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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

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

Alternative Names:*

| <i>Botanical name</i> | <i>English</i> | <i>French</i> | <i>German</i> | <i>Spanish</i> |
|--|---|----------------------------|------------------------|---|
| <i>Musa acuminata</i> Colla | Banana, Cavendish banana, Chinese banana, Dwarf banana | Bananier, Bananier nain | Banane, Zwergbanane | Bananera, Banano, Platanera, Plátano |
| <i>Musa x paradisiaca</i> L., <i>M. acuminata</i> Colla × <i>M. balbisiana</i> 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).

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.

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, IAC 2001, Williams | 3 |
| | medium | moyen | mittel | media | Pisang Mas, Poyo, Prata Anã, Sucrier | 5 |
| | long | long | lang | larga | Pacovan | 7 |
| | very long | très long | sehr lang | muy larga | Branca, Gros Michel, Prata, Thap Maeo | 9 |
| 4. (*) (+) | Pseudostem: diameter | Pseudo-tronc : diamètre | Pseudostamm: Durchmesser | Pseudotallo: diámetro | | |
| QN | small | petit | klein | bajo | Sucrier, Yangambi Km 5 | 3 |
| | medium | moyen | mittel | medio | Nanicão, Williams | 5 |
| | large | grand | groß | alto | Petite Naine | 7 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|------------------|--|---|---|---|---|---------------|
| 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 | Pseudo-tronc : effilage | Pseudostamm: Verjüngung | Pseudotallo: afilado | | |
| 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 |
| 8. (+) | Pseudostem: anthocyanin coloration | Pseudo-tronc : pigmentation anthocyanique | Pseudostamm: Anthocyanfärbung | Pseudotallo: 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 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|-------------------------|--|--|--|---|---|---------------|
| 9. | Pseudostem: color of inner side of basal sheath | 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 vaina basal | | |
| 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 |
| 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 | French Plantain | 1 |
| | straight | droit | gerade | recto | Pisang Mas | 2 |
| | slightly curved inwards | légèrement courbé vers l'intérieur | leicht einwärts gebogen | ligeramente curvado hacia el interior | Dwarf Cavendish | 3 |
| | moderately curved inwards | modérément courbé vers l'intérieur | mäßig einwärts gebogen | moderadamente curvado hacia el interior | Silk | 4 |
| | overlapping | chevauchant | überlappend | solapado | Prata | 5 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo | Note/ Nota |
|-------------------------|--|---|--|---|--|---------------|
| 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 | Branca, Gros Michel, Prata, Silk | 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 |
| 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 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|----------------|---|--|--|---|---|---------------|
| 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 |
| 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 | Nanicão, Pacovan, Prata | 5 |
| | long | long | lang | larga | Figue Rose, Gros Michel | 7 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|-------------------------|---------------------------------|---------------------------------|-------------------------------------|-----------------------------------|---|---------------|
| 22. (+) | Peduncle: diameter | Pédoncule : diamètre | Blütenstiel: Durchmesser | Pedúnculo: diámetro | | |
| QN (b) | small | court | klein | pequeño | Sucrier | 3 |
| | medium | moyen | mittel | medio | Nanicão, Prata | 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, Nanicao | 5 |
| | strong | forte | stark | fuerte | Yangambi Km 5 | 7 |
| 25. (* (+) | Bunch: length | Régime : longueur | Fruchtstand: Länge | Racimo: longitud | | |
| QN (b) | short | court | kurz | corta | Bluggoe, Sucrier | 3 |
| | medium | moyen | mittel | media | Branca, Pacovan, Prata | 5 |
