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TG/123/4(proj.8)
ORIGINAL: English
DATE: 2010-03-10

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

BANANA

UPOV Codes: MUSAA_ACU; MUSAA_PAR

Musa acuminata Colla; *Musa* x*paradisiaca* L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from Brazil and France

to be considered by the

Technical Committee at its forty-sixth session,
to be held in Geneva from March 22 to 24, 2010

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Musa acuminata Colla	Banana, Cavendish banana, Chinese banana, Dwarf banana	Bananier, Bananier nain	Banane, Zwergbanane	Bananera, Banano, Platanera, Plátano
Musa x*paradisiaca* L., *M. acuminata* Colla × *M. balbisiana* Colla	Plantain, Pomme banana, Silk banana, Banana sucrier			

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.]

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1. Subject of these Test Guidelines

1.1 These Test Guidelines apply to all varieties of *Musa acuminata* Colla and *Musa×paradisiaca* L. (*M. acuminata* Colla x *M. balbisiana* Colla) of the family *Musaceae*.

1.2 It is noted that cultivated bananas have been derived from wild species *Musa acuminata* (A) and *Musa balbisiana* (B) either alone or in combinations. The cultivated bananas are classified into botanical groups according to their genome combination. The main groups found in the edible bananas, natural varieties or hybrids, are AA, AB, AAA, AAB, ABB, AAAA, AAAB and AABB.

1.3 Each application should include a declaration of botanical group according to the genetic combination that could be checked if necessary.

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 corms (whole), rhizomes or *in vitro* plants.

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

20 corms, rhizomes or *in vitro* plants.

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

The minimum duration of tests should normally be two independent growing cycles. It is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles. In particular, observations should not be made on the first crop of fruit.

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

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 Each test should be designed to result in a total of at least 15 plants.

3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, all observations should be made on 15 plants or parts taken from each of 15 plants.

3.6 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.2 Uniformity

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 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 15 plants, 1 off-type is allowed.

4.3 Stability

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the previous 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)	Pseudostem: length	(characteristic 3)
(b)	Bunch: length	(characteristic 25)
(c)	Bunch: diameter	(characteristic 26)
(d)	Fruit: longitudinal ridges	(characteristic 36)
(e)	Fruit length	(characteristic 37)
(f)	Fruit: shape of apex	(characteristic 40)
(g)	Fruit thickness of peel	(characteristic 41)
(h)	Fruit: color of peel	(characteristic 43)
(i)	Fruit: color of flesh	(characteristic 46)
(j)	Fruit: firmness of flesh	(characteristic 47)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 States of Expression and Corresponding Notes

States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

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

6.5 Legend

(*) Asterisked characteristic – see Chapter 6.1.2

QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3

(a)–(d) See Explanations on the Table of Characteristics in Chapter 8.1
(+) See Explanations on the Table of Characteristics in Chapter 8.2

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

	English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. (*) (+)	**Ploidy**	**Ploïdie**	**Ploidie**	**Ploidía**		
QL	diploid	diploïde	diploid	diploide	Pisong Mas, Sucrier	2
	triploid	triploïde	triploid	triploide	Grand Nain, Prata Anã	3
	tetraploid	tétraploïde	tetraploid	tetraploide	Golden Beauty, Ouro da Mata, Platina	4
2. (+)	**Rhizome: number of suckers above ground**	**Rhizome : nombre de drageons au-dessus du sol**	**Rhizom: Anzahl oberirdischer Wurzeltriebe**	**Rizoma: número de serpollos sobre el suelo**		
QN	few	petit	gering	pocos	Sucrier	3
	medium	moyen	mittel	medios	Nanicão	5
	many	grand	groß	muchos	Prata Anã	7
3. (*) (+)	**Pseudostem: length**	**Pseudo-tronc : longueur**	**Pseudostamm: Länge**	**Pseudotallo: longitud**		
QN	very short	très court	sehr kurz	muy corta	Dwarf Cavendish, Salta do Cacho	1
	short	court	kurz	corta	Giant Cavendish, Williams, IAC 2001	3
	medium	moyen	mittel	media	Pisang Mas, Sucrier, Poyo, Prata Anã	5
	long	long	lang	larga	Pacovan	7
	very long	très long	sehr lang	muy larga	Gros Michel, Prata, Branca, Thap Maeo	9

✳ Highlighted example varieties indicate changes by the Leading Expert to the example varieties agreed by the TWF at its fortieth session. (Example varieties provided at the request of the TWF after the TWF session are not highlighted.)

	English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
4. (*) (+)	**Pseudostem: diameter**	**Pseudo-tronc : diamètre**	**Pseudostamm: Durchmesser**	**Pseudotallo: diámetro**		
QN	small	petit	klein	bajo	Yangambi Km 5, Sucrier	3
	medium	moyen	mittel	medio	Williams, Nanicão	5
	large	grand	groß	alto	Petite Naine	7
5. (+)	**Pseudostem: overlapping of leaf sheaths**	**Pseudo-tronc : chevauchement des gaines folières**	**Pseudostamm: Überlappen der Blattschäfte**	**Pseudotallo: solapamiento de las vainas foliares**		
	weak	faible	gering	débil	Gros Michel	1
	medium	moyen	mittel	medio	Williams	2
	strong	fort	stark	fuerte	Petite Naine	3
6. (+)	**Pseudostem: tapering along length**	**Pseudo-tronc : effilage**	**Pseudostamm: seitliche Verjüngung**	**Pseudotallo: afilado a lo largo**		
QN	absent or weak	absent ou faible	fehlend oder gering	ausente o débil	Grand Nain	1
	medium	moyen	mittel	medio	Nanicão	2
	strong	fort	stark	fuerte	Mysore	3
7.	**Pseudostem: color**	**Pseudo-tronc : couleur**	**Pseudostamm: Farbe**	**Pseudotallo: color**		
PQ	greenish yellow	jaune verdâtre	grünlichgelb	amarillo verdoso	Prata Anã	1
	light green	vert clair	hellgrün	verde claro	Pisang Awak	2
	medium green	vert moyen	mittelgrün	verde medio	D'Angola	3
	dark green	vert foncé	dunkelgrün	verde oscuro	São Tomé	4
	reddish green	vert rougeâtre	rötlichgrün	rojizo verde	Pacovan	5
	red	rouge	rot	rojo	Caru Verde	6
	purple	pourpre	purpurn	púrpura	Grand Nain	7

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
8. **(+)**		**Pseudostem: intensity of anthocyanin coloration**	**Pseudo-tronc : intensité de la pigmentation anthocyanique**	**Pseudostamm: Intensität der Anthocyanfärbung**	**Pseudotallo: intensidad de la pigmentación antociánica**		
QN		absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Bluggoe, Figo, Figue Pomme Nain	1
		weak	faible	gering	débil	Figue Pomme	3
		medium	moyenne	mittel	media	Gros Michel	5
		strong	forte	stark	fuerte	Caipira, Yangambi km 5	7
		very strong	très forte	sehr stark	muy fuerte	Petite Naine	9
9.		**Pseudostem: color of the inner side of sheath base**	**Pseudo-tronc : couleur de la face interne à la base de la gaine**	**Pseudostamm: Farbe der Innenseite der Schaftbasis**	**Pseudotallo: color del envés de la parte basal de la vaina**		
PQ		yellowish green	vert jaunâtre	gelblichgrün	verde amarillento	Sucrier	1
		green	vert	grün	verde	D'Angola, Prata Anã	2
		red	rouge	rot	rojo	Figue Rose Naine	3
		purple	pourpre	purpurn	púrpura	Grand Nain	4
10. **(+)**		**Plant: compactness of crown**	**Plante : densité de la couronne**	**Pflanze: Dichte der Krone**	**Planta: compacidad de la corona**		
QN	**(a)**	loose	lâche	locker	laxa	Bluggoe	3
		medium	moyenne	mittel	media	Prata Anã	5
		compact	compacte	dicht	compacta	Grand Nain	7
11. **(*)** **(+)**		**Plant: growth habit**	**Plante : port**	**Pflanze: Wuchsform**	**Planta: porte**		
QN	**(a)**	upright	dressé	aufrecht	erecto	Branca	1
		spreading	étalé	breitwüchsig	abierto	Nanicão	2
		drooping	retombant	überhängend	colgante	Silk	3

