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date: 27:07:2010 12:25
saved-by: schanneliere
auto-generated-by: OBO-Edit 2.0
default-namespace: <Musa_trait>
remark: created by org.generationcp.obowriter.OBOWriter by
kmanansala@cgiar.org
"namespace-id-rule: *CO_325:\$sequence(7,0,9999999)\$

[Term]
id: CO_325:0000000
name: CGIAR Musa Trait Ontology

[Term]
id: CO_325:0000001
name: Musa trait
def: "All traits related to the morphology, agronomy and stress of Musa." [CO:SC]
comment: Taken from IPGRI-INIBAP/CIRAD. 1996. Descriptors for Banana(Musa spp.). International plant Genetic Resources Institute, Rome, Italy/International Network for the improvement of Banana and Plantain, Montpellier, France/Centre de cooperation internationale en recherche agronomique pour le developpement, Montpellier, France. ISBN 92-9043-307-8.
is_a: CO_325:0000000 ! CGIAR Musa Trait Ontology

[Term]
id: CO_325:0000002
name: stress trait
def: "Response by the plant in terms of resistance (tolerance) or sensitivity (susceptibility) to either the biotic or the abiotic types of stress." [http://www. "gramene.org/plant_ontology/"]
xref: TO:0000164
is_a: CO_325:0000001 ! Musa trait

[Term]
id: CO_325:0000003
name: agronomic trait
def: "All traits related to the agronomic characteristics of a Musa variety." [CO:SC]
is_a: CO_325:0000001 ! Musa trait

[Term]
id: CO_325:0000004
name: shooting to harvest
def: "Number of days from the emergence of the first bract to the harvest of the bunch (d)." [CO:SC, ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]
synonym: "flowering to harvest " RELATED []
is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000005
name: height of sucker at shooting
def: "Height of the tallest sucker at flowering of the mother plant (cm)." [ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]
synonym: "height of sucker at flowering" RELATED []
is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000006
name: number of fruits per bunch
def: "Number of fruits on the entire bunch." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6.", ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
synonym: "number of fingers per bunch" RELATED []
is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000007
name: salinity
def: "Response by the plant to salinity." [http://www.gramene.org/db/ontology", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]
is_a: CO_325:0000132 ! abiotic stress trait

[Term]

id: CO_325:0000008
name: appearance of leaf lower surface
def: "Shine of the leaf lower surface, due to the absence / presence of wax on the leaf." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)"]
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000009
name: anthracnose disease
def: "The trait is scored for the plant response to the agent Colletotrichum musae causing anthracnose disease." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000143 ! fungal diseases

[Term]
id: CO_325:0000010
name: Moko bacterial wilt
def: "The trait is scored for the plant response to the agent *Ralstonia solanacearum* (race 2) causing Moko bacterial wilt (vascular wilt disease)." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset.", ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (*Musa* spp.)."]
synonym: "Moko disease" EXACT []
is_a: CO_325:0000013 ! bacterial diseases

[Term]
id: CO_325:0000011
name: wax on immature fruit
def: "Records the presence of wax onto the immature fruits." [CO:SC]
is_a: CO_325:0000046 ! fruit trait

[Term]
id: CO_325:0000012
name: male bract degree of lifting
def: "Angle up to which the bract is lifting from the male bud." [CO:SC]
is_a: CO_325:0000075 ! inflorescence trait

[Term]
id: CO_325:0000013
name: bacterial diseases
def: "The trait is scored for the response to the diseases caused by various bacteria." [CO:SC]
xref: TO:0000315
is_a: CO_325:0000142 ! biotic stress trait
created_by: schanneliere
creation_date: 2010-04-20T04:05:38Z

[Term]
id: CO_325:0000014
name: *Mycosphaerella* leaf spots
is_a: CO_325:0000143 ! fungal diseases
created_by: schanneliere
creation_date: 2010-04-20T04:10:19Z

[Term]
id: CO_325:0000015
name: blotches at the petiole base
def: "Intensity of the pigmentation of the neck as a result of the presence of blotches at the petiole bases." [CO:SC]
is_a: CO_325:0000047 ! pseudostem trait

[Term]
id: CO_325:0000016
name: *Eumusae* leaf spot

def: "The trait is scored for the plant response to the agent Mycosphaerella eumusae causing Eumusae leaf spot." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000014 ! Mycosphaerella leaf spots
created_by: schanneliere
creation_date: 2010-04-20T04:43:54Z