| | long | long | lang | larga | Grand Nain, Gros Michel, IAC 2001, Williams | 7 |
| 26. (* (+) | Bunch: diameter | Régime : diamètre | Fruchtstand: Durchmesser | Racimo: diámetro | | |
| QN (b) | narrow | étroit | schmal | estrecho | Pisang Mas, Silk, Sucrier | 3 |
| | medium | moyen | mittel | medio | Nanicão, Prata, Poyo | 5 |
| | broad | large | breit | ancho | D'Angola, Dwarf Cavendish, IAC 2001 | 7 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|------------|--|-------------------------------------|---|--|---|---------------|
| 27. | Bunch: shape | Régime : forme | Fruchtstand: Form | Racimo: forma | | |
| (+) | | | | | | |
| PQ | (b) cylindrical | cylindrique | zylindrisch | cilíndrica | Grand Nain, IAC 2001, Williams | 1 |
| | irregular | irrégulière | unregelmäßig | irregular | | 2 |
| | 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 | Pisang Awak, Prata Anã | 2 |
| | strongly turned up | fortement relevé | stark aufwärts gebogen | fuertemente girado hacia arriba | Figue Pomme, IAC 2001, Terra, | 3 |
| 29. | Bunch: compactness | Régime : densité | Fruchtstand: Dichte | Racimo: compacidad | | |
| QN | (b) loose | lâche | locker | laxa | Bluggoe, Pacovan | 1 |
| | medium | moyenne | mittel | media | Dwarf Cavendish, Silk, Williams | 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 | Bluggoe, D'Angola, Green Red | 3 |
| | medium | moyen | mittel | medio | Branca, Prata, Silk | 5 |
| | many | grand | groß | abundantes | Grand Nain, Gros Michel, IAC 2001 | 7 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|-------------------------|---|---|--|---|---|---------------|
| 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, Grand Nain, Nanicão | 1 |
| | inclined | incliné | geneigt | inclinado | Prata, Silk | 2 |
| | curved with vertical end | courbé avec extrémité verticale | gekrümmt mit senkrechtem Ende | curvado con el extremo vertical | Branca, Gros Michel, Lacatan | 3 |
| | horizontal with inclined end | horizontal avec extrémité inclinée | horizontal mit geneigtem Ende | horizontal con el extremo inclinado | Mysoure, Sucrier | 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 |
| 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 | IAC 2001, Silk, Sucrier | 1 |
| | moderate | modérée | mäßig | moderada | Nanicão, Prata | 2 |
| | strong | forte | stark | fuerte | Dwarf Cavendish, Prata Anã, | 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 | IAC 2001, Silk, Sucrier | 1 |
| | present | présente | vorhanden | presente | Mysore, Nanicão, Prata | 9 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo | Note/ Nota |
|-------------------------|--|---|-------------------------------------|--|--|---------------|
| 35. (* (+) | Fruit: curvature | Fruit : courbure | Frucht: Krümmung | Fruto: curvatura | | |
| 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 | Lacatan, Nanicão | 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 | IAC 2001, Silk, Sucrier, Yangambi Km 5 | 1 |
| | moderate | modérées | mäßig | moderadas | Gros Michel, Pacovan, Prata | 2 |
| | strong | fortes | stark | fuertes | Bluggoe, Gia Hui, Terra | 3 |
| 37. (* (+) | Fruit: length | Fruit : longueur | Frucht: Länge | Fruto: longitud | | |
| QN | (d) short | court | kurz | corta | Silk, Sucrier, Thap Maeo | 3 |
| | medium | moyen | mittel | media | IAC 2001, Grand Nine, Pacovan | 5 |
| | long | long | lang | larga | D'Angola, Gia Hui, Terra | 7 |
| 38. (* (+) | Fruit: width (excluding ridges) | Fruit : largeur (arêtes exclues) | Frucht: Breite (ohne Rippen) | Fruto: anchura (excluyendo las aristas) | | |
| QN | (d) narrow | étroit | schmal | estrecha | Silk, Sucrier | 3 |
| | medium | moyen | mittel | media | Grand Nain, Nanicão, Pisang Awak | 5 |
| | broad | large | breit | ancha | Bluggoe, D'Angola, Terra | 7 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|-------------------------|---------------------------------|--------------------------------------|---------------------------------|-------------------------------------|---|---------------|
