Sugar Research Australia

PREPARING FOR A REVIEW OF THE UPOV TECHNICAL GUIDELINES FOR SUGARCANE

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ISSCT workshop

1-5 June 2015



Outline

- Background
  - What is UPOV ?
  - PBR in Australia
  - Steps in applying for PBR in Australia
- UPOV Technical Guidelines (TG)
  - TG for Sugarcane
  - Background and details
- Future Plan

UPOV

- International Union for the Protection of New Varieties of Plants.

- The UPOV system of plant variety protection came into being in Paris on December 2, 1961
  - Revised 1972, 1978, 1991.

- This was the point at which there was recognition of the rights of plant breeders on an international basis.

UPOV cont'd

- The UPOV Convention provides a *sui generis* form of intellectual property protection
  - specifically adapted for the process of plant breeding
  - developed with the aim of encouraging breeders to develop new varieties of plants by granting them an intellectual property right: the breeder's right or PBR.
  - 72 signatories

PBR in Australia

- Administered under the Plant Breeder's Rights Act 1994
  - PBR Act 1994 conforms to 1991 revision of UPOV Convention
- Breeder-based testing system
  - Breeder or applicant undertakes testing.

Steps in applying for PBR

- Complete Part 1 application
  - brief description and photograph
  - main differences from most similar varieties
  - full information on origin and breeding
  - pay application fee
  - nominate Qualified Person (QP).

- Establish a case that the variety exists.

- PBRO reviews the application.

- 'Acceptance' means provisional protection
  - 12 months.