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
12. **(+)**		**Petiole: attitude of wings at base**	**Pétiole : port des ailes à la base**	**Blattstiel: Haltung der Flügel an der Basis**	**Peciolo: porte de las alas en la base**		
QN		curved outwards	courbé vers l'extérieur	auswärts gebogen	curvado hacia el exterior	TO BE PROVIDED	1
		straight	droit	gerade	recto	TO BE PROVIDED	2
		slightly curved inwards	légèrement courbé vers l'intérieur	leicht einwärts gebogen	ligeramente curvado hacia el interior	TO BE PROVIDED	3
		moderately curved inwards	modérément courbé vers l'intérieur	mäßig einwärts gebogen	moderadamente curvado hacia el interior	TO BE PROVIDED	4
		overlapping	chevauchant	überlappend	solapado	TO BE PROVIDED	5
13. **(*)** **(+)**		**Petiole: length**	**Pétiole : longueur**	**Blattstiel: Länge**	**Peciolo: longitud**		
QN	**(a)**	short	court	kurz	corta	Petite Naine	3
		medium	moyen	mittel	media	Nanicão	5
		long	long	lang	larga	Silk, Gros Michel, Prata, Branca	7
14. **(*)**		**Leaf blade: color of midrib on lower side**	**Limbe : couleur de la nervure sur la face inférieure**	**Blattspreite: Farbe der Mittelrippe an der Unterseite**	**Limbo: color de la nervadura en el envés**		
PQ	**(a)**	yellow	jaune	gelb	amarillo	Sucrier	1
		green	vert	grün	verde	Dwarf Cavendish, Prata Anã	2
		pink	rose	rosa	rosa	Yangambi Km 5	3
		purple	pourpre	purpurn	púrpura	Green Red	4
		black purple	pourpre noir	schwarzpurpurn	negro púrpura	Caru Roxa	5

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
15. (*) (+)		**Leaf blade: shape of base**	**Limbe : forme de la base**	**Blattspreite: Form der Basis**	**Limbo: forma de la parte basal**		
PQ	**(a)**	both sides rounded	deux bords arrondis	beide Seiten abgerundet	ambos lados redondeados	Bluggoe	1
		one side rounded and one side acute	un bord arrondi et un bord aigu	eine Seite abgerundet und eine Seite spitz	un lado redondeado y un lado agudo	Silk	2
		both sides acute	deux bords aigus	beide Seiten spitz	ambos lados agudos	Grand Nain	3
16.		**Leaf blade: waxiness on lower side**	**Limbe : glaucescence sur la face inférieure**	**Blattspreite: Wachsschicht an Unterseite**	**Limbo: cerosidad del envés**		
QN	**(a)**	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Sucrier	1
		weak	faible	gering	débil	Mysore	3
		medium	moyenne	mittel	media	Cavendish	5
		strong	forte	stark	fuerte	Figo, Silk	7
17.		**Leaf blade: length**	**Limbe : longueur**	**Blattspreite: Länge**	**Limbo: longitud**		
QN	**(a)**	short	court	kurz	corta	Petite Naine	3
		medium	moyen	mittel	media	Nanicão	5
		long	long	lang	larga	Branca, Pacovan	7
18.		**Leaf blade: width**	**Limbe : largeur**	**Blattspreite: Breite**	**Limbo: anchura**		
QN	**(a)**	narrow	étroit	schmal	estrecha	Branca, Sucrier	3
		medium	moyen	mittel	media	Giant Cavendish	5
		broad	large	breit	ancha	Grand Nain	7
19.		**Leaf blade: ratio length/width**	**Limbe : rapport longueur/largeur**	**Blattspreite: Verhältnis Länge/Breite**	**Limbo: relación longitud/anchura**		
QN	**(a)**	weakly elongated	faiblement allongé	schwach verlängert	débilmente elongado	Dwarf Cavendish	3
		moderately elongated	modérément allongé	mäßig verlängert	moderadamente elongado	Poyo	5
		strongly elongated	fortement allongé	stark verlängert	fuertemente elongado	Branca, Sucrier	7

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
20. (*)		**Leaf blade: glossiness of upper side**	**Limbe : brillance de la face supérieure**	**Blattspreite: Glanz der Oberseite**	**Limbo: brillo del haz**		
QL	**(a)**	absent	absente	fehlend	ausente	Grand Nain, Prata	1
		present	présente	vorhanden	presente	Bluggoe, Sucrier	9
21. **(+)**		**Peduncle: length**	**Pédoncule : longueur**	**Blütenstiel: Länge**	**Pedúnculo: longitud**		
QN	**(b)**	short	court	kurz	corta	Petite Naine, São Tomé	3
		medium	moyen	mittel	media	Pacovan, Prata, Nanicão	5
		long	long	lang	larga	Figue Rose, Gros Michel	7
22. **(+)**		**Peduncle: diameter**	**Pédoncule : diamètre**	**Blütenstiel: Durchmesser**	**Pedúnculo: diámetro**		
QN	**(b)**	small	court	klein	pequeño	Sucrier	3
		medium	moyen	mittel	medio	Prata, Nanicão	5
		large	long	groß	grande	Grand Nain, Prata Anã	7
23. (*)		**Peduncle: pubescence**	**Pédoncule : pilosité**	**Blütenstiel: Behaarung**	**Pedúnculo: pubescencia**		
QL	**(b)**	absent	absente	fehlend	ausente	Prata Anã	1
		present	présente	vorhanden	presente	Nanicão	9
24. **(+)**		**Peduncle: curvature**	**Pédoncule : courbure**	**Blütenstiel: Biegung**	**Pedúnculo: curvatura**		
QN	**(b)**	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Branca	1
		weak	faible	gering	débil	Silk	3
		medium	moyenne	mittel	media	Grand Nain, Nanicão	5
		strong	forte	stark	fuerte	Yangambi Km 5	7