| 39. (+) | Fruit: length of pedicel | Fruit : longueur du pédicelle | Frucht: Länge des Stiels | Fruto: longitud del pedicelo | | |
| QN | (d) short | court | kurz | corta | Sucrier, Yangambi Km 5 | 3 |
| | medium | moyen | mittel | media | Nanicao, Prata, 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 | Green Red, IRFA 2003, Pisang Mas, Sucrier | 1 |
| | truncate | tronqué | abgestumpft | truncada | Dwarf Cavendish, IAC 2001, Williams | 2 |
| | bottle-necked | rétréci | mit Hals | cuello de botella | Figo Cinza, Gros Michel | 3 |
| | pointed | pointu | ausgezogen | puntiaguda | Branca, Pacova, Pacovan, Terra | 4 |
| 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 | Branca, Silk, Sucrier | 3 |
| | medium | moyenne | mittel | medio | Dwarf Cavendish, IAC 2001, Williams | 5 |
| | thick | épaisse | dick | grueso | Bluggoe, Pacovan, Terra | 7 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|-------------------------|---|--|---|---|---|---------------|
| 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 | São Domingos, Sucrier | 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 | Mysore, Sao Tome | 7 |
| | pink | rose | rosa | rosa | Green Red | 8 |
| | red | rouge | rot | rojo | Caru Roxa | 9 |
| 43. (* (d) | Fruit: color of peel | Fruit : couleur de la peau | Frucht: Farbe der Schale | Fruto: color de la cáscara | | |
| PQ | light yellow | jaune clair | hellgelb | amarillo claro | Branca, Gros Michel, Pacovan | 1 |
| | medium yellow | jaune moyen | mittelgelb | amarillo medio | Bluggoe, Plantain, Prata | 2 |
| | greenish yellow | jaune verdâtre | grünlichgelb | amarillo verdoso | Dwarf Cavendish, IAC 2001, Williams | 3 |
| | green | vert | grün | verde | Gia Hui | 4 |
| | dark yellow | jaune foncé | dunkelgelb | amarillo oscuro | Pisang Mas, Silk, Sucrier | 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 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|------------|--|--|---|--|---|---------------|
| 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, IAC 2001, Petite Naine | 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 | Petite Naine, Williams, Yangambi km 5 | 9 |
| 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 | Branca, Gros Michel, Pisang awak, Silk | 1 |
| | whitish | blanchâtre | weißlich | blanquecino | IAC 2001, Pacovan, Prata, Williams | 2 |
| | cream | crème | cremefarben | crema | Caru Roxa, São Tomé | 3 |
| | yellow | jaune | gelb | amarillo | Pisang Mas, Sucrier | 4 |
| | orange | orange | orange | anaranjado | D'Angola, Terra | 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, IAC 2001, Silk | 1 |
| | medium | moyenne | mittel | media | Branca, Pacovan, Prata, | 3 |
| | firm | ferme | fest | firme | Bluggoe, Gia Hui, Terra | 5 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|--------------------------|--|--|--|---|---|---------------|
| 48. (*) (+) | Male inflorescence: persistence | Inflorescence mâle : persistance | Männlicher Blütenstand: Anhaften | Inflorescencia masculina: persistencia | | |
| QL | (d) absent | absente | fehlend | ausente | Gros Michel, Silk, Sucrier | 1 |
| | present | présente | vorhanden | presente | Grand Nain, Naine, Nanicão, Petite | 9 |
| 49. (+) | Male inflorescence: shape | Inflorescence mâle : forme | Männlicher Blütenstand: Form | Inflorescencia masculina: forma | | |
| QN | lanceolate | lancéolée | lanzettlich | lanceolada | Gros Michel, Pacovan, Pisang Awak | 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 |
| 50. (+) | Male inflorescence: opening of bracts | Inflorescence mâle : ouverture des bractées | Männlicher Blütenstand: Öffnung der Deckblätter | Inflorescencia masculina: apertura de las brácteas | | |
| QN | closed or slightly open | fermées ou légèrement ouvertes | geschlossen oder leicht geöffnet | cerrado o ligeramente abierto | Nanicão | 1 |
| | moderately open | modérément ouvertes | mäßig geöffnet | moderadamente abierto | Pacovan | 2 |
| | very open | très ouvertes | stark geöffnet | muy abierto | | 3 |
| 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 |