http://www.ipaustralia.gov.au/pbr/index.shtml

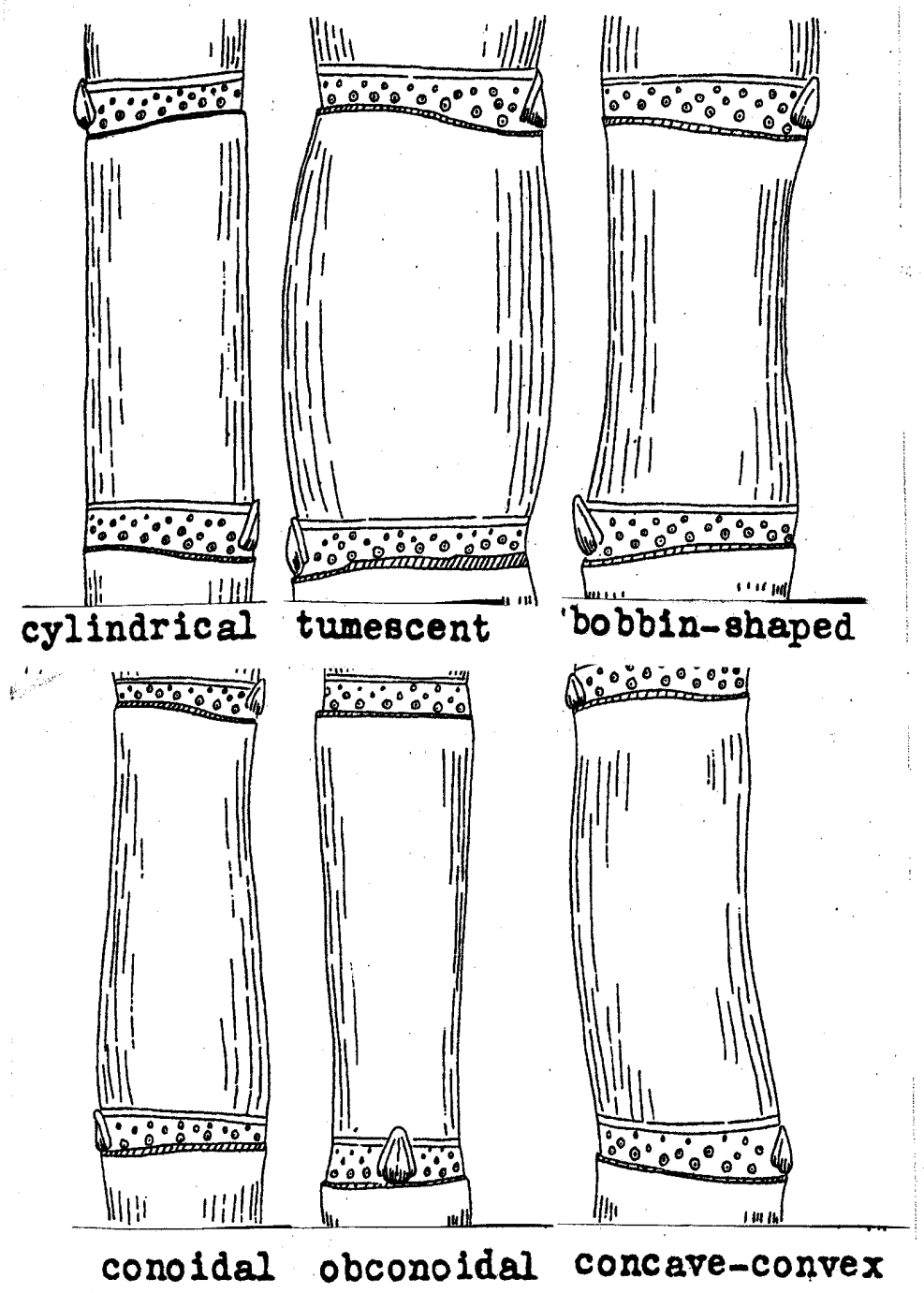
Steps in applying for PBR cont'd

- Conduct Comparative Trial
  - Compare new variety with most similar varieties of common knowledge (and parents, if possible)
  - PBR examination.
- Record characteristics
  - Complete Part 2 application (DUS); online IVDS.
- Pay the examination fee.
- Deposit propagating material in a GRC.
- Publication followed by 6 month period for objection or comment.
- Completion of all requirements, resolution of objections, pay certificate fee → Grant Status.

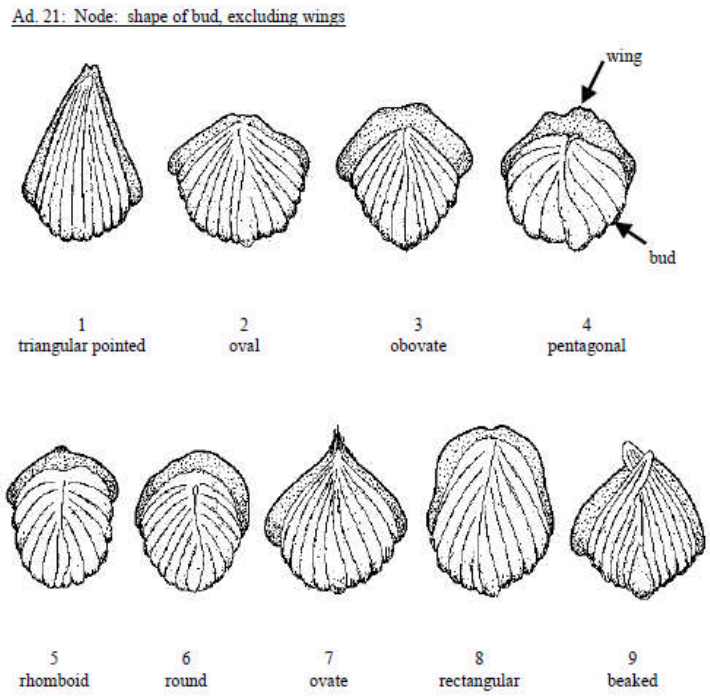
Comparative Trial

- New varieties, comparators, parents
  - 10m x 3 reps x 20 varieties.
- Plant, stem & leaf traits described for each variety
- New varieties are PBR protected the year they are released to the industry.

