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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 and phytosanitary formalities are complied with. As a minimum, the following quantity of plant material is recommended:

12 segments of culm used for the asexual propagation of sugar cane (seed pieces) with 3 buds each, properly packaged to minimize damage to the buds.

2. The plant material should be supplied from plants which are 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 the examination cannot be completed in one growing cycle, the test should be extended for a second growing cycle.

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 minimum of 24 culms, all from different stools, divided in two or more replicates. Separate plots for observation and for measuring should 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 a minimum of 6 culms. For quantitative characteristics, a minimum of 24 culms from different stools 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 a minimum of 24 culms.
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.
4. All observations on the stem should be made on a representative culm.
5. Unless otherwise indicated all observations on the node and internode should be made on the longest internode of the representative culm.
6. All observations on the leaf blade and leaf sheath should be made on the TVD leaf (TVD= top visible dewlap).
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 which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression are fairly evenly distributed throughout the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:

- (a) Internode: color where not exposed to sun (characteristic 13)
- (b) Node: shape of bud (characteristic 21)

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.
2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

3. Legend:

(*) Characteristics that should be used on all varieties in every growing period over which examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

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

MS: measurement of a number of individual plants or parts of plants

4. Definition of terms:

Plant cane: it refers to the first vegetative cycle of the crop, from when the cane is planted to its first harvest.

Stool: refers to a cluster of culms (and their leaves) derived from a single segments of culm used for the asexual propagation of sugar cane (seed piece). It also includes the underground portion of the culms) (rhizomes and roots). It is analogous to a “single plant”.

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

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. Plant: stool growth habit	Plante: port de la souche	Pflanze: Wuchstyp der Mutterpflanze	Planta: porte de la cepa		
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	halbliegend	semipostrado		7
prostrate	étalé	liegend	postrado		9
2. Plant: adherence of leaf sheath (*) (+)	Plante: adhérence de la gaine de la feuille	Pflanze: Anhaften der Blattscheide	Planta: adherencia de la vaina		
weak	faible	gering	débil		3
medium	moyenne	mittel	media		5
strong	forte	stark	fuerte		7
3. Plant: tillering	Plante: tallage	Pflanze: Bestockung	Planta: macollaje		
weak	faible	gering	débil		3
medium	moyen	mittel	medio		5
strong	fort	stark	fuerte		7
4. Plant: number of suckers	Plante: nombre du drageonnement	Pflanze: Anzahl Stockausschlag	Planta: número de chupones		
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 Beispielsorten Variedades ejemplo	Note/ Nota
5. Plant: leaf canopy	Plante: feuillage	Pflanze: Blattlaub	Planta: cierre		
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
6. Plant: intensity of green color of leaf canopy	Plante: intensité de la couleur verte du feuillage	Pflanze: Intensität der Grünfärbung des Blattlaubs	Planta: intensidad del color verde del cierre		
light	pâle	hell	claro		3
medium	moyenne	mittel	medio		5
dark	foncée	dunkel	oscuro		7
7. Stem: culm height (base to TVD leaf) (+) MS	Tige: hauteur de la tête de canne (de la base à la dernière ochréa visible)	Strunk: Halmhöhe (Basis bis TVD-Blatt)	Tallo: altura de la caña (desde la base hasta el collar superior)		
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
8. Internode: length on the bud side (+) MS	Entre-nœud: longueur du côté du bourgeon	Internodium: Länge an der Knospenseite	Entrenudo: longitud del lado de la yema		
very short	très court	sehr kurz	muy corto		1
short	court	kurz	corto		3
medium	moyen	mittel	mediano		5
long	long	lang	largo		7
very long	très long	sehr lang	muy largo		9