| | English | français | deutsch | Español | Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo | Note/ Nota |
|------------|-----------------------------|---------------------------------------|---------------------------------------|-------------------------------------|--|---------------|
| 52. | Bract: shape of apex | Bractées : forme du sommet | Deckblatt: Form der Spitze | Bráctea: forma del ápice | | |
| (+) | | | | | | |
| 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

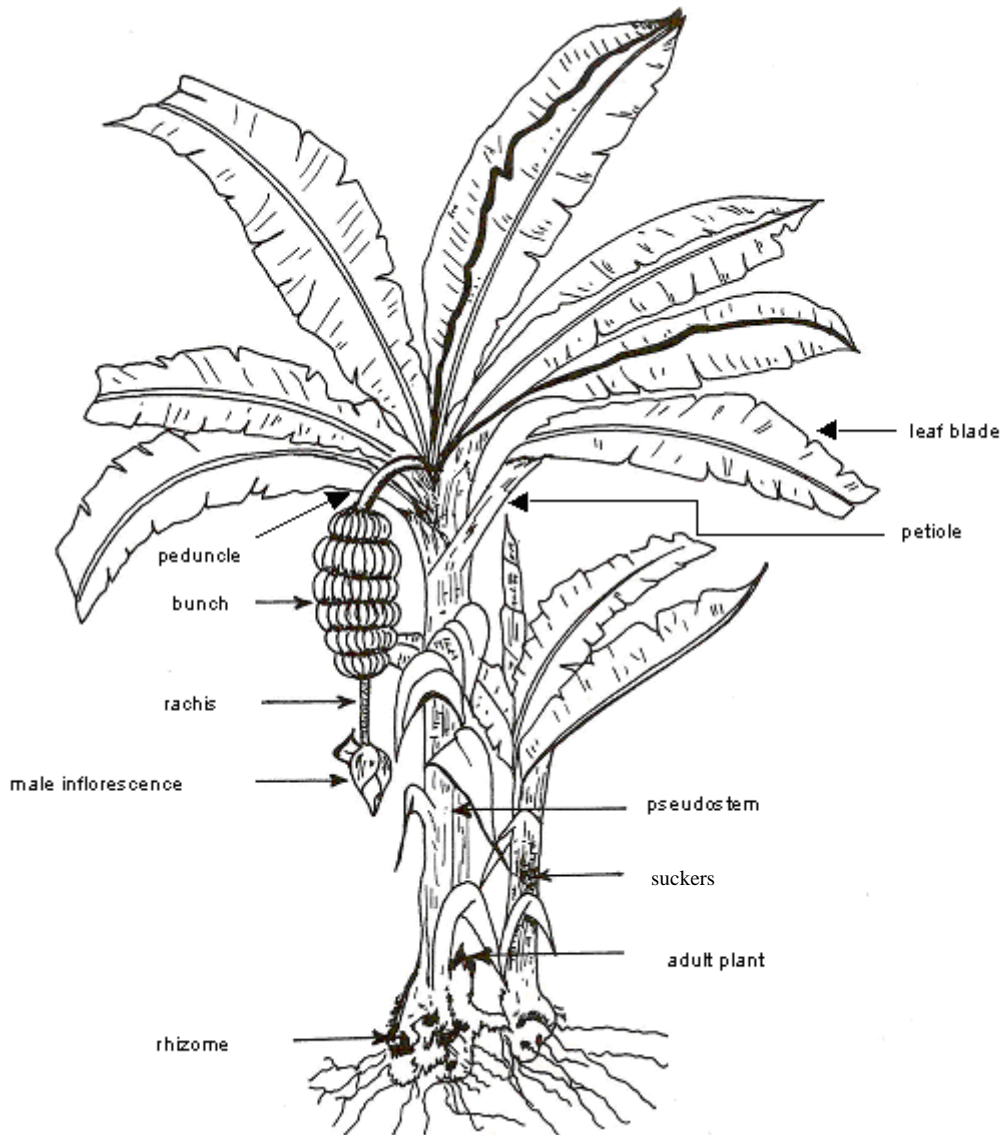
8.1 *Explanations covering several characteristics*

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.
- (b) Observations on the fruit bunch should be done at fruit maturity (harvest time).
- (c) Observations on inflorescence and flower should be made at the time of full flowering.
- (d) 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.