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
25. (*) (+)		**Bunch: length**	**Régime : longueur**	**Fruchtstand: Länge**	**Racimo: longitud**		
QN	**(b)**	short	court	kurz	corta	Sucrier, Bluggoe	3
		medium	moyen	mittel	media	Pacovan, Prata, Branca	5
		long	long	lang	larga	Grand Nain, Williams, IAC 2001, Gros Michel	7
26. (*) (+)		**Bunch: diameter**	**Régime : diamètre**	**Fruchtstand: Durchmesser**	**Racimo: diámetro**		
QN		narrow	étroit	schmal	estrecho	Sucrier, Pisang Mas, Silk	3
		medium	moyen	mittel	medio	Prata, Poyo, Nanicão	5
		broad	large	breit	ancho	D'Angola, Dwarf Cavendish, IAC 2001	7
27.		**Bunch: shape**	**Régime : forme**	**Fruchtstand: Form**	**Racimo: forma**		
(+)							
	(b)	cylindrical	cylindrique	zylindrisch	cilíndrica	Grand Nain, Williams, IAC 2001	1
		irregular	irrégulière	unregelmäßig	irregular		2
PQ		conical	conique	kegelförmig	cónica	Dwarf Cavendish, Petite Naine, Prata Anã, Sucrier	3
28. (*) (+)		**Bunch: attitude of fruits**	**Régime : port des fruits**	**Fruchtstand: Haltung der Früchte**	**Racimo: porte de los frutos**		
QN	**(b)**	horizontal to slightly turned up	horizontal à légèrement relevé	horizontal bis schwach aufwärts gebogen	horizontal a ligeramente girado hacia arriba	São Tomé	1
		moderately turned up	modérément relevé	mäßig aufwärts gebogen	moderadamente girado hacia arriba	Prata Anã, Pisang Awak	2
		strongly turned up	fortement relevé	stark aufwärts gebogen	fuertemente girado hacia arriba	Terra, Figue Pomme, IAC 2001	3

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
29.		**Bunch: compactness**	**Régime : densité**	**Fruchtstand: Dichte**	**Racimo: compacidad**		
QN	**(b)**	loose	lâche	locker	laxa	Bluggoe, Pacovan	1
		medium	moyenne	mittel	media	Williams, Silk, Dwarf Cavendish	5
		compact	compacte	dicht	compacta	Mysore, São Tomé, Sucrier	7
30. (*) (+)		**Bunch: number of hands**	**Régime : nombre de mains**	**Fruchtstand: Anzahl Hände**	**Racimo: número de manos**		
QN	**(b)**	few	petit	gering	pocas	D'Angola, Green Red, Bluggoe	3
		medium	moyen	mittel	medio	Prata, Branca, Silk	5
		many	grand	groß	abundantes	Grand Nain, IAC 2001, Gros Michel	7
31. (*) (+)		**Rachis: attitude of male part**	**Rachis : port de la partie mâle**	**Spindel: Haltung des männlichen Teils**	**Raquis: porte de la parte macho**		
PQ		vertical	vertical	vertikal	vertical	Branca, Nanicão, Grand Nain	1
		inclined	incliné	geneigt	inclinado	Silk, Prata	2
		curved with vertical end	courbé avec extrémité verticale	gekrümmt mit senkrechtem Ende	curvado con el extremo vertical	Branca, Lacatan, Gros Michel	3
		horizontal with inclined end	horizontal avec extrémité inclinée	horizontal mit geneigtem Ende	horizontal con el extremo inclinado	Sucrier, Mysoure	4
32. (+)		**Rachis: prominence of scars**	**Rachis : importance des cicatrices**	**Spindel: Ausprägung der Narbe**	**Raquis: prominencia de las cicatrices**		
QN	**(c)**	weak	faible	gering	débil	Gia Hui, Sucrier	1
		moderate	modérée	mäßig	moderada	Nanica	2
		strong	forte	stark	fuerte	Ouro-da-Mata, Pisang Awak	3

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
33. (*) (+)		**Rachis: persistence of bracts**	**Rachis : persistance des bractées**	**Spindel: Anhaften der Deckblätter**	**Raquis: persistencia de las brácteas**		
QN	**(c)**	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	Silk, IAC 2001, Sucrier	1
		moderate	modérée	mäßig	moderada	Prata, Nanicão	2
		strong	forte	stark	fuerte	Prata Anã, Dwarf Cavendish	3
34.		**Rachis: persistence of hermaphrodite flowers**	**Rachis : persistance des fleurs hermaphrodites**	**Spindel: Anhaften der hermaphroditen Blüten**	**Raquis: persistencia de flores hermafroditas**		
QL	**(c)**	absent	absente	fehlend	ausente	Silk, Sucrier, IAC 2001	1
		present	présente	vorhanden	presente	Mysore, Nanicão, Prata	9
35. (*) (+)		**Fruit: longitudinal curvature**	**Fruit : courbure longitudinale**	**Frucht: Längskrümmung**	**Fruto: curvatura longitudinal**		
PQ	**(c)**	straight	droite	gerade	recto	Pacovan	1
		slightly curved in distal part	légèrement courbée dans la partie distale	leicht gebogen im distalen Teil	ligeramente curvado en la parte distal	Nanicão, Lacatan	2
		evenly curved	uniformément courbée	gleichmäßig gebogen	uniformemente curvado	Petite Naine	3
		S-shaped	en forme de S	S-förmig	en forma de S		4
36. (*) (+)		**Fruit: longitudinal ridges**	**Fruit : arêtes longitudinales**	**Frucht: Längsrippen**	**Fruto: aristas longitudinales**		
QN	**(c)**	absent or weak	absentes ou faibles	fehlend oder gering	ausentes o débiles	Silk, Sucrier, Yangambi Km 5, IAC 2001	1
		moderate	modérées	mäßig	moderadas	Gros Michel, Prata, Pacovan	2
		strong	fortes	stark	fuertes	Bluggoe, Terra, Gia Hui	3

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
37. (*) (+)		**Fruit: length**	**Fruit : longueur**	**Frucht: Länge**	**Fruto: longitud**		
QN	**(d)**	short	court	kurz	corta	Thap Maeo, Silk, Sucrier	3
		medium	moyen	mittel	media	IAC 2001, Grand Nine, Pacovan	5
		long	long	lang	larga	Terra, Gia Hui, D'Angola	7
38. (*) (+)		**Fruit: width (excluding ridges)**	**Fruit : largeur (arêtes exclues)**	**Frucht: Beite (ohne Rippen)**	**Fruto: anchura (excluyendo las aristas)**		
QN	**(d)**	narrow	étroit	schmal	estrecha	Sucrier, Silk	3
		medium	moyen	mittel	media	Grand Nain, Pisang Awak, Nanicão	5
		broad	large	breit	ancha	Bluggoe, D'Angola, Terra	7
39. (+)		**Fruit: length of pedicel**	**Fruit : longueur du pédicelle**	**Frucht: Länge des Stiels**	**Fruto: longitud of pedicelo**		
QN	**(d)**	short	court	kurz	corta	Sucrier, Yangambi Km 5	3
		medium	moyen	mittel	media	Prata, Nanicao, Silk	5
		long	long	lang	larga	Figue Pomme, Terra	7
40. (*) (+)		**Fruit: shape of apex**	**Fruit : forme du sommet**	**Frucht: Form der Spitze**	**Fruto: forma del ápice**		
PQ	**(d)**	rounded	arrondi	abgerundet	redondeada	Pisang Mas, Sucrier, Green Red, IRFA 2003	1
		truncate	tronqué	abgestumpft	truncada	Dwarf Cavendish, Williams, IAC 2001	2
		bottle-necked	rétréci	mit Hals	cuello de botella	Gros Michel, Figo Cinza	3
		pointed	pointu	ausgezogen	puntiaguda	Pacovan, Branca, Terra, Pacova	4