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
9. Internode: diameter (* (+) (as for 8)	Entre-nœud: diamètre (comme pour 8)	Internodium: Durchmesser (wie für 8)	Entrenudo: diámetro (como para 8)		
MS					
thin	fin	dünn	delgado		3
medium	moyen	mittel	medio		5
thick	épais	dick	grueso		7
10. Internode: shape (* (+)	Entre-nœud: forme	Internodium: Form	Entrenudo: forma		
cylindrical	cylindrique	zylindrisch	cilíndrico		1
tumescant	renflé	geschwollen	hinchado		2
bobbin-shaped	en forme de bobine	spulenförmig	abobinado		3
conoidal	conoïde	kegelförmig	conoidal		4
obconoidal	obconique	verkehrt kegelförmig	conoidal invertido		5
concave-convex	concave-convexe	konkav-konvex	cóncavo-convexo		6
11. Internode: cross-section (* (+)	Entre-nœud: section transversale	Internodium: Querschnitt	Entrenudo: sección transversal		
circular	circulaire	rund	circular		1
ovate	ovoïde	eiförmig	ovada		2
12. Internode: color (* (+) where <u>exposed</u> to sun	Entre-nœud: couleur du côté <u>exposé</u> au soleil	Internodium: Farbe an den der Sonne <u>ausgesetzten</u> Stellen	Entrenudo: color de la parte <u>expuesta</u> al sol		
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)		
13. Internode: color (* (+) where <u>not exposed</u> to sun	Entre-nœud: couleur du côté <u>non</u> <u>exposé</u> au soleil	Internodium: Farbe an den der Sonne <u>nicht ausgesetzten</u> Stellen	Entrenudo: color de la parte <u>no expuesta</u> al sol		
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
14. Internode: depth of growth crack (+)	Entre-nœud: profondeur de la fente de croissance	Internodium: Tiefe des Wachstumsrisses	Entrenudo: profundidad de la rajadura de crecimiento		
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		3
medium	moyenne	mittel	media		5
deep	profonde	tief	profunda		7
15. Internode: expression of zigzag alignment (*)(+)	Entre-nœud: expression de l'alignement en zigzag	Internodium: Ausprägung der Zickzack-ausrichtung	Entrenudo: expresión de la alineación en zig zag		
absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil		1
weak	faible	gering	débil		3
moderate	moyenne	mittel	moderada		5
strong	forte	stark	fuerte		7
16. Internode: appearance (rind surface)	Entre-nœud: apparence (surface de l'écorce)	Internodium: Aussehen (Oberfläche der Schale)	Entrenudo: aspecto (superficie de la corteza)		
smooth	lisse	glatt	lisa		3
medium	moyenne	mittel	media		5
rough (corky)	rugueuse (subéreuse)	rauh (korkartig)	rugosa (suberosa)		7
17. Internode: waxiness	Entre-nœud: pruine	Internodium: Wachsschicht	Entrenudo: cerosidad		
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
18. Node: width of root band (+)	Nœud: largeur de la zone radicaire	Nodium: Breite der Wurzelzone	Nudo: anchura de la banda radicular		
narrow	étroite	schmal	estrecha		3
medium	moyenne	mittel	mediana		5
broad	large	breit	ancha		7
19. Node: color of root band (+)	Nœud: couleur de la zone radicaire	Nodium: Farbe der Wurzelzone	Nudo: color de la banda radicular		
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)		
20. Node: wax ring (+)	Nœud: zone cireuse	Nodium: Wachsring	Nudo: anillo ceroso		
absent or very narrow	absente ou très étroite	fehlend oder sehr schmal	ausente o muy estrecho		1
narrow	étroite	schmal	estrecho		3
medium	moyenne	mittel	mediano		5
wide	large	breit	ancho		7
very wide	très large	sehr breit	muy ancho		9
21. Node: shape of bud (* (+)	Nœud: forme du bourgeon	Nodium: Form der Knospe	Nudo: forma de la yema		
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

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22. Node: width of bud, excluding wings	Nœud: largeur du bourgeon, à l'exclusion des ailes	Nodium: Breite der Knospe, ohne Flügel	Nudo: anchura de la yema, excluyendo las alas		
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
23. Node: bud prominence (on second senescent leaf from the top)	Nœud: proéminence du bourgeon (sur la deuxième feuille sénescente à partir du sommet)	Nodium: Knospenausbildung (am zweiten alternden Blatt von oben)	Nudo: prominencia de la yema (en la segunda hoja senescente a partir de la parte superior)		
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
24. Node: depth of bud groove (+)	Nœud: profondeur du sillon du bourgeon	Nodium: Tiefe der Knospenfurche	Nudo: profundidad del canal de la yema		
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
25. Node: length of bud groove	Nœud: longueur du sillon du bourgeon	Nodium: Länge der Knospenfurche	Nudo: longitud del canal de la yema		
short	courte	kurz	corta		3
medium	moyenne	mittel	media		5
long	longue	lang	larga		7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26. Node: position of bud tip in relation to growth ring (+)	Nœud: position du sommet du bourgeon par rapport à l'anneau de croissance	Nodium: Stellung der Knospenspitze im Verhältnis zum Wachstumsring	Nudo: posición del ápice de la yema en relación con el anillo de crecimiento		
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
27. Node: pubescence on the bud	Nœud: pilosité sur le bourgeon	Nodium: Behaarung an der Knospe	Nudo: pubescencia en la yema		
absent	absente	fehlend	ausente		1
present	présente	vorhanden	presente		9
28. Node: position of the pubescence on the bud	Nœud: position des poils sur le bourgeon	Nodium: Lage der Behaarung an der Knospe	Nudo: posición de la pubescencia en la yema		
basal	basale	an der Basis	basal		1
apical	apicale	an der Spitze	apical		2
lateral	latérale	seitlich	lateral		3
29. Node: bud cushion (space between base of bud and leaf scar) (+)	Nœud: coussinet du bourgeon (espace entre la base du bourgeon et la cicatrice foliaire)	Nodium: Knospenswulst (Abstand zwischen der Knospensbasis und der Blattnarbe)	Nudo: cojín de la yema (espacio entre la base de la yema y la cicatriz foliar)		
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
wide	large	breit	ancho		7
very wide	très large	sehr breit	muy ancho		9

