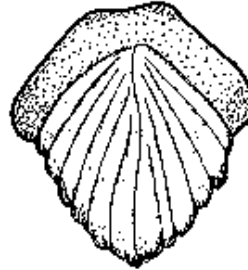
Ad. 21: Node: shape of bud



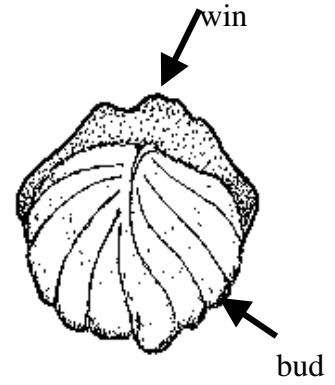
1  
triangular pointed



2  
oval



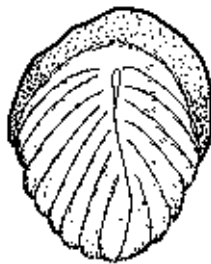
3  
obovate



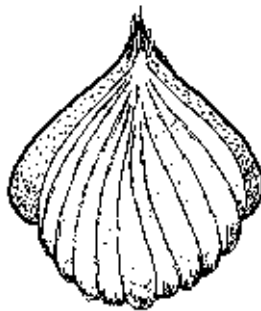
4  
pentagonal



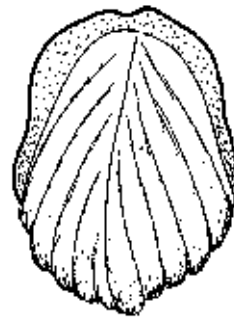
5  
rhomboid



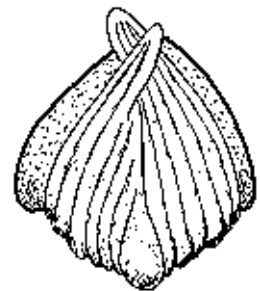
6  
round



7  
ovate

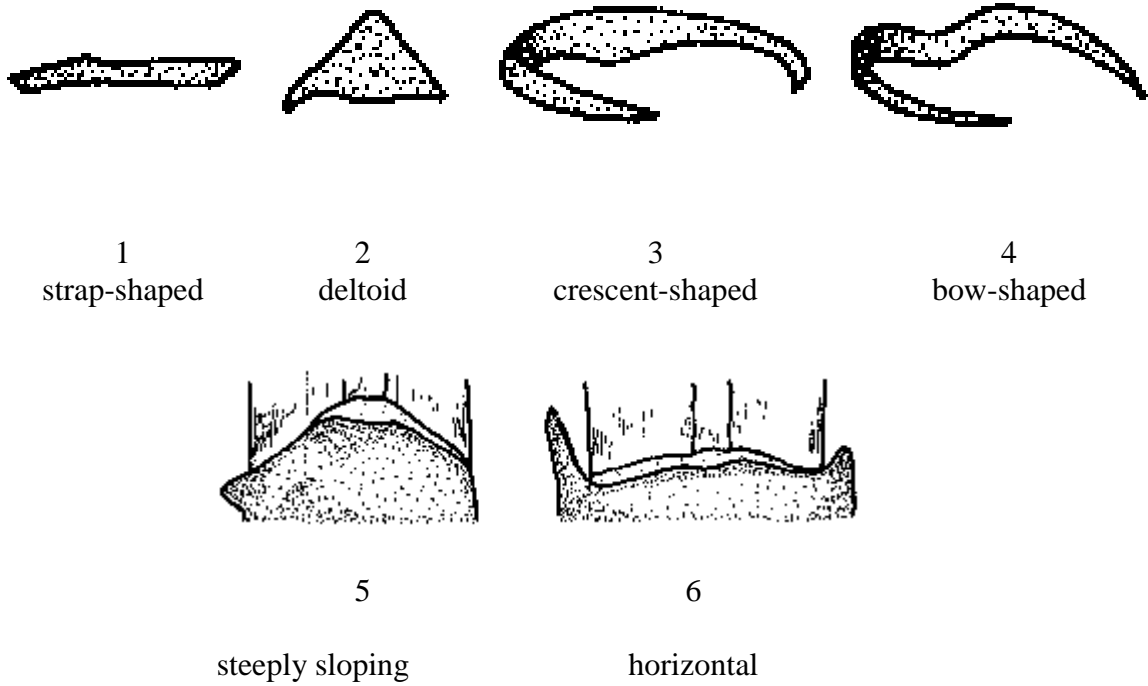


8  
rectangular

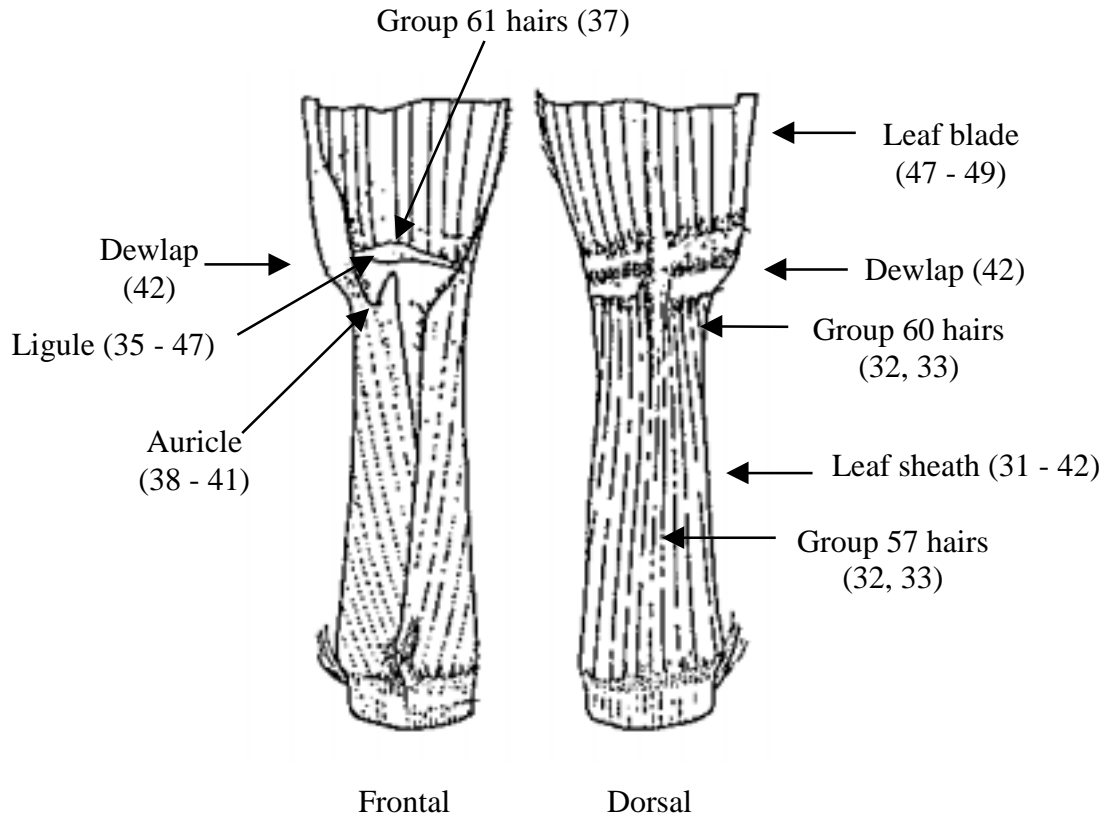


9  
beaked

Ad. 35: Leaf sheath: shape of ligule

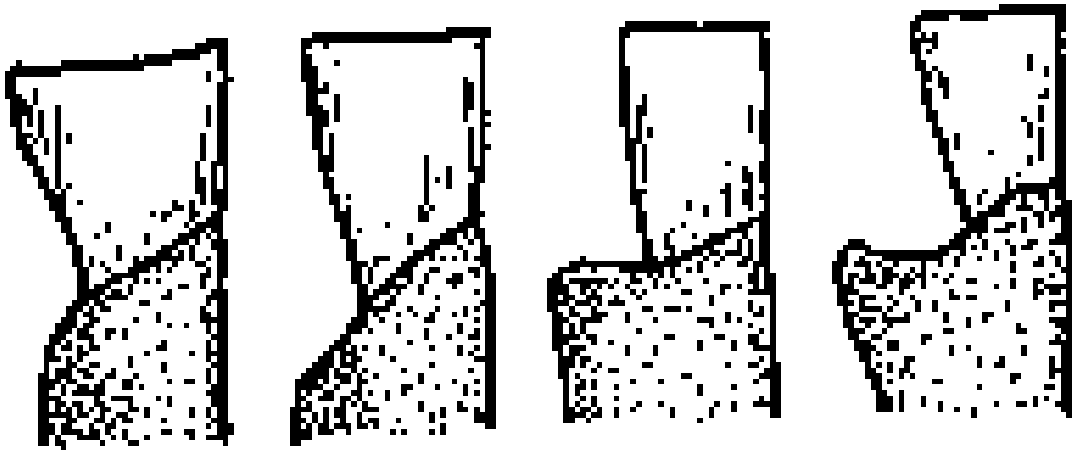


Ad. 31 to 42: Leaf sheath and 47 to 49: Leaf blade





Ad. 38 and 40: Leaf sheath: shape of auricle



1  
transitional

1  
transitional

1  
transitional

2  
deltoid



3  
dentoid

4  
unciform

5  
calcariform

6  
lanceolate

7  
falcate

IX. Literature

ARTSCHWAGER, E., *Journal of Agricultural Research*, v. 60, n. 8, pp. 503-508, 1940.

GALLACHER, D.J., 1994. Development of a minimum descriptor set for individuals of *Saccharum* spp. Hybrid germplasm. Thesis submitted for Ph.D., Department of botany and Tropical Agriculture, James Cook University of North Queensland, AU

GALLACHER, D.J., and BERDING, N. 1997. Purpose selection and application of descriptors for sugarcane germplasm. *Aust. J. Agric. Res* 48:759-67