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
41. (*) (+)		**Fruit: thickness of peel**	**Fruit : épaisseur de la peau**	**Frucht: Dicke der Schale**	**Fruto: espesor de la cáscara**		
QN	**(d)**	thin	mince	dünn	delgado	Silk, Sucrier, Branca	3
		medium	moyenne	mittel	medio	IAC 2001, Dwarf Cavendish, Williams	5
		thick	épaisse	dick	grueso	Pacovan, Terra, Bluggoe	7
42. (*) (+)		**Fruit: color of peel (before maturity)**	**Fruit : couleur de la peau (avant maturité)**	**Frucht: Farbe der Schale (vor der Reife)**	**Fruto: color de la cáscara (antes de la madurez)**		
PQ		light yellow	jaune clair	hellgelb	amarillo claro	Plantain	1
		medium yellow	jaune moyen	mittelgelb	amarillo medio	Prata	2
		dark yellow	jaune foncé	dunkelgelb	amarillo oscuro	Sucrier, São Domingos	3
		greenish yellow	jaune verdâtre	grünlichgelb	amarillo verdoso	Cavendish	4
		light green	vert clair	hellgrün	verde claro	Silk	5
		medium green	vert moyen	mittelgrün	verde medio	Gros Michel	6
		dark green	vert foncé	dunkelgrün	verde oscuro	Sao Tome, Mysore	7
		pink	rose	rosa	rosa	Green Red	8
		red	rouge	rot	rojo	Caru Roxa	9

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
43. (*)		**Fruit: color of peel**	**Fruit : couleur de la peau**	**Frucht: Farbe der Schale**	**Fruto: color de la cáscara**		
PQ	**(d)**	light yellow	jaune clair	hellgelb	amarillo claro	Gros Michel, Branca, Pacovan	1
		medium yellow	jaune moyen	mittelgelb	amarillo medio	Prata, Plantain, Bluggoe	2
		greenish yellow	jaune verdâtre	grünlichgelb	amarillo verdoso	Dwarf Cavendish, Williams, IAC 2001	3
		green	vert	grün	verde	Gia Hui	4
		dark yellow	jaune foncé	dunkelgelb	amarillo oscuro	Sucrier, Pisang Mas, Silk	5
		orange	orange	orange	anaranjado		6
		red orange	rouge orangé	rotorange	naranja rojizo	Gren Red, São Tomé	7
		reddish	rougeâtre	rötlich	rojizo	Caru Roxa	8
		black	noir	schwarz	negro	Black French Plantain	9
44.		**Fruit: adherence of peel**	**Fruit : adhérence de la peau**	**Frucht: Anhaften der Schale**	**Fruto: adherencia de la cáscara**		
QN	**(d)**	weak	faible	gering	débil	Silk	3
		medium	moyenne	mittel	media	Grand Nain, Petite Naine, IAC 2001	5
		strong	forte	stark	fuerte	Sucrier	7
45. (+)		**Fruit: persistence of floral organs**	**Fruit : persistance des organes floraux**	**Frucht: Anhaften der Blütenorgane**	**Fruto: persistencia de los órganos florales**		
QL	**(d)**	absent	absente	fehlend	ausente	Figue rose, Sucrier	1
		present	présente	vorhanden	presente	Yangambi km 5, Williams, Petite Naine	9

		English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
46. (*)		**Fruit: color of flesh**	**Fruit : couleur de la chair**	**Frucht: Farbe des Fruchtfleisches**	**Fruto: color de la cáscara**		
PQ	**(d)**	white	blanche	weiß	blanco	Silk, Branca, Gros Michel , Pisang awak	1
		whitish	blanchâtre	weißlich	blanquecino	Pacovan, Prata, IAC 2001, Williams	2
		cream	crème	cremefarben	crema	Caru Roxa, São Tomé	3
		yellow	jaune	gelb	amarillo	Pisang Mas, Sucrier	4
		orange	orange	orange	anaranjado	Terra, D'Angola	5
		pinkish cream	crème rosâtre	rosacremefarben	rosáceo crema	São Domingos	6
47. (*)		**Fruit: firmness of flesh**	**Fruit : fermeté de la chair**	**Frucht: Festigkeit des Fruchtfleisches**	**Fruto: firmeza de la pulpa**		
QN	**(d)**	soft	molle	weich	blanda	Grand Nain, Silk, IAC 2001	1
		medium	moyenne	mittel	media	Pacovan, Prata, Branca	3
		firm	ferme	fest	firme	Terra, Bluggoe, Gia Hui	5
48. (*) (+)		**Male inflorescence: persistence**	**Inflorescence mâle : persistance**	**Männlicher Blütenstand: Anhaften**	**Inflorescencia masculina: persistencia**		
QL	**(d)**	absent	absente	fehlend	ausente	Gros Michel, Sucrier, Silk	1
		present	présente	vorhanden	presente	Petite Naine, Nanicão, Grand Nain	9
49. (+)		**Male inflorescence: shape (in cross section)**	**Inflorescence mâle : forme (en section transversale)**	**Männlicher Blütenstand: Form (im Querschnitt)**	**Inflorescencia masculina: forma (en la sección transversal)**		
QN		lanceolate	lancéolée	lanzettlich	lanceolada	Pacovan, Pisang Awak,, Gros Michel	1
		narrow ovate	ovale étroite	schmal eiförmig	estrecha oval		2
		medium ovate	ovale moyenne	mittel eiförmig	media oval		3
		broad ovate	ovale large	breit eiförmig	ovalada ancha	Prata	4

	English	français	deutsch	Español	Example Varieties/✳ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
50. **(+)**	**Male inflorescence: overlap of bracts**	**Inflorescence mâle : chevauchement des bractées**	**Männlicher Blütenstand: Überlappen der Deckblätter**	**Inflorescencia masculina: solapamiento de las brácteas**		
QN	weak	faible	gering	débil		1
	medium	moyen	mittel	medio	Pacovan	3
	strong	fort	stark	fuerte	Nanicão	5
51.	**Bract: color of inner side**	**Bractée : couleur de la face interne**	**Deckblatt: Farbe der Innenseite**	**Bráctea: color del envés**		
PQ	whitish	blanchâtre	weißlich	blanquecino		1
	yellow	jaune	gelb	amarillo		2
	yellow green	vert jaune	gelbgrün	verde amarillento		3
	green	vert	grün	verde		4
	pink	rose	rosa	rosa		5
	orange red	rouge orangé	orangerot	rojo anaranjado		6
	red	rouge	rot	rojo		7
	purple	pourpre	purpurn	púrpura		8
52. **(+)**	**Male inflorescence: shape of apex of bract**	**Inflorescence mâle : forme du sommet de la bractée**	**Männlicher Blütenstand: Form der Deckblattspitze**	**Inflorescencia masculina: forma del ápice de la bráctea**		
PQ	narrow acute	aigu étroit	schmal spitz	aguda estrecha		1
	broad acute	aigu large	breit spitz	aguda ancha		2
	right angle	angle droit	rechtwinklig	ángulo recto		3
	obtuse	obtus	stumpf	obtusa		4
	emarginate	échancré	eingekerbt	emarginada		5

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

(a) Unless otherwise stated, all observations on the leaf should be made on the third leaf from the apex at the moment of inflorescence emerging of those fruit bunches which were originally marked for observation.

(b) All observations on the fruit bunch should be done at fruit maturity (harvest time) [on those bunches which were originally marked for flower observations]. (TG/123/3, 1989).

(c) All observations on inflorescence and flower should be made at the time of full flowering.