Ripening stages according to fruit color:





8.2 Explanations for individual characteristics

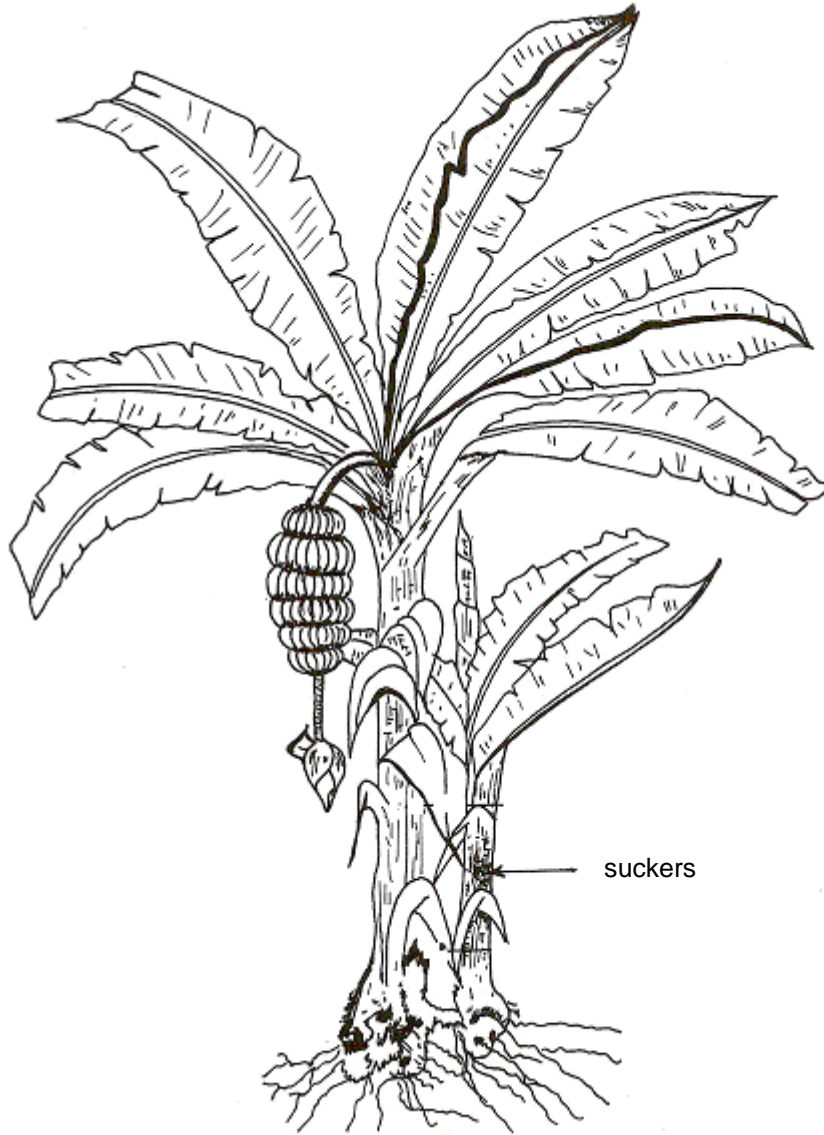
Ad. 1: Ploidy

Used for musa:

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 (Karlman 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).