Internode shape



Bud shape


Ad. 21: Node: shape of bud, excluding wings
wing
bud
1
triangular pointed
2
oval
3
obovate
4
pentagonal
5
rhomboid
6
round
7
ovate
8
rectangular
9
beaked



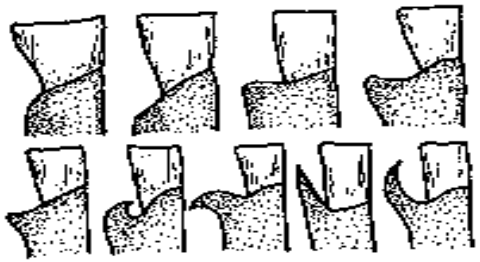
Ligules



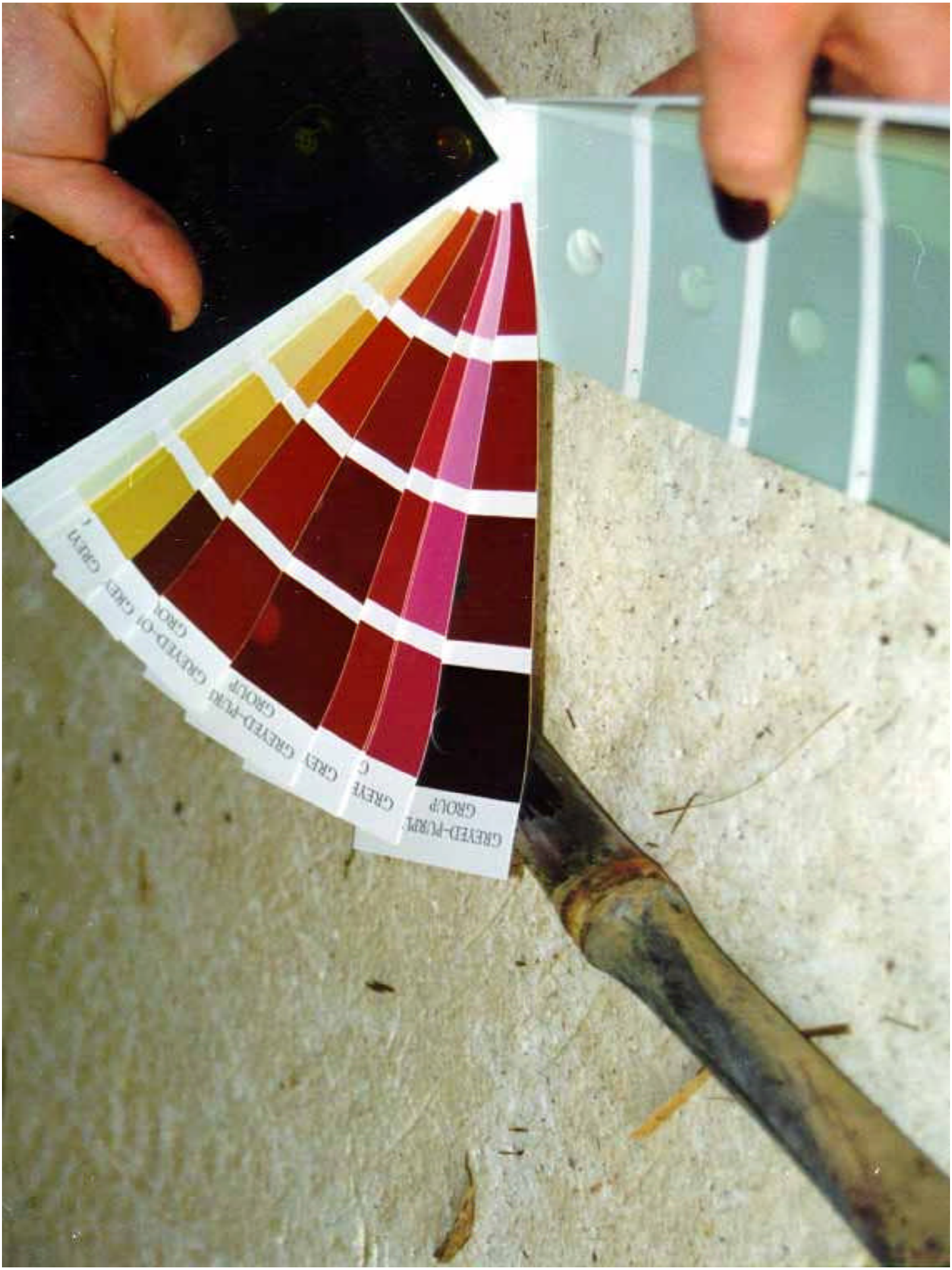




Auricles

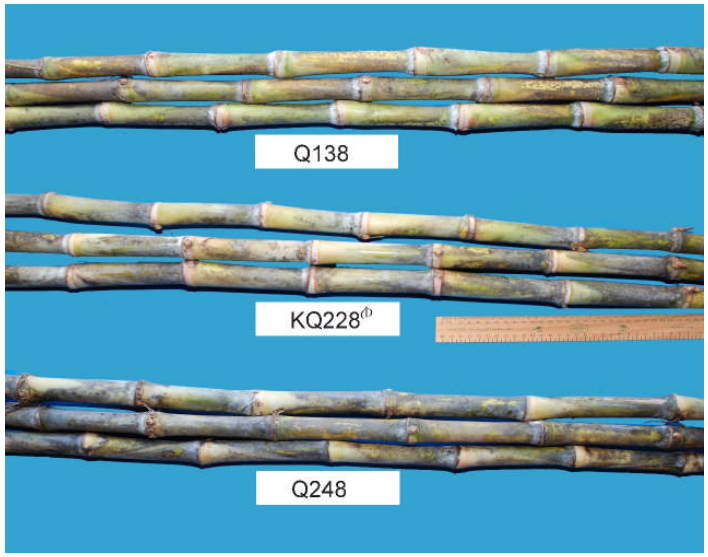


Alignment



History and Importance

- Since 1995, BSES/SRA has been protecting industry's investment in breeding new varieties.
- All varieties since Q163[A] (except Q164 Q214 and Q225) are protected.
- 96 varieties are now protected
  - 92 have Grant Status
  - 4 have Provisional Protection.



UPOV Technical Guidelines (TG)

- Purpose:
  - Provide 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.

- To facilitate cooperation in DUS testing and to establish internationally recognised variety descriptions.

UPOV Technical Guidelines (TG)

Content:

- Type of material required for testing the new variety
- Method of examination
  - eg. # of growing cycles, testing place, conditions for examination, test design
- Assessment of DUS
- Grouping varieties and trial organization
  - Grouping characteristics, used to select varieties to exclude from trial and also to organize trial so that similar varieties are grouped together

UPOV Technical Guidelines (TG)

Content:

- Table of Characteristics and their states of expression
  - Approved by UPOV Council
  - Members select those suitable for their particular circumstances.

UPOV Technical Guidelines (TG)