GALLACHER, D.J., 1997. Evaluation of sugarcane morphological descriptors using variance components analysis. *Aust. J. Agric. Res* 48:769-73

GALLACHER, D.J., 1997. Optimised descriptors recommended for Australian sugarcane germplasm (*Saccharum* spp. hybrid) *Aust. J. Agric. Res* 48:775-79

X. Technical Questionnaire

	<p>Reference Number (not to be filled in by the applicant)</p>
<p style="text-align: center;"><b>TECHNICAL QUESTIONNAIRE</b> to be completed in connection with an application for plant breeders' rights</p>	
1.1 Genus	<p style="text-align: center;"><i>Saccharum L.</i>  SUGAR CANE</p>
1.2 Species	<p style="text-align: center;">..... (indicate species)</p>
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)

..... [ ]

4.2 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
<b>5.1</b> <b>(2)</b>	<b>Plant: adherence of leaf sheath</b>		
	weak		3 [ ]
	medium		5 [ ]
	strong		7 [ ]
<b>5.2</b> <b>(10)</b>	<b>Internode: shape</b>		
	cylindrical		1 [ ]
	tumescient		2 [ ]
	bobbin-shaped		3 [ ]
	conoidal		4 [ ]
	obconoidal		5 [ ]
	concave-convex		6 [ ]
<b>5.3</b> <b>(12)</b>	<b>Internode: color where <u>exposed</u> to sun</b>		
	RHS Color chart (indicate reference number)		