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
30. Node: distribution of bud wing	Nœud: distribution de l'aile du bourgeon	Nodium: Verteilung des Knospenflügels	Nudo: distribución del ala de la yema		
apical	apicale	an der Spitze	apical		1
median	médiane	in der Mitte	mediana		2
sub-median	sous-médiane	unterhalb der Mitte	submediana		3
31. Node: width of bud wing	Nœud: largeur de l'aile du bourgeon	Nodium: Breite des Knospenflügels	Nudo: anchura del ala de la yema		
narrow	étroite	schmal	estrecha		3
medium	moyenne	mittel	mediana		5
wide	large	breit	ancha		7
32. Leaf sheath: length (+)	Gaine de la feuille: longueur	Blattscheide: Länge	Vaina: longitud		
MS					
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
33. Leaf sheath: number of hairs (+)	Gaine de la feuille: nombre de poils (groupes 57 et 60)	Blattscheide: Anzahl Haare (Gruppen 57 und 60)	Vaina: número de pelos (grupos 57 y 60)		
absent or very few	absent ou très petit	fehlend oder sehr gering	ausente o muy pocos		1
few	petit	gering	pocos		3
medium	moyen	mittel	medio		5
many	grand	groß	numerosos		7
very many	très grand	sehr groß	muy numerosos		9

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
34. Leaf sheath: length of hairs (groups 57 and 60) (+)	Gaine de la feuille: longueur des poils (groupes 57 et 60)	Blattscheide: Länge der Haare (Gruppen 57 und 60)	Vaina: longitud de los pelos (grupos 57 y 60)		
short	courts	kurz	cortos		3
medium	moyens	mittel	medianos		5
long	longs	lang	largos		7
35. Leaf sheath: distribution of hairs	Gaine de la feuille: distribution des poils	Blattscheide: Verteilung der Haare	Vaina: distribución de los pelos		
only dorsal	uniquement dorsale	dorsal	únicamente dorsal		1
lateral and dorsal	latérale et dorsale	lateral und dorsal	lateral y dorsal		2
36. Leaf sheath: shape of ligule (+)	Gaine de la feuille: forme de la ligule	Blattscheide: Form der Ligula	Vaina: forma de la lígula		
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
asymmetrical, steeply sloping	asymétrique, fortement inclinée	asymmetrisch steil abfallend	asimétrica con una inclinación pronunciada		5
assymmetrical, horizontal	asymétrique, horizontale	asymmetrisch waagrecht	asimétrica horizontal		6
37. Leaf sheath: ligule width (+)	Gaine de la feuille: largeur de la ligule	Blattscheide: Breite der Ligula	Vaina: anchura de la lígula		
narrow	étroite	schmal	estrecha		1
medium	moyenne	mittel	mediana		2
wide	large	breit	ancha		3

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
38. Leaf sheath: length of ligule hairs (group 61) (+)	Gaine de la feuille: longueur des poils de la ligule (groupe 61)	Blattscheide: Länge der Ligulahaare (Gruppe 61)	Vaina: longitud de los pelos de la lígula (grupo 61)		
short	courts	kurz	cortos		3
medium	moyens	mittel	medianos		5
long	longs	lang	largos		7
39. Leaf sheath: density of ligule hairs (group 61) (+)	Gaine de la feuille: densité des poils de la ligule (groupe 61)	Blattscheide: Dichte der Ligulahaare (Gruppe 61)	Vaina: densidad de los pelos de la lígula (grupo 61)		
absent or very sparse	nulle ou très lâche	fehlend oder sehr locker	ausente o muy laxa		1
sparse	lâche	locker	laxa		3
medium	moyenne	mittel	mediana		5
dense	dense	dicht	densa		7
very dense	très dense	sehr dicht	muy densa		9
40. Leaf sheath: shape of underlapping auricle (+)	Gaine de la feuille: forme de l'auricule sous-jacente	Blattscheide: Form des unterlappenden Blattöhrchens	Vaina: forma de la aurícula subyacente		
transitional	transitoire	durchgehend	transicional		1
deltoid	deltoïde	deltaförmig	deltoide		2
dentoid	en forme de dent	zahnförmig	dentoide		3
unciform	unciforme	hakenförmig	unciforme		4
calcarifom	en forme d'éperon	spornförmig	calcariforme		5
lanceolate	lancéolée	lanzettlich	lanceolada		6
falcate	falciforme	sichelförmig	falcada		7
41. Leaf sheath: size of underlapping auricle (+)	Gaine de la feuille: taille de l'auricule sous-jacente	Blattscheide: Größe des unterlappenden Blattöhrchens	Vaina: tamaño de la aurícula subyacente		
small	petite	klein	pequeña		3
medium	moyenne	mittel	mediana		5
large	grande	groß	grande		7