[Term]

id: CO_325:0000017
name: Cladosporium leaf speckle
def: "The trait is scored for the plant response to the agent Cladosporium musae causing Cladosporium leaf speckle." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000143 ! fungal diseases
created_by: schanneliere
creation_date: 2010-04-20T04:47:13Z

[Term]

id: CO_325:0000018
name: leaf ratio
def: "Ratio of the length of the leaf to the width of the leaf."
[CO:SC]
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000019
name: appearance of leaf upper surface
def: "Shine of the leaf upper surface, due to the absence or presence of wax on the leaf." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000020
name: freckle disease
def: "The trait is scored for the plant response to the agent Guignardia musae causing freckle disease." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000143 ! fungal diseases
created_by: schanneliere
creation_date: 2010-04-20T04:57:27Z

[Term]

id: CO_325:0000021
name: cigar-end rot
def: "The trait is scored for the plant response to the agents Verticillium theobromae and Trachysphaera fructigena causing cigar-end rot." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000143 ! fungal diseases
created_by: schanneliere
creation_date: 2010-04-20T05:10:39Z

[Term]

id: CO_325:0000022
name: tip-end rot
def: "The trait is scored for the plant response to the agents *Botrytis cinerea*, *Dothiorella gregaria*, *Fusarium* sp, *Glomerella cingulata*, *Lasiodiplodia* sp., *Nattrassia mangiferae* (= *Hendersonula toruloidea*) and *Sclerotinia sclerotiorum* causing tip-end rot." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000143 ! fungal diseases
created_by: schanneliere
creation_date: 2010-04-20T05:13:55Z

[Term]

id: CO_325:0000023
name: diamond fruit spot
def: "The trait is scored for the plant response to the agents *Cercospora hayi* plus *Fusarium pallidoroseum* and/or *F. solani* causing diamond fruit spot." [ISBN:0-85-199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000143 ! fungal diseases
created_by: schanneliere
creation_date: 2010-04-21T09:48:43Z

[Term]

id: CO_325:0000024
name: blotches on leaves of water sucker
def: "Presence of blotches on the leaves of the water sucker." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (*Musa* spp.)."]
comment: Observed on young, non inhibited water suckers (if the lamina is sword shaped, it is not a water sucker).
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000025
name: crown rot
def: "The trait is scored for the plant response to the agents *Acremonium* sp., *Acremonium strictum*, *Cephalosporium* sp., *Ceratocystis paradoxa*, *Colletotrichum musae*, *Fusarium moniliforme*, *F. pallidoroseum*, *Fusarium* spp., *Lasiodiplodia theobromae*, *Nigrospora* spp. and *Verticillium theobromae* all causing crown rot." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000143 ! fungal diseases
created_by: schanneliere
creation_date: 2010-04-21T09:55:01Z

[Term]

id: CO_325:0000026
name: wax on leaves

def: "Presence of wax on the lower surface of the leaf." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
comment: Recorded on the lower surface.
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000027
name: Xanthomonas wilt
def: "The trait is scored for the plant response to the agent Xanthomonas campestris pv. musacearum causing wilt." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000013 ! bacterial diseases
created_by: schanneliere
creation_date: 2010-04-21T10:21:22Z

[Term]

id: CO_325:0000028
name: Bugtok disease
def: "The trait is scored for the plant response to the agent Ralstonia solanacearum (race 2) causing Bugtok fruit disease." [ISBN:0-855199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000013 ! bacterial diseases
created_by: schanneliere
creation_date: 2010-04-21T10:43:32Z

[Term]

id: CO_325:0000029
name: viral diseases
def: "The trait is scored for the response to the diseases caused by various viruses." [CO:SC]
xref: TO:0000148
is_a: CO_325:0000142 ! biotic stress trait
created_by: schanneliere
creation_date: 2010-04-21T10:58:19Z

[Term]

id: CO_325:0000030
name: bunchy top
def: "The trait is scored for the plant response to an agent of the Babuvirus genus causing banana bunchy top." [http://www.ictvonline.org/virusTaxonomy.asp?version=2009", ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000029 ! viral diseases
created_by: schanneliere
creation_date: 2010-04-21T11:12:47Z

[Term]

id: CO_325:0000031
name: bract mosaic

def: "The trait is scored for the plant response to an agent of the Potyvirus genus causing banana bract mosaic." [http://www.ictvonline.org/virusTaxonomy.asp?version=2009", ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000029 ! viral diseases
created_by: schanneliere
creation_date: 2010-04-21T11:22:57Z