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……

6.4 Example Varieties

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

UPOV TG for Sugarcane

- Initiated < 2000
  - Dr Mike Cox (SRA)
  - Dr Marcos Landell (IAC)
  - Dr Tanvir Hossain (PBR)
- Adopted by UPOV in 2005

E

UPOV

TG/186/1
ORIGINAL: English
DATE: 2005-04-06

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

SUGARCANE

UPOV code: SACCH

(*Saccharum* L.)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Saccharum L.	Sugarcane	Canne à sucre	Zuckerrohr	Caña de azúcar

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

http://www.upov.int/

UPOV TG for sugarcane

- 54 characteristics (Artschwager, 1940; Gallacher, 1997)
- 10 are quantitative
  - height; internode length & width; bud width; root band width, lamina length & width; midrib width; leaf sheath length
- 39 characteristics used in Australia

TG for sugarcane, asterisked characteristics (9)

2. (*) (+)	Plant: adherence of leaf sheath	Plante: adherence de la gaine de la feuille	Pflanze: Anhaften der Blattscheide	Planta adherencia de la vaina de la hoja	
	weak	faible	gering	débil	H56-752, Q96
	medium	moyenne	mittel	media	Q124, Q186
	strong	forte	stark	fuerte	Q120, NCo310, Q201

TG for sugarcane, asterisked characteristics

9. (*) (+) MS	Internode: Diameter (as for 8)	Entre-nœud: Diamètre (comme pour 8)	Internodium: Durchmesser (wie für 8)	Entrenudo: diámetro (como para 8)	
(a)	thin	petit	dünn	delgado	Q136
	medium	moyen	mittel	medio	Q124, H56-752, Q170
	thick	grand	dick	grueso	Q117