(d) All observations on the fruit should be made on the third hand on a median standard fruit of the inner cluster, at stage 6 for ripe fruit. (See Ad: 44 –stage 5)

Color stages according to the following scheme:

Taken from: “Stage for ripe fruit: according Inipab Technical Guidelines – Routine Post-Harvest Screening of Banana Plantain Hybrids: Criteria and Methods, B. K. Dadzie et J. E. Orchard.”

8.2 Explanations for individual characteristics

Ad. 1: Ploidy

Used for musa:

African Crop Science Journal, Vol. 11. No. 2, 2003, pp. 119-124

Short Communication

ESTABLISHING THE GENOME OF *'SUKALI NDIZI'*

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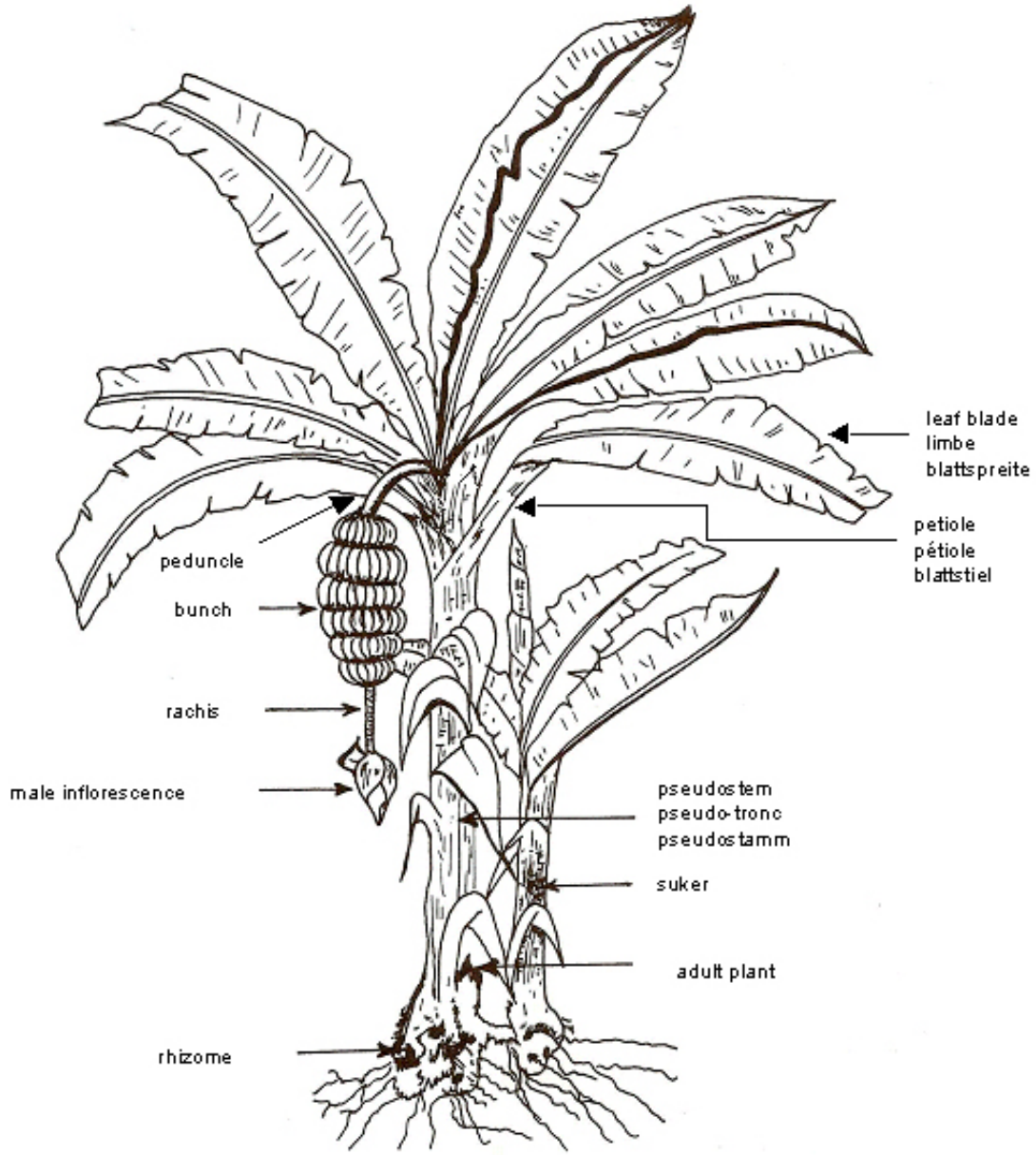
(Received 22 February, 2002; accepted 8 April, 2003)

Chromosome counts from root tips of plants. Briefly, fresh root tips were pretreated for 2 h in 0.036% 8-hydroxyquinoline and then fixed in 3:1 ethanol-acetic acid. The meristematic zones were digested at 37° C in an enzyme mixture consisting of 5% cellulase (Sigma Chemicals), 1% pectinase and 1% pectolyase Y23 (Karlan Research, Santa Rosa, Calif) made in a citrate buffer, pH 4.5.The enzyme solution was removed and the meristems were washed with water several times. A single meristem was placed on a glass slide, the excess water removed with a paper towel and 1 or 2 drops of freshly prepared 3:1 ethanol-acetic acid placed over it. The meristem was macerated and the cells smeared over the slide with a fine forceps. The slide was observed in a phase contrast microscope. When the cells began to adhere to the slide, several drops of the 3:1 was placed over one end of the slide and allowed to flow over the cells. The slide was air-dried and stained with Leishman's stain as described by Singh (1993).

Singh, R.J. 1993. Plant Cytogenetics. CRC Press, Inc., Boca Raton. 391 pp.

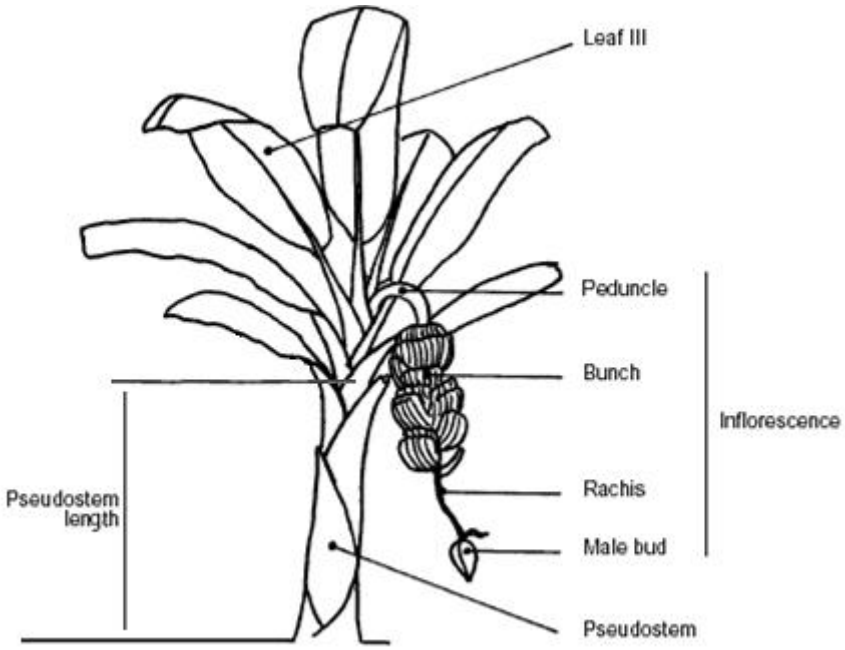
Ad. 2: Rhizome: number of suckers above ground

Assessed at harvest time with visible suckers.