[Term]

id: CO_325:0000032
name: free tepal shape
def: "Variation in the form of the free tepal of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000033
name: ovary pigmentation
def: "Records the presence of pigmentation on the ovary of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000034
name: male flower behaviour
def: "Records the time at which the flowers fall off, in relation to the bract fall." [CO:SC]
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000035
name: free tepal apex development
def: "Records the degree of development of the apex of the free tepal of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000036
name: banana mosaic
def: "The trait is scored for the plant response to an agent of the Cucumovirus genus causing banana mosaic." [http://www.ictvonline.org/virusTaxonomy.asp?version=2009", ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000029 ! viral diseases
created_by: schanneliere
creation_date: 2010-04-21T11:58:06Z

[Term]

id: CO_325:0000037

name: bunch traits
def: "Traits relating to the group formed by the fruits." [CO:SC]
relationship: part_of CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000038
name: free tepal color
def: "Color of the free tepal of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000039
name: banana streak
def: "The trait is scored for the plant response to an agent of the Badnavirus genus causing banana leaf streak." [http://www.
"http://www.ictvonline.org/virusTaxonomy.asp?version=2009", ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000029 ! viral diseases
created_by: schanneliere
creation_date: 2010-04-21T12:42:31Z

[Term]

id: CO_325:0000040
name: stalk borer
def: "The trait is scored for the plant response to the agent Odoiporus longicollis, a stalk borer." [CO:D.R.J. "Jones, D.R. Disease and pest constraints to banana production"]
is_a: CO_325:0000145 ! pests
created_by: schanneliere
creation_date: 2010-04-21T02:52:47Z

[Term]

id: CO_325:0000041
name: fruit girth
def: "Circumference of the fruit (cm)." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-06T04:14:47Z

[Term]

id: CO_325:0000042
name: fruit volume
def: "Total volume of the fruit (cm3)." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere

creation_date: 2010-07-06T04:33:41Z

[Term]

id: CO_325:0000043
name: pollen vitality
def: "Percentage of deformed and/or aborted grains in relation to normal grains (use of Alexander's pollen viability assessment method)." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000044
name: style exsertion
def: "Way the style is protruded, stretched out, or projecting beyond the corolla of a flower of the male flower." [CO:SC]
comment: In relation to the base of the lobes on the compound tepal.
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000045
name: fruit density
def: "Density of the fruit." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
synonym: "fruit specific gravity" EXACT []
is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-06T04:38:23Z

[Term]

id: CO_325:0000046
name: fruit trait
def: "Any trait related to fruit characteristics." [CO:SC]
xref: TO:0002629
relationship: part_of CO_325:0000037 ! bunch traits

[Term]

id: CO_325:0000047
name: pseudostem trait
def: "Trait associated with changes in the anatomy or structure of the pseudostem and its parts." [CO:SC]
is_a: CO_325:0000146 ! morphology related trait

[Term]

id: CO_325:0000048
name: pulp weight
def: "Weight of the pulp of a fruit that has been hand-peeled (g)." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]

is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-07T11:31:16Z

[Term]

id: CO_325:0000049
name: peel weight
def: "Weight of the peel of a fruit that has been hand-peeled (g)."
[ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-07T11:56:07Z

[Term]

id: CO_325:0000050
name: pulp to peel ratio
def: "Ratio between the weight of the pulp and the weight of the peel." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-07T11:58:40Z

[Term]

id: CO_325:0000051
name: style pigmentation
def: "Presence of pigmentation on the style of the male flower."
[ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000052
name: peel thickness
def: "Measure of the thickness of the peel at fruit mid-length (cm)."
[ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-07T02:12:25Z

[Term]

id: CO_325:0000053
name: style shape

def: "Presence and position of curve(s) in the style of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000054
name: ovary shape
def: "Records the curvature of the ovary of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000055
name: pulp thickness
def: "Measure of the width of the pulp, on a transverscul cut at mid-length of a hand-peeled fruit (cm)." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-07T02:14:26Z

[Term]
id: CO_325:0000056
name: peel color
def: "Color of the peel of the fruit at maturity." [ISSN:1729-5196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
synonym: "exocarp color" EXACT []
is_a: CO_325:0000003 ! agronomic trait
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-07T02:19:47Z

[Term]
id: CO_325:0000057
name: fruit position
def: "Arrangement and orientation of the fruits relatively to the stalk." [CO:SC]
comment: Recorded only on fruits arranged symmetrically around the stalk.
is_a: CO_325:0000046 ! fruit trait