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
42. Leaf sheath: shape of overlapping auricle (+)	Gaine de la feuille: forme de l'auricule de chevauchement	Blattscheide: Form des überlappenden Blattöhrchens	Vaina: forma de la aurícula superpuesta		
transitional	transitoire	durchgehend	transicional		1
deltoid	deltoïde	deltaförmig	deltoide		2
dentoid	en forme de dent	zahnförmig	dentoide		3
unciform	unciforme	hakenförmig	unciforme		4
calcariform	en forme d'éperon	spornförmig	calcariforme		5
lanceolate	lancéolée	lanzettlich	lanceolada		6
falcate	falciforme	sichelförmig	falcada		7
43. Leaf sheath: size of overlapping auricle (+)	Gaine de la feuille: taille de l'auricule de chevauchement	Blattscheide: Größe des überlappenden Blattöhrchens	Vaina: tamaño de la aurícula superpuesta		
small	petite	klein	pequeña		3
medium	moyenne	mittel	mediana		5
large	grande	groß	grande		7
44. Leaf sheath: color of dewlap (* (+)	Gaine de la feuille: couleur de l'ochréa	Blattscheide: Farbe des Lappens	Vaina: color del collar		
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)		
45. Leaf blade: curvature	Limbe: courbure	Blattspreite: Biegung	Limbo: curvado		
straight	droite	gerade	recto		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

English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
46. Leaf blade: width at the longitudinal mid-point	Limbe: largeur à mi-longueur	Blattspreite: Breite in der Mitte der Länge	Limbo: anchura en el punto medio de la longitud		
MS					
narrow	étroit	schmal	estrecho		3
medium	moyen	mittel	mediano		5
broad	large	breit	ancho		7
47. Leaf: midrib width (as for 46)	Feuille: largeur de la nervure principale (comme pour 46)	Blatt: Breite der Mittelrippe (wie für 46)	Hoja: anchura de la nervadura principal (como para 46)		
MS					
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
48. Leaf: ratio leaf blade width/midrib width	Feuille: rapport épaisseur du limbe/épaisseur de la nervure principale	Blatt: Verhältnis der Breite der Blattspreite/Breite der Mittelrippe	Hoja: relación entre la anchura del limbo y la anchura de la nervadura principal		
low	faible	niedrig	baja		3
medium	moyen	mittel	media		5
high	important	hoch	alta		7
49. Leaf blade: length	Limbe: longueur	Blattspreite: Länge	Limbo: longitud		
(+)					
MS					
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 Beispielsorten Variedades ejemplo	Note/ Nota
50. Leaf blade: pubescence on margin (+)	Limbe: pilosité sur le bord	Blattspreite: Behaarung am Rand	Limbo: pubescencia en el borde		
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
51. Leaf blade: serration of margin (+)	Limbe: dentelure du bord	Blattspreite: Randzählung	Limbo: aserrado del borde		
absent	absente	fehlend	ausente		1
present	présente	vorhanden	presente		2
52. Cane top: length	Sommet de la canne: longueur	Rohrspitze: Länge	Parte superior de la caña: longitud		
short	courte	kurz	corta		3
medium	moyenne	mittel	mediana		5
long	longue	lang	larga		7
53. Cane top: shape of cross-section	Sommet de la canne: forme de la section transversale	Rohrspitze: Form des Querschnitts	Parta superior de la caña: forma de la sección transversal		
circular	circulaire	rund	circular		1
ovate	ovoïde	eiförmig	ovada		2
54. Cane top: color	Sommet de la canne: couleur	Rohrspitze: Farbe	Parte superior de la caña: color		
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
55. Cane top: waxiness	Sommet de la canne: pruine	Rohrspitze: Wachsschicht	Parte superior de la caña: cerosidad		
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