Ad. 3: Pseudostem: length

The length of the pseudostem should be observed from the ground level to the crown of the peduncle, at the beginning of flowering.



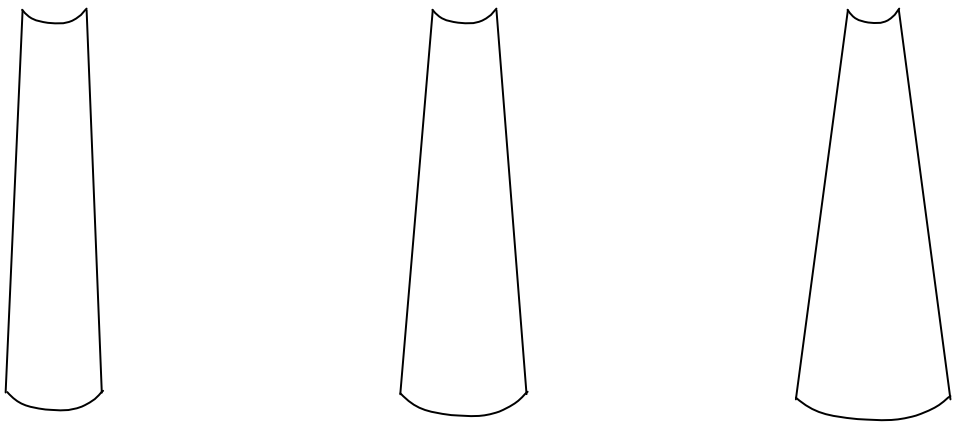
Ad. 4: Pseudostem: diameter

The diameter of the pseudostem should be observed at a consistent height above ground level for all varieties (e.g. 0.3 meters above ground) at the beginning of flowering.

Ad. 5: Pseudostem: overlapping of leaf sheaths

TO BE PROVIDED BY FRANCE

Ad. 6: Pseudostem: tapering along length



1	2	3
absent or weak	medium	strong

Ad. 8: Pseudostem: intensity of anthocyanin coloration

3
weak

5
medium

7
strong

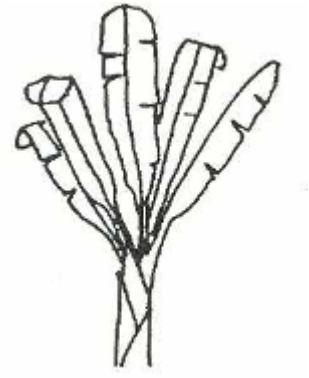
Ad. 10: Plant: compactness of crown

3
loose

7
compact

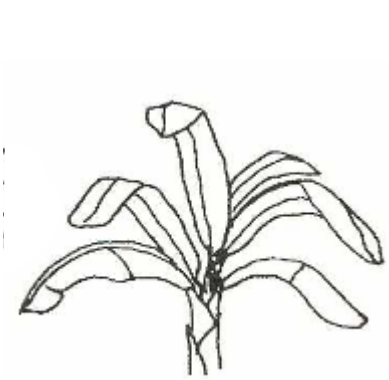
Ad. 11: Plant: growth habit

The growth habit should be observed at harvest time, at the moment of inflorescence emerging of those fruit bunches which were originally marked for observation.



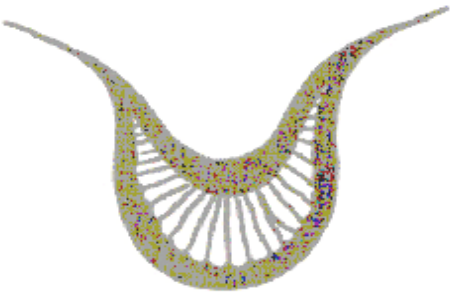
1
upright

2
spreading



3
drooping

Ad. 12: Petiole: attitude of wings at base



1
curved outwards

2
straight

3
slightly curved inwards

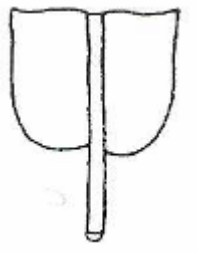
4
moderately curved inward

5
overlapping

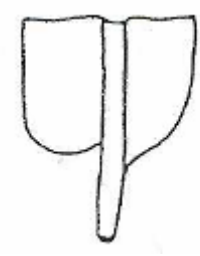
Ad. 13: Petiole: length

Measured from the pseudostem to the base of the leaf blade.