<b>5.4</b> <b>(13)</b>	<b>Internode: color where <u>not exposed</u> to sun</b>		
	RHS Color chart (indicate reference number)		
<b>5.5</b> <b>(15)</b>	<b>Internode: zigzag alignment</b>		
	absent or very weakly expressed		1 [ ]
	weakly expressed		3 [ ]
	moderately expressed		5 [ ]
	strongly expressed		7 [ ]

	Characteristics	Example Varieties	Note
<b>5.6</b> <b>(21)</b>	<b>Node: shape of bud</b>		
	triangular-pointed		1 [ ]
	oval		2 [ ]
	obovate		3 [ ]
	pentagonal		4 [ ]
	rhomboid		5 [ ]
	round		6 [ ]
	ovate		7 [ ]
	rectangular		8 [ ]
	beaked		9 [ ]
<b>5.7</b> <b>(42)</b>	<b>Leaf sheath: color of dewlap</b>		
	RHS Color chart (indicate reference number)		
<b>5.8</b> <b>(44)</b>	<b>Leaf blade: width in the middle of the length</b>		
	narrow		3 [ ]
	medium		5 [ ]
	broad		7 [ ]

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different <sup>o)</sup>	State of expression of similar variety	State of expression of candidate variety
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<sup>o)</sup> 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

(a) Conditions for planting

(b) Other conditions

7.2 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 that question is yes, please attach a copy of such an authorization.

[End of document]