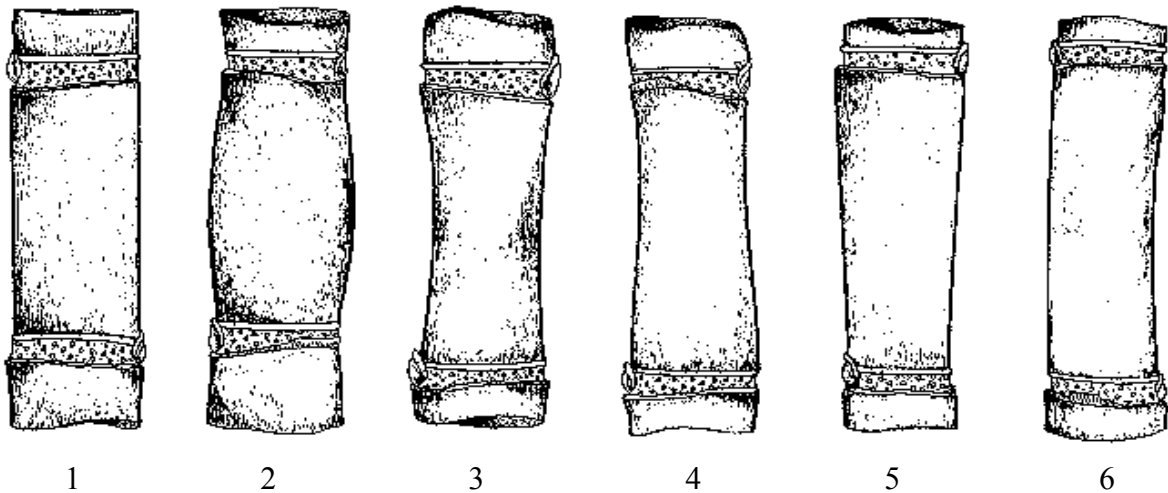
Ad. 2: Plant: adherence of leaf sheath

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

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

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

Ad. 10: Internode shape



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

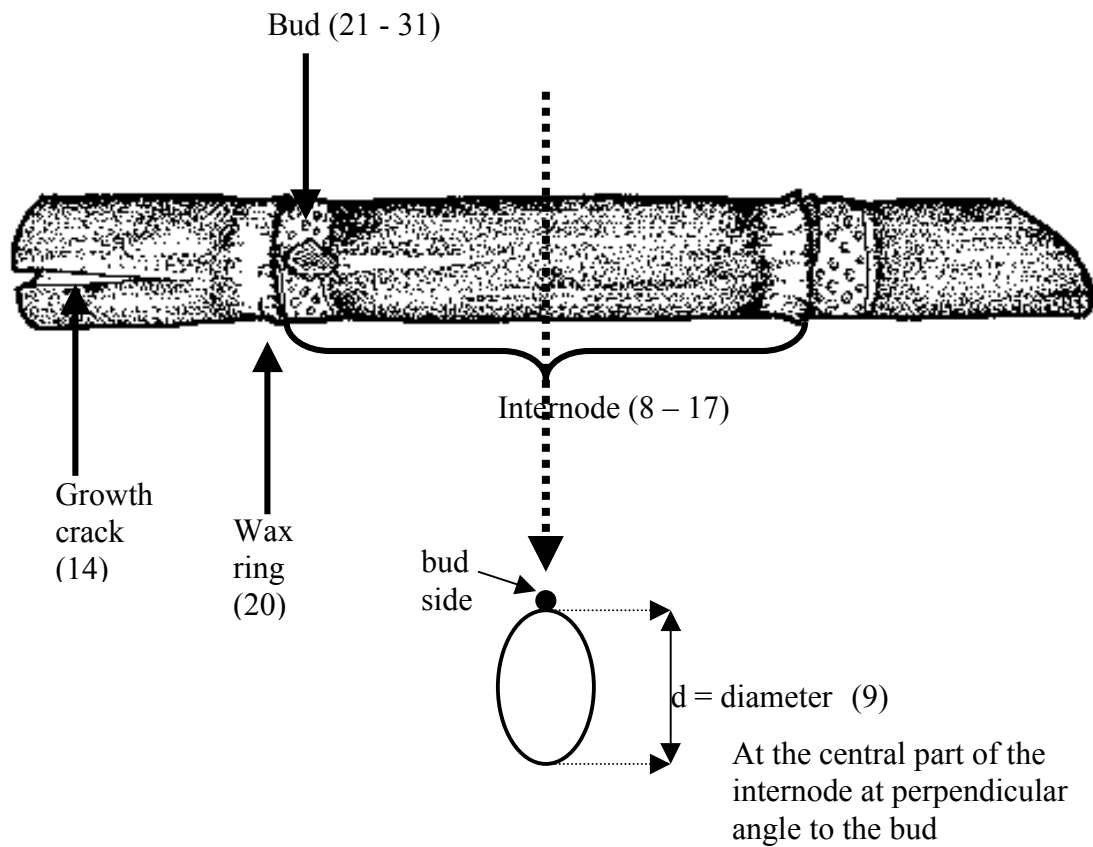
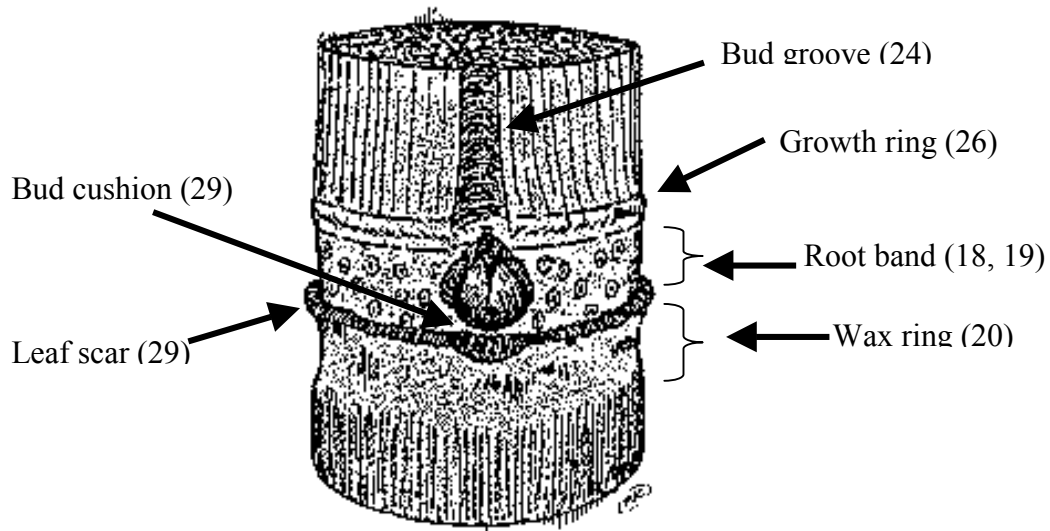
Ad. 12: Internode: color where exposed to sun