TG for sugarcane, asterisked characteristics

10. (*) (+)	**Internode: shape**	**Entre-noeud: Forme**	**Internodium: Form**	**Entrenudo: forma**	
(a)	Cylindrical	Cylindrique	Zylindrisch	Cilíndrico	Q169, RB72-454
	Tumescent	Renflé	Geschwollen	Hinchado	
	Bobbin-shaped	En forme de bobine	spulenförmig	Abobinado	H56-572
	Conoidal	Conoïde	Kegelförmig	Conoidal	
	Obconoidal	Obconique	Verkehrtförmig	Conoidal invertido	H60-3802
	Concave-convex	Concave-convexe	Konkav-konvex	Cóncavo-convexo	Q115

TG for sugarcane, asterisked characteristics

12. (*) (+)	Internode: color where exposed to sun	Entre-noeud: couleur du côté exposé au soleil	Internodium: Farbe an den der Sonne ausgesetzen Stellen	Entrenudo: color de la parte expuesta al sol
(a)	RHS Colour 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)

TG for sugarcane, asterisked characteristics

13. (*) (+)	Internode: color where not exposed to sun	Entre-noeud: couleur du côté non exposé au soleil	Internodium: Farbe an den der Sonne nicht ausgesetzen Stellen	Entrenudo: color de la parte no expuesta al sol
(a)	RHS Colour 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)

TG for sugarcane, asterisked characteristics

15. (*) (+)	Internode: expression of zigzag alignment	Entre-nœud: expression de l'alignment en zigzag	Internodium: Ausprägung der Zickzackausrichtung	Entrenudo: expresión de la alineación en zig zag	
(a)	absent or very weak	absente ou très faible	fehland oder sehr gering	ausente o muy débil	Q124
	weak	faible	gering	débil	Q135, Q152
	moderate	moyenne	mittel	moderada	Q117
	strong	forte	stark	fuerte	H56-752

TG for sugarcane, asterisked characteristics

21. (*) (+)	Node: shape of bud, excluding wings	Nœud: forme du bourgeon, à l'exclusion des ailes	Nodium: Form der Knospe, ohne Flügel	Nudo: forma de la yema, excluyendo las alas	
(a)	triangular-pointed	triangulaire-pointue	dreieckig-spitz	triangular-puntiaguda	RB72-454
	oval	ovale	elliptisch	oval	Q138
	obovate	obovale	verkehrt eiförmig	trasovada	
	pentagonal	pentagonale	fünfeckig	pentagonal	
	rhomboid	rhomboïdale	rhomboid	romboide	
	round	ronde	rund	redonda	Q179, Q124
	ovate	ovoïde	eiförmig	ovada	Q170, Q115, Q186
	rectangular	rectangulaire	rechteckig	rectangular	
	beaked	becquée	schnabelförmig	en pico	

TG for sugarcane, asterisked characteristics

43. (*) (+)	**Leaf sheath: Colour of dewlap**	**Gain de la feuille: couleur de l'ochréa**	**Blattscheide: Farbe des Nackens**	**Vaina de la hoja: color del collar**	
(b)	RHS colour 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)	

TG for sugarcane, asterisked characteristics

45. (*) MS	Leaf Blade: Width at the longitudinal mid-point	Limbe: largeur à mi-longeur	Blattspreite: Breite in der Mitte der Länge	Limbo de la hoja: anchura en el punto medio de la longitud	
(b)	narrow	étroit	schmal	estrecho	Q113, Q186
	medium	moyen	mittel	mediano	Q121, Q124
	broad	large	breit	ancho	Q138, Q179

UPOV Sugarcane Registrations

Country	Number of Varieties
Argentina	26
Australia	96
Brazil	147
Colombia	11
Ecuador	4
Israel	2
Japan	33
Kenya	6
Mexico	1
Peru	2
Portugal	1
South Africa	16
USA	5
Grand Total	350

Future Plan

- Dr Tanvir Hossain:
  - New Chairperson for the UPOV Technical Working Party for Agricultural crops (TWA)
  - TGs currently under review eg. Wheat, others under consideration

Future Plan

- Sugarcane TGs adopted 10 years ago
- Will be recommended for review at next TWA meeting in Obihiro, Japan 4-10 July
- Are you interested ???

धन्यवाद !

谢谢 !

Danke !

Obrigadão !

Merci !

Thank you !

Gracias !

ありがとう !