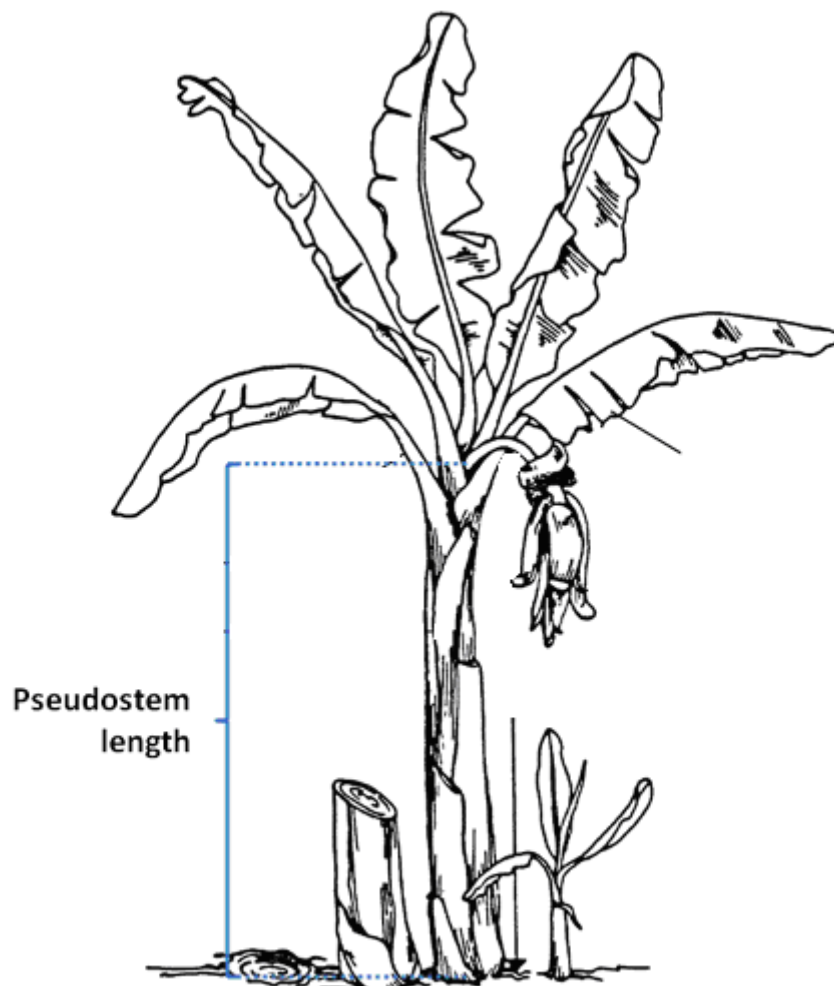
Ad. 2: Rhizome: number of suckers above ground

Assessed at harvest time with visible suckers.



Ad. 3: Pseudostem: length

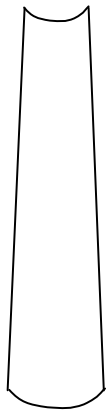
The length of the pseudostem should be observed from the ground level to the crown of the peduncle, at the beginning of flowering.



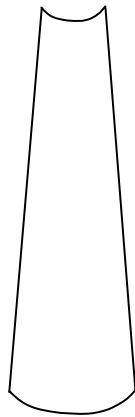
Ad. 4: Pseudostem: diameter

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.

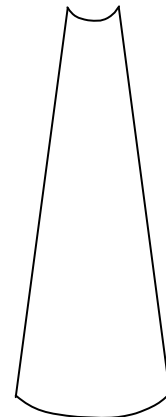
Ad. 6: Pseudostem: tapering



1
absent or weak



2
medium



3
strong

Ad. 8: Pseudostem: 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 the moment of inflorescence emerging.