On a culm, after three days of exposure to the sun with wax removed.

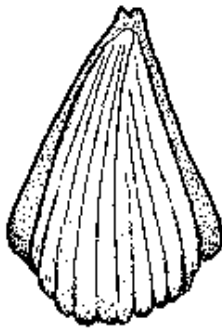
Ad. 13: Internode: color where not exposed to sun

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

Ad. 8 to 17: Internode and 18 to 31: Node



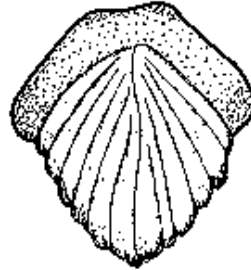
Ad. 21: Node: shape of bud



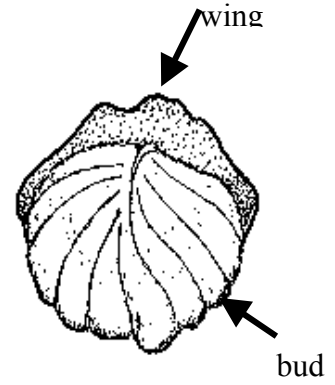
1
triangular pointed



2
oval



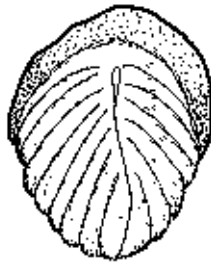
3
obovate