[Term]
id: CO_325:0000058
name: pulp color

def: "Color of the pulp at maturity." [ISSN:1729-5196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000046 ! fruit trait
created_by: schanneliere
creation_date: 2010-07-07T02:26:44Z

[Term]

id: CO_325:0000059
name: total soluble solids
def: "Percentage of solids that are soluble, measured at a certain time." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
comment: It is measured using a refractometer and varies as the fruit matures.
is_a: CO_325:0000003 ! agronomic trait
created_by: schanneliere
creation_date: 2010-07-07T02:28:04Z

[Term]

id: CO_325:0000060
name: pulp pH
def: "Measure of the acidity or alkalinity of the pulp." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
created_by: schanneliere
creation_date: 2010-07-07T02:51:12Z

[Term]

id: CO_325:0000061
name: peel moisture
def: "Water content of the peel (%)." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
created_by: schanneliere
creation_date: 2010-07-07T02:56:01Z

[Term]

id: CO_325:0000062
name: flesh firmness
def: "An assay of the firmness of the pulp." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.).", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]
synonym: "pulp firmness" RELATED []
xref: TO:0000685 "Fruit tenderness"

is_a: CO_325:0000046 ! fruit trait

[Term]

id: CO_325:0000063
name: pulp moisture
def: "Water content of the pulp (%)." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
created_by: schanneliere
creation_date: 2010-07-07T02:58:31Z

[Term]

id: CO_325:0000064
name: number of fruits on third hand
def: "Number of fruits on the third hand of the bunch, counted from the top." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
synonym: "number of fingers on third hand" EXACT []
is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000065
name: peel dry matter content
def: "Content of the dry matter of the peel (%)." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
created_by: schanneliere
creation_date: 2010-07-07T02:59:18Z

[Term]

id: CO_325:0000066
name: pulp dry matter content
def: "Content of dry matter of the pulp (%)." [ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]
is_a: CO_325:0000003 ! agronomic trait
created_by: schanneliere
creation_date: 2010-07-07T03:00:26Z

[Term]

id: CO_325:0000069
name: pulp color before maturity
def: "Color of the mesocarp of the fruit before the fruit reaches maturity." [CO:SC]
comment: Recorded on youngest hand of the bunch.
synonym: "mesocarp color" RELATED []
xref: TO:0002619
is_a: CO_325:0000046 ! fruit trait

[Term]
id: CO_325:0000075
name: inflorescence trait
def: "Trait associated with changes in the structure or characteristics of the inflorescence and its parts." [http://www.gramene.org/plant_ontology/]
xref: TO:0000373
is_a: CO_325:0000146 ! morphology related trait

[Term]
id: CO_325:0000076
name: fruit shape
def: "Variation in the longitudinal curvature of the fruit." [CO:SC]
xref: TO:0002628
is_a: CO_325:0000046 ! fruit trait

[Term]
id: CO_325:0000077
name: flower trait
def: "Trait associated with changes in the structure or characteristics of the flower and its parts." [http://www.gramene.org/plant_ontology/]
xref: TO:0000499
relationship: part_of CO_325:0000075 ! inflorescence trait

[Term]
id: CO_325:0000079
name: cracks in fruit peel
def: "Longitudinal splits appearing naturally in the peel of the mature fruit." [ISBN:92-9043-3907-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carrier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]
synonym: "peel splitting" RELATED []
is_a: CO_325:0000046 ! fruit trait

[Term]
id: CO_325:0000080
name: leaf trait
def: "Trait associated with changes in the structure or characteristics of the leaf and its parts." [http://www.gramene.org/plant_ontology/]
xref: TO:0000419
is_a: CO_325:0000146 ! morphology related trait

[Term]
id: CO_325:0000082
name: position of sucker

def: "Relative position of the suckers to the parent plant." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000146 ! morphology related trait