1
upright

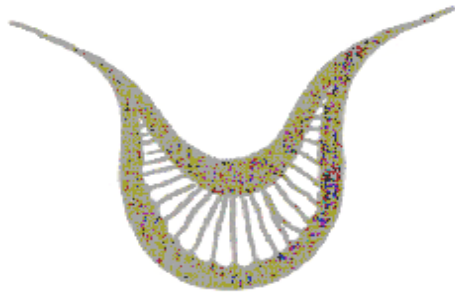


2
spreading



3
drooping

Ad. 12: Petiole: attitude of wings at base



1
curved outwards



2
straight



3
slightly curved inwards



4
moderately curved inward

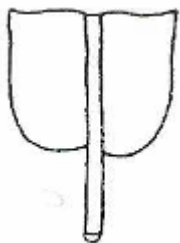


5
overlapping

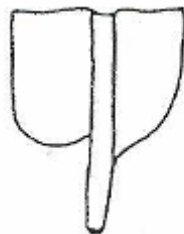
Ad. 13: Petiole: length

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

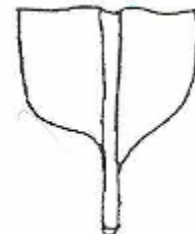
Ad. 15: Leaf blade: shape of base



1
both sides rounded



2
one side rounded and
one side acute



3
both sides acute

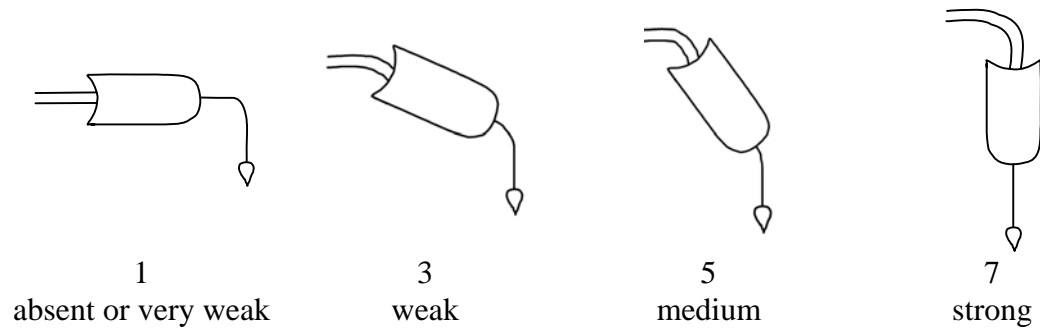
Ad. 21: Peduncle: length

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



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 midpoint between the attachment of the first hand and the attachment of 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

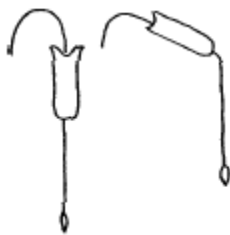


← hand →



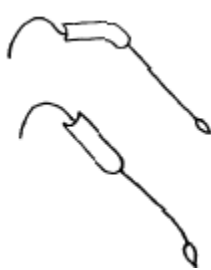
Ad. 31: Rachis: attitude of male part

Assessed just before harvest time.