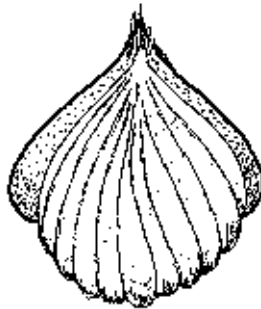
4
pentagonal



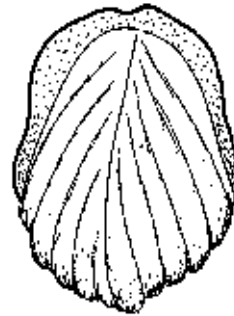
5
rhomboid



6
round



7
ovate

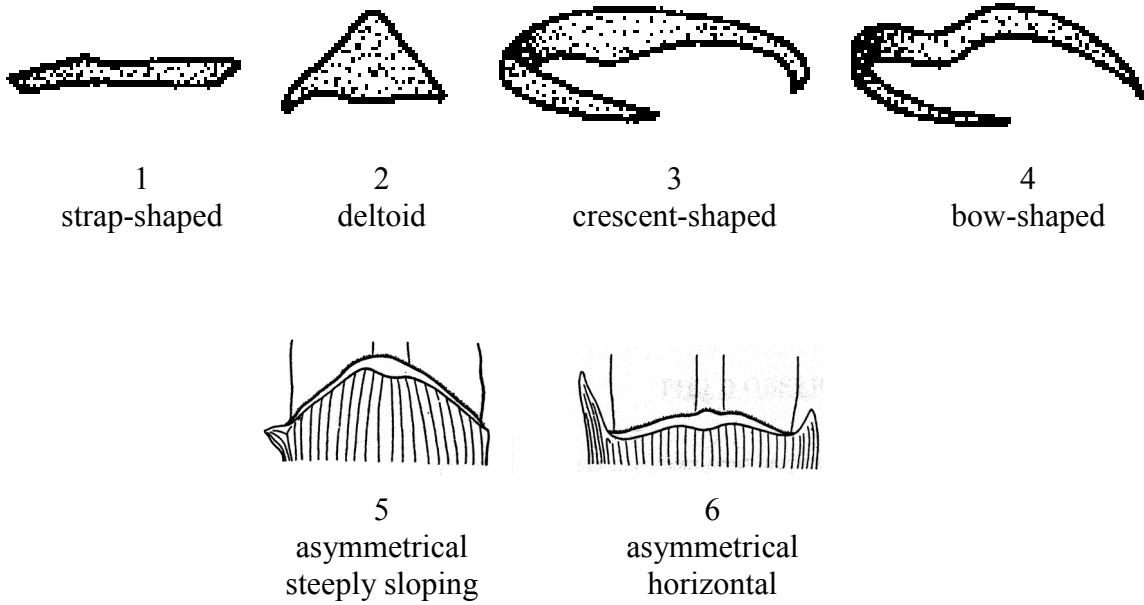


8
rectangular



9
beaked

Ad. 36: Leaf sheath: shape of ligule

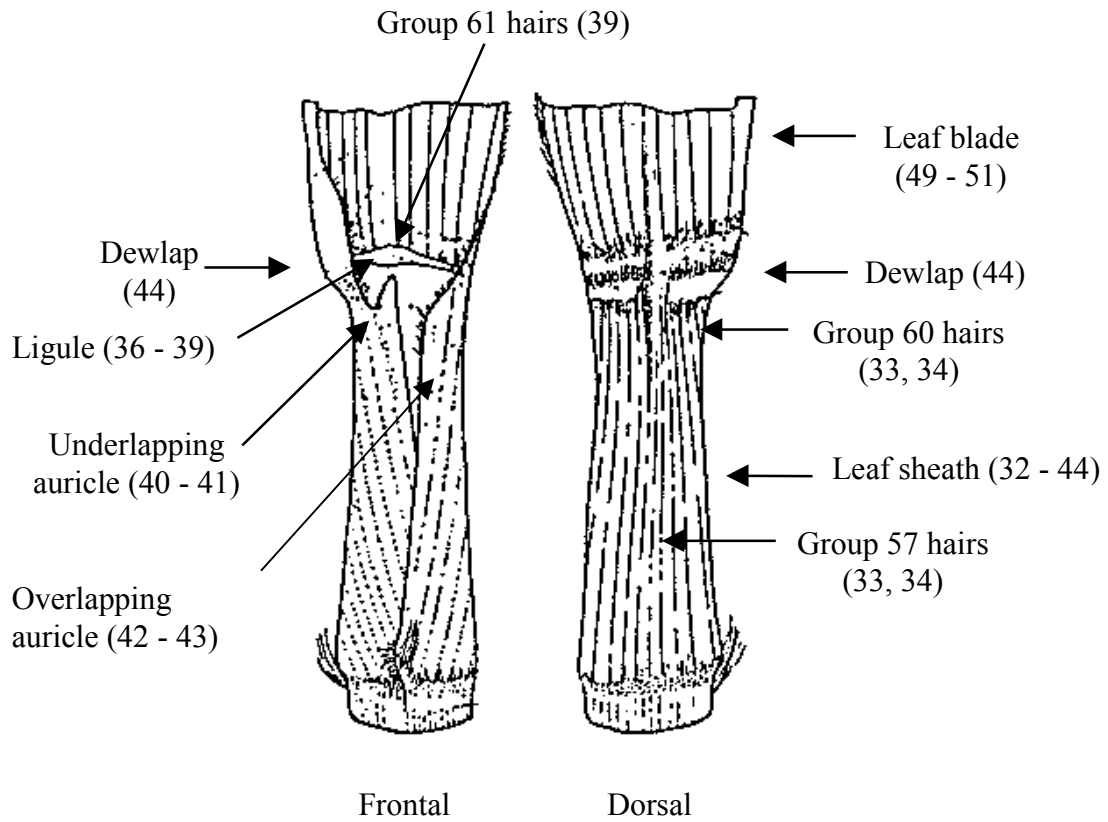


States strap-shaped (1) and deltoid (2) do not curl round the sheath

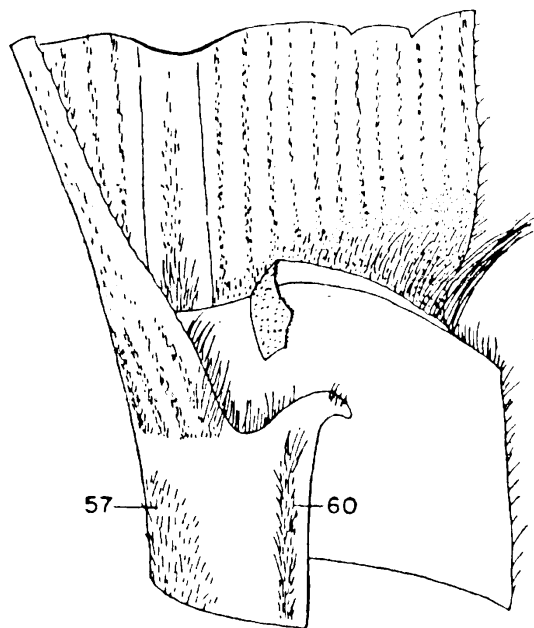
Ad. 37: Leaf sheath: ligule width

narrow < 3 mm.
medium 3 – 5 mm.
wide > 5 mm.