[Term]

id: CO_325:0000083
name: pseudostem appearance
def: "Shine of the pseudostem, due to the absence or presence of wax on the pseudostem." [CO:SC]
comment: Recorded without removing the external sheaths.
is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000085
name: pseudostem color
def: "Color of the external sheaths of the pseudostem." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
comment: Recorded without removing the external sheaths. The color of oldest dry sheaths should not be considered.
is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000087
name: wax on leaf sheaths
def: "Presence of wax at the base of the petiole, where the leaf surrounds the pseudostem." [CO:SC]
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000089
name: pseudostem aspect
def: "Hardiness of the pseudostem." [CO:SC]
comment: Determined by the circumference at 100 cm.
is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000091
name: predominant underlying color of the pseudostem
def: "Main color of the undersheaths of the pseudostem." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
comment: Remove the outermost sheath from the pseudostem and look at the exposed surface of the underlying pseudostem.
is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000095
name: peduncle width
def: "Variation in the width of the peduncle, recorded at mid-length (cm)." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]

xref: TO:0000649
is_a: CO_325:0000037 ! bunch traits

[Term]
id: CO_325:0000096
name: male bud size
def: "Length and maximum diameter of male bud at harvest (cm)."
[ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana
(Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]
id: CO_325:0000097
name: bunch shape
def: "Shape taken by the fruits surrounding the rachis." [CO:SC,
ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana
(Musa spp.)."]
is_a: CO_325:0000037 ! bunch traits

[Term]
id: CO_325:0000098
name: peduncle color
def: "Variation in the color of the peduncle." [CO:SC]
is_a: CO_325:0000037 ! bunch traits

[Term]
id: CO_325:0000099
name: male bud shape
def: "General form of the male bud at bunch harvest." [ISBN:92-9043-
307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]
id: CO_325:0000101
name: peduncle length
def: "Variation in the length of the peduncle, measured from the leaf
crown to the first hand of fruit (cm)." [ISBN:92-9043-307-8 "IPGRI-
INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
xref: TO:0002691
is_a: CO_325:0000037 ! bunch traits

[Term]
id: CO_325:0000103
name: rachis position
def: "Orientation and shape of the rachis." [CO:SC]
comment: Free rachis (from the distal end of the bunch) position.
synonym: "free rachis position" EXACT []
is_a: CO_325:0000037 ! bunch traits

[Term]
id: CO_325:0000104
name: empty nodes on peduncle

def: "Nodes that are empty between the last (transitional) leaf and the first hand of fruit." [ISBN:902-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
comment: Record the number of empty nodes between the last (transitional) leaf and the first hand of fruit.
is_a: CO_325:0000037 ! bunch traits

[Term]

id: CO_325:0000106
name: rachis type
def: "Defines whether the rachis is persistent." [CO:SC]
synonym: "Rachis extent" RELATED []
is_a: CO_325:0000037 ! bunch traits

[Term]

id: CO_325:0000108
name: bunch appearance
def: "Relating to the bunch compaction: whether the hands are closely spaced along the rachis." [CO:SC, ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000037 ! bunch traits

[Term]

id: CO_325:0000109
name: bunch position
def: "Orientation of the bunch." [CO:SC, ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000037 ! bunch traits

[Term]

id: CO_325:0000110
name: plant general appearance
def: "Traits associated with changes in the general morphology of the plant." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000146 ! morphology related trait

[Term]

id: CO_325:0000111
name: leaf habit
def: "Way the leaves are standing, estimated by the angle formed between the leaves and the pseudostem axis." [CO:SC]
is_a: CO_325:0000110 ! plant general appearance

[Term]

id: CO_325:0000112
name: dwarfism
def: "Revealed by a low leaf ratio and the overlap of the leaves." [CO:SC]
is_a: CO_325:0000110 ! plant general appearance

[Term]

id: CO_325:0000114
name: bract behaviour
def: "Behaviour of the bract as it lifts from the male bud." [CO:SC, ISBN:902-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000116
name: stripes on bract
def: "Presence of discolored lines on the external face of the bract." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000117
name: bract base internal face color
def: "Records if the color towards the base on the inside of the bract is fading." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000118
name: male bract lifting
def: "Number of raised bracts present at a given time on the male bud." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000120
name: wax on the bract
def: "Presence of wax on the external surface of the bract." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
comment: Recorded on the external surface.
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000121
name: bract imbrication
def: "The way the bracts are overlapping at the apex of the male bud." [CO:SC, ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000124
name: male bract shape

def: "General shape of the bract, estimated by the ratio of the length at maximum width to the total length of the bract." [CO:SC]
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000126
name: grooves on the bract
def: "Presence of grooves on the external face of the bract."
[ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000132
name: abiotic stress trait
def: "Response by the plant in terms of susceptibility to abiotic stress." [http://www. "gramene.org/db/ontology"]
comment: These are coded on a susceptibility scale from 1 to 9.
xref: TO:0000168
is_a: CO_325:0000002 ! stress trait