1

vertical



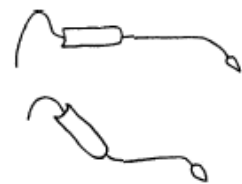
2

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

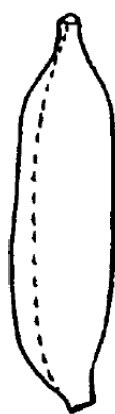


1
absent or weak

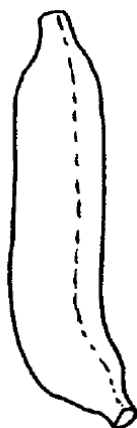


3
strong

Ad. 35: Fruit: curvature



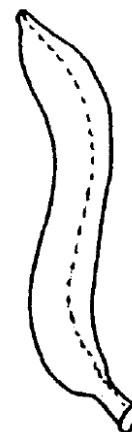
1
straight



2
slightly curved in
distal part



3
evenly curved



4
S-shaped

Ad. 36: Fruit: longitudinal ridges

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



1
absent or weak



2
moderate

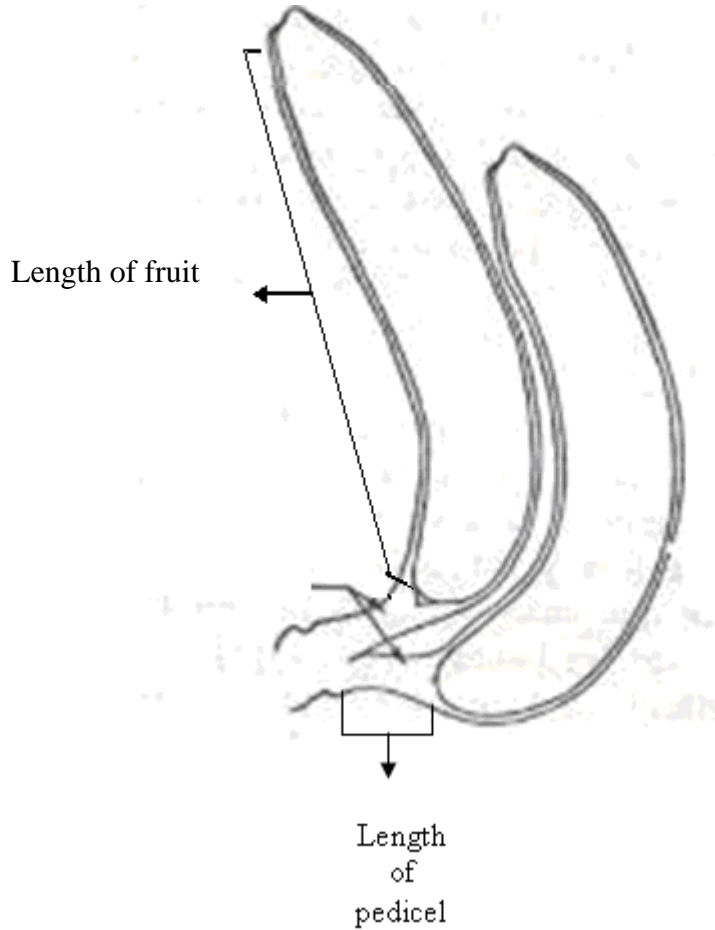


3
strong

Ad. 37: Fruit: length

Ad. 39: Fruit: length of pedicel

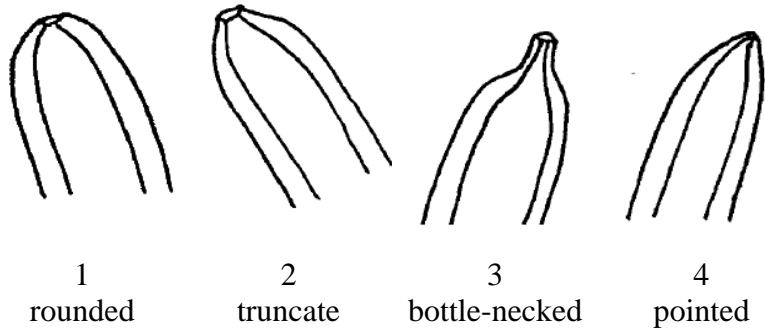
The length of the fruit should be determined on the outer (convex) side from where the fruit widens at the stalk end to the apical point.



Ad. 38: Fruit: width (excluding ridges)



Ad. 40: Fruit: shape of apex



Ad. 41: Fruit: thickness of peel

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

Should be assessed in cross section at harvest time. Only for varieties with “Male inflorescence: persistence: present”.



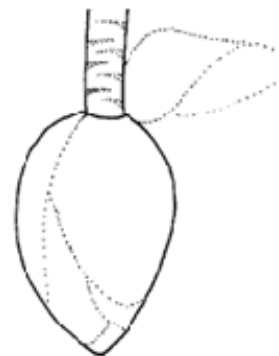
1
lanceolate



2
narrow ovate



3
medium ovate



4
broad ovate

Ad. 50: Male inflorescence: opening of bracts



1
closed or slightly open



2
moderately open

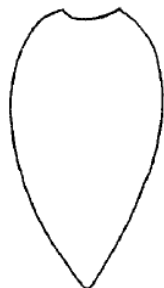


3
very open

Ad. 52: Bract: shape of apex



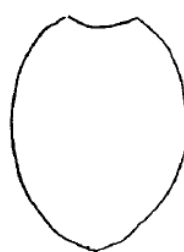
1
narrow acute



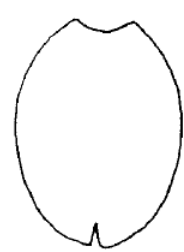
2
broad acute



3
right angle



4
obtuse



5
emarginate

9. Literature

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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 | <input type="text" value="Musa acuminata Colla"/> | [] |
| 1.1.2 Common name | <input type="text" value="Banana"/> | |
| 1.1.3 Botanical group (please complete e.g. AA, AAA) | <input type="text"/> | |
| ----- | | |
| 1.2.1 Botanical name | <input type="text" value="Musa × paradisiaca L. (M. acuminata Colla × M. balbisiana Colla)"/> | [] |
| 1.2.2 Botanical group (please complete e.g. AAB, ABB) | <input type="text"/> | |
| 2. Applicant | | |
| Name | <input type="text"/> | |
| Address | <input type="text"/> | |
| Telephone No. | <input type="text"/> | |
| Fax No. | <input type="text"/> | |
| E-mail address | <input type="text"/> | |
| Breeder (if different from applicant) | <input type="text"/> | |
| 3. Proposed denomination and breeder's reference | | |
| Proposed denomination (if available) | <input type="text"/> | |
| Breeder's reference | <input type="text"/> | |

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

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

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

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]