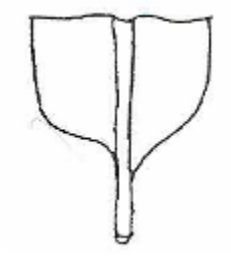
Ad. 15: Leaf blade: shape of base



1
both sides rounded



2
one side rounded and one side acute



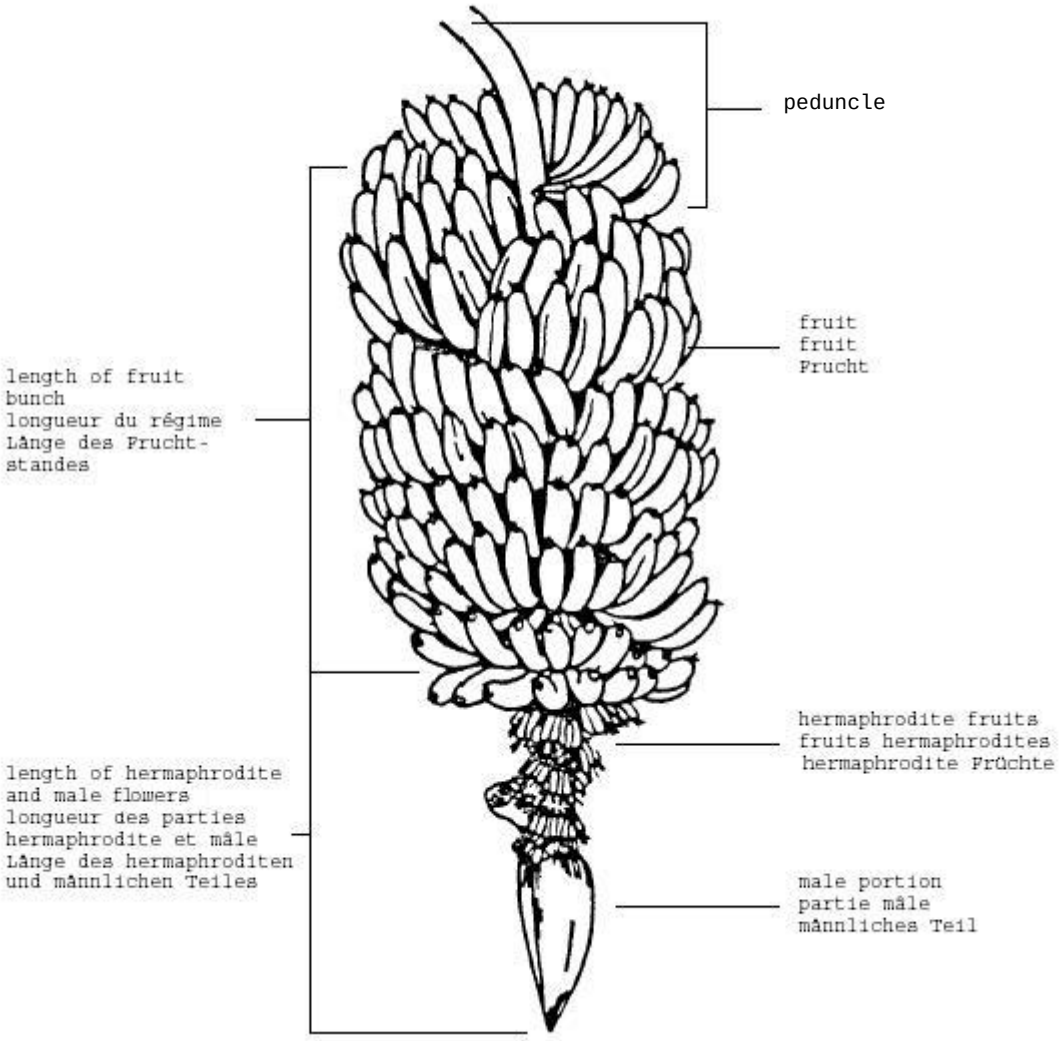
3
both sides acute

Ad. 21: Peduncle: length

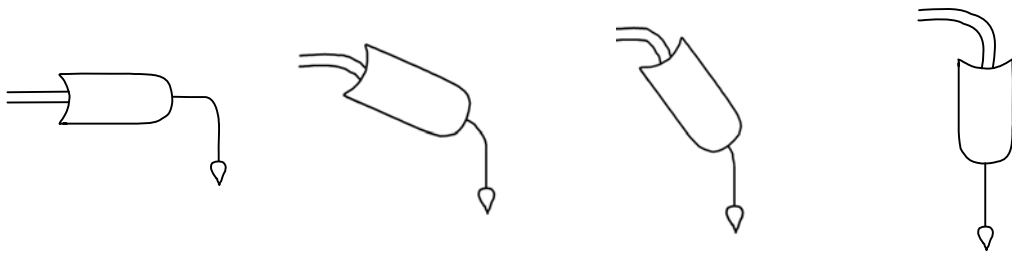
The length of the peduncle should be determined from the attachment point of the bunch to the first hand.

Ad. 22: Peduncle: diameter

The diameter of the peduncle should be assessed in the middle point between the attachment point of the bunch and the first hand.



Ad. 24: Peduncle: curvature



1	3	5	7
absent or very weak	weak	medium	strong

Ad. 25: Bunch: length

The length of the bunch should be measured from the attachment point of the first hand to the last hand.

Ad. 26: Bunch: diameter

The diameter of the bunch should be measured at the middle the attachment of the first hand to the last hand.

Ad. 27: Bunch: shape

1

cylindrical

2

irregular

3

conical

Ad. 28: Bunch: attitude of fruits

1

horizontal to slightly turned up

2

moderately turned up

3

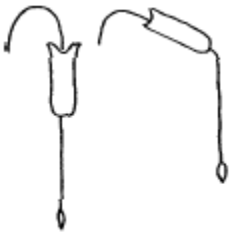
strongly turned up

Ad. 30: Bunch: number of hands

hand

Ad. 31: Rachis: attitude of male part

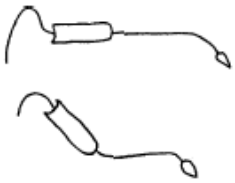
Assessed just before harvest time.



1
vertical

2
inclined

3
curved with vertical end



4
horizontal with inclined end

Ad. 32: Rachis: prominence of scars

1
weak

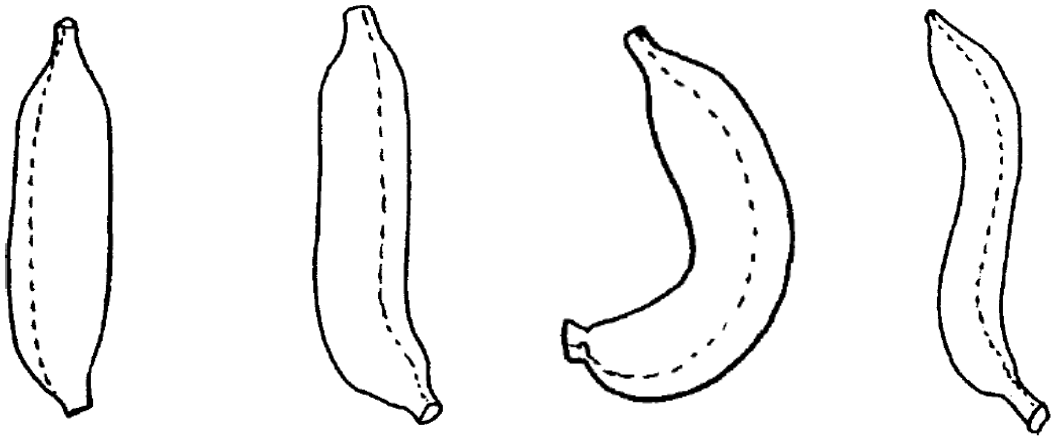
3
strong

Ad. 33: Rachis: persistence of bracts

1
absent or weak

3
strong

Ad. 35: Fruit: longitudinal curvature



1	2	3	4
straight	slightly curved in distal part	evenly curved	S-shaped

Ad. 36: Fruit: longitudinal ridges

To be observed on the outer cluster of the third hand on the middle fruit.

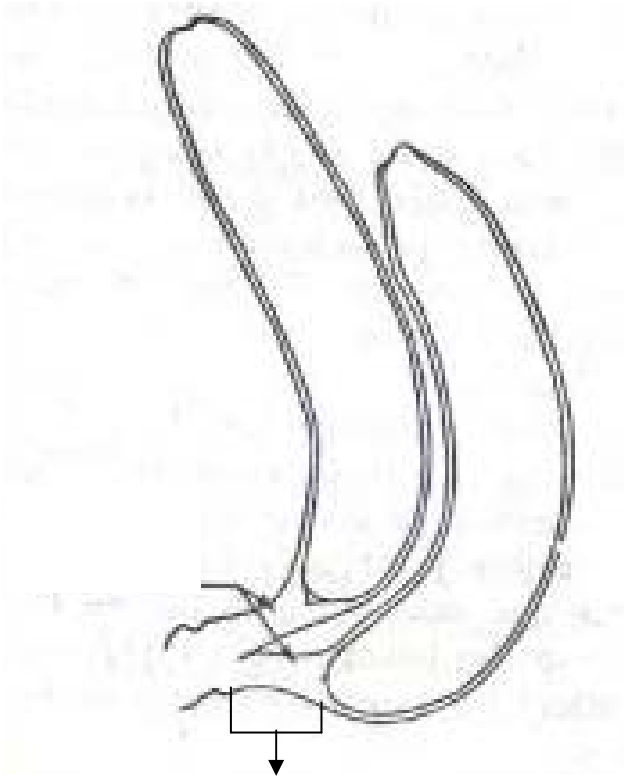
1	2	3
absent or weak	moderate	strong

Ad. 37: Fruit: length

The length of the fruit should be determined on the outer (convex) side from where the fruit widens at the stalk end to the apical point.