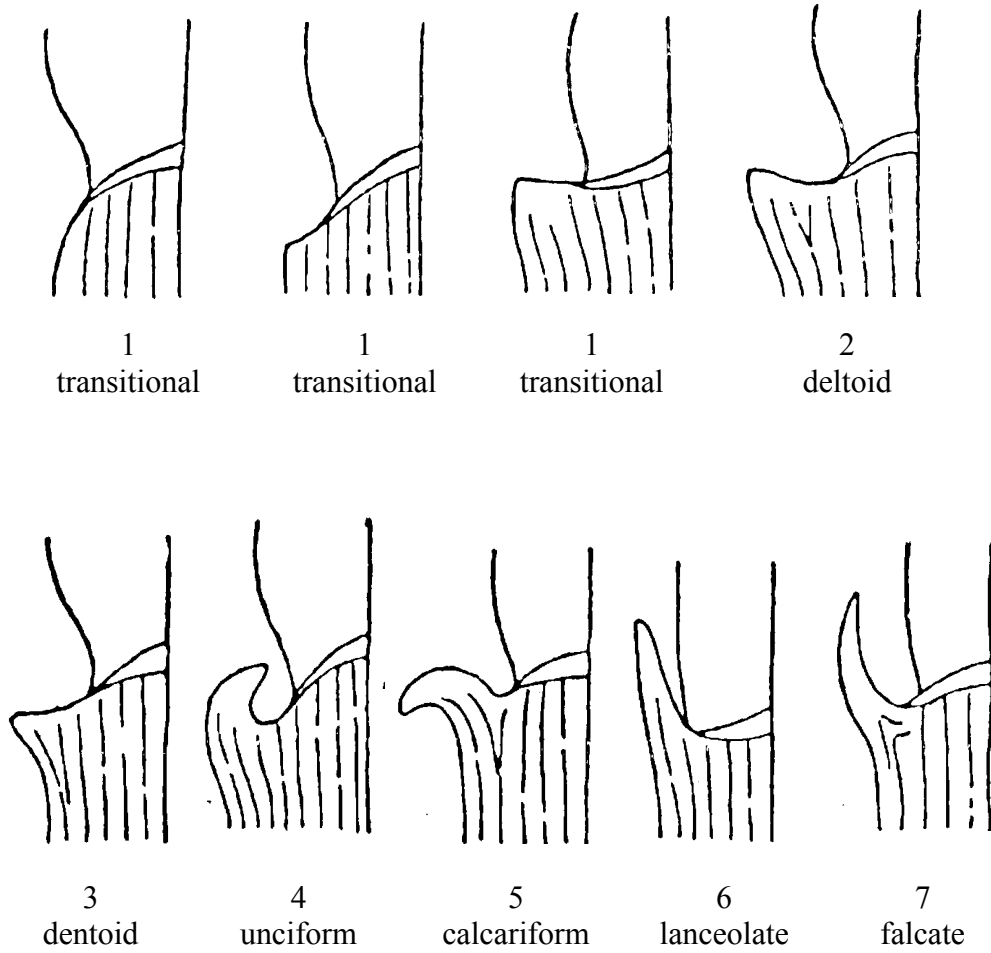
Ad. 32 to 44: Leaf sheath and 49 to 51: Leaf blade



Ad. 33 and 34: Leaf sheath: number of hairs (33) (groups 57 and 60) and Leaf sheath: length of hairs (34) (groups 57 and 60)



Ad. 40 and 42: Leaf sheath: shape of auricle



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

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

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

4.1 Origin

(a) Seedling (indicate parent varieties)

..... []

(b) Mutation (indicate parent variety)

..... []

(c) Discovery (indicate where and when)

..... []

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

	Characteristics	Example Varieties	Note
5.6 (21)	Node: shape of bud		
	triangular-pointed		1 []
	oval		2 []
	obovate		3 []
	pentagonal		4 []
	rhomboid		5 []
	round		6 []
	ovate		7 []
	rectangular		8 []
	beaked		9 []
5.7 (44)	Leaf sheath: color of dewlap		
	RHS Color chart (indicate reference number)		
5.8 (46)	Leaf blade: width at the longitudinal mid-point		
	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 ^{o)}	State of expression of similar variety	State of expression of candidate variety
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^{o)} In the case of identical states of expressions of both varieties, please indicate the size of the difference.

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

(a) Conditions for planting

(b) Other conditions

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

[End of document]