Ad. 38: Fruit: width (excluding ridges)

Ad. 39: Fruit: length of pedicel



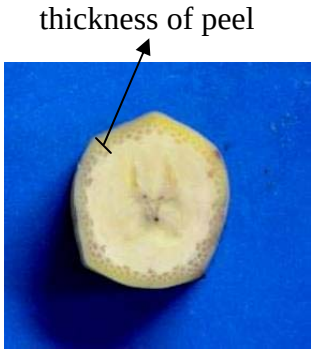
Length
of
pedicel

Ad. 40: Fruit: shape of apex

To observe from narrowest to widest.

1	2	3	4
rounded	truncate	bottle-necked	pointed

Ad. 41: Fruit: thickness of peel



Ad. 42: Fruit: color of peel (before maturity)

The color of the peel should be observed when the fruit has developed to its full size.

Ad. 45: Fruit: persistence of floral organs

1
absent

9
present

Ad. 48: Male inflorescence: persistence

1
absent

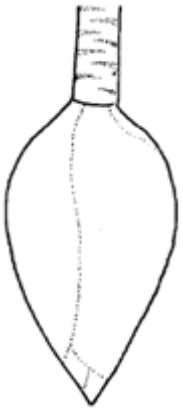
9
present

Ad. 49: Male inflorescence: shape (in cross section)

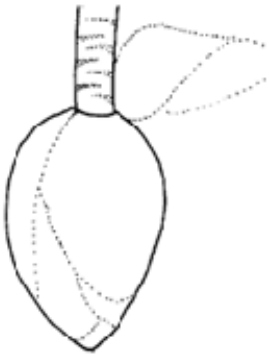
Should be assessed at harvest time.

1
lanceolate

2
narrow ovate



3
medium ovate



4
broad ovate

Ad. 50: Male inflorescence: overlap of bracts

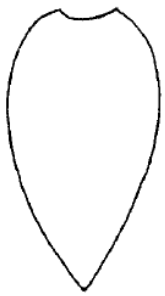
3
weak

5
medium

7
strong

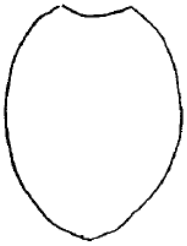
Ad. 52: Male inflorescence: shape of apex of bract

1
narrow acute

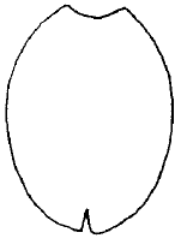


2
broad acute

3
right angle



4
obtuse



5
emarginate

9. Literature

Daniels, J.W., March-April 1986: Banana cultivars in Australia. Queensland Agriculture Journal, AU, pp. 75-84.

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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	*Musa acuminata* Colla	[ ]
1.1.2 Common name	Banana	
1.1.3 Botanical group (please complete e.g. AA, AAA)		
1.2.1 Botanical name	*Musa* ×*paradisiaca* L. (*M. acuminata* Colla × *M. balbisiana* Colla)	[ ]
1.2.2 Botanical group (please complete e.g. AAB, ABB)		

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)

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

(c) unknown cross [ ]

4.1.2 Mutation [ ]
(please state parent variety)

4.1.3 Discovery and development [ ]
(please state where and when discovered and how developed)

4.1.4 Other [ ]
(please provide details)

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) corms or rhizomes [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

4.2.2 Seed [ ]

4.2.3 Other [ ]
(please provide details)

[#] Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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

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 (3)	**Pseudostem: length**		
	very short	Dwarf Cavendish, Salta do Cacho	1[ ]
	short	Giant Cavendish, Williams, IAC 2001	3[ ]
	medium	Pisang Mas, Sucrier, Poyo, Prata Anã	5[ ]
	long	Pacovan	7[ ]
	very long	Gros Michel, Prata, Branca, Thap Maeo	9[ ]
5.2 (25)	**Bunch: length**		
	short	Sucrier, Bluggoe	3[ ]
	medium	Pacovan, Prata, Branca	5[ ]
	long	Grand Nain, Williams, IAC 2001, Gros Michel	7[ ]
5.3 (26)	**Bunch: diameter**		
	narrow	Sucrier, Pisang Mas, Silk	3[ ]
	medium	Prata, Poyo, Nanicão	5[ ]
	broad	D'Angola, Dwarf Cavendish, IAC 2001	7[ ]
5.4 (36)	**Fruit: longitudinal ridges**		
	absent or weak	Silk, Sucrier, Yangambi Km 5, IAC 2001	1[ ]
	moderate	Gros Michel, Prata, Pacovan	2[ ]
	strong	Bluggoe, Terra, Gia Hui	3[ ]

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

	Characteristics	Example Varieties	Note
5.5 (37)	**Fruit length**		
	short	Thap Maeo, Silk, Sucrier	3[ ]
	medium	IAC 2001, Grand Nine, Pacovan	5[ ]
	long	Terra, Gia Hui, D'Angola	7[ ]
5.6 (40)	**Fruit: shape of apex**		
	rounded	Pisang Mas, Sucrier, Green Red, IRFA 2003	1[ ]
	truncate	Dwarf Cavendish, Williams, IAC 2001	2[ ]
	bottle-necked	Gros Michel, Figo Cinza	3[ ]
	pointed	Pacovan, Branca, Terra, Pacova	4[ ]
5.7 (41)	**Fruit thickness of peel**		
	thin	Silk, Sucrier, Branca	3[ ]
	medium	IAC 2001, Dwarf Cavendish, Williams	5[ ]
	thick	Pacovan, Terra, Bluggoe	7[ ]

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

	Characteristics	Example Varieties	Note
5.8 (43)	**Fruit: color of peel**		
	light yellow	Gros Michel, Branca, Pacovan	1[ ]
	medium yellow	Prata, Plantain, Bluggoe	2[ ]
	greenish yellow	Dwarf Cavendish, Williams, IAC 2001	3[ ]
	green	Gia Hui	4[ ]
	dark yellow	Sucrier, Pisang Mas, Silk	5[ ]
	orange		6[ ]
	red orange	Gren Red, São Tomé	7[ ]
	reddish	Caru Roxa	8[ ]
	black	Black French Plantain	9[ ]
5.9 (46)	**Fruit: color of flesh**		
	white	Silk, Branca, Gros Michel, Pisang awak	1[ ]
	whitish	Pacovan, Prata, IAC 2001, Williams	2[ ]
	cream	Caru Roxa, São Tomé	3[ ]
	yellow	Pisang Mas, Sucrier	4[ ]
	orange	Terra, D'Angola	5[ ]
	pinkish cream	São Domingos	6[ ]
5.10 (47)	**Fruit: firmness of flesh**		
	soft	Grand Nain, Silk, IAC 2001	1[ ]
	medium	Pacovan, Prata, Branca	3[ ]
	firm	Terra, Bluggoe, Gia Hui	5[ ]

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

6. Similar varieties and differences from these varieties

Please use the table, and space provided for comments, below 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	*Pseudostem: length*	*medium*	*short*

Comments:

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

[#]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

A representative color photograph of the variety should accompany the Technical Questionnaire

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.

[#] Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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

9. Information on plant material to be examined or submitted for examination.

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a) Microorganisms (e.g. virus, bacteria, phytoplasma) Yes [ ] No [ ]

(b) Chemical treatment (e.g. growth retardant, pesticide) Yes [ ] No [ ]

(c) Tissue culture Yes [ ] No [ ]

(d) Other factors Yes [ ] No [ ]

Please provide details for where you have indicated “yes”.

……

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant’s name:

Signature Date:

[End of document]