[Term]

id: CO_325:0000133
name: susceptibility to wind
def: "Response by the plant to wind." [http://www. "gramene.org/db/ontology", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]
is_a: CO_325:0000132 ! abiotic stress trait

[Term]

id: CO_325:0000134
name: high temperature
def: "Response by the plant to high temperature." [http://www. "gramene.org/db/ontology", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]
is_a: CO_325:0000132 ! abiotic stress trait

[Term]

id: CO_325:0000135
name: drought
def: "Response by the plant to drought." [http://www. "gramene.org/db/ontology", ISSN:1729-6196 "Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6"]
xref: TO:0000188
is_a: CO_325:0000132 ! abiotic stress trait

[Term]
id: CO_325:0000136
name: mineral deficiency
def: "Response by the plant to mineral deficiency." [http://www.
"gramene.org/db/ontology", ISSN:1729-6196 "Carlier, J.; de Waele, D.
and Escalant, J.V. Global evaluation of Musa germplasm for resistance
to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes:
In-depth evaluation - Technical Guidelines 6."]
is_a: CO_325:0000132 ! abiotic stress trait

[Term]
id: CO_325:0000138
name: cold
def: "Response by the plant to cold." [http://www.
"gramene.org/db/ontology", ISBN:92-9043-307-8 "IPGRI-
INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000132 ! abiotic stress trait

[Term]
id: CO_325:0000139
name: soil acidity
def: "Response by the plant to soil acidity." [http://www.
"gramene.org/db/ontology", ISSN:1729-6196 "Carlier, J.; de Waele, D.
and Escalant, J.V. Global evaluation of Musa germplasm for resistance
to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes:
In-depth evaluation - Technical Guidelines 6."]
is_a: CO_325:0000132 ! abiotic stress trait

[Term]
id: CO_325:0000140
name: mineral toxicity
def: "Response by the plant to mineral toxicity." [http://www.
"gramene.org/db/ontology", ISSN:1729-6196 "Carlier, J.; de Waele, D.
and Escalant, J.V. Global evaluation of Musa germplasm for resistance
to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes:
In-depth evaluation - Technical Guidelines 6."]
is_a: CO_325:0000132 ! abiotic stress trait

[Term]
id: CO_325:0000141
name: flooding
def: "Response by the plant to flooding." [http://www.
"gramene.org/db/ontology", ISSN:1729-6196 "Carlier, J.; de Waele, D.
and Escalant, J.V. Global evaluation of Musa germplasm for resistance
to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes:
In-depth evaluation - Technical Guidelines 6."]
is_a: CO_325:0000132 ! abiotic stress trait

[Term]
id: CO_325:0000142
name: biotic stress trait

def: "Response by the plant to biotic stress." [http://www.
"gramene.org/db/ontology"]
comment: In each case, it is important to state the origin of the
infestation or infection, i.e. natural, field inoculation, laboratory.
is_a: CO_325:0000002 ! stress trait

[Term]

id: CO_325:0000143
name: fungal diseases
def: "The trait is scored for the response to the diseases caused by
various fungi." [CO:SC]
xref: TO:0000439
is_a: CO_325:0000142 ! biotic stress trait

[Term]

id: CO_325:0000145
name: pests
def: "The trait is scored for the response to the diseases caused by
various pests." [http://www. "gramene.org/db/ontology"]
xref: TO:0000054
is_a: CO_325:0000142 ! biotic stress trait

[Term]

id: CO_325:0000146
name: morphology related trait
def: "Trait associated with changes in the anatomy or structure of the
plant at organ, tissue or cellular level." [http://www.
"http://www.gramene.org/plant_ontology/"]
xref: TO:0000017
is_a: CO_325:0000001 ! Musa trait

[Term]

id: CO_325:0000147
name: number of living leaves at harvest
def: "Number of leaves that are still alive at the harvest of the
bunch." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for
Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and
Escalant, J.V. Global evaluation of Musa germplasm for resistance to
Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-
depth evaluation - Technical Guidelines 6."]
synonym: "number of functional leaves at harvest." RELATED []
is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000148
name: fruit diameter
def: "Diameter of the fruits at mid-length (mm)." [ISSN:1729-6196
"Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of
Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf
spot diseases, and nematodes: In-depth evaluation - Technical
Guidelines 6."]

comment: Recorded on the central external fruit of the middle hand (mm).

synonym: "fruit width" EXACT []

xref: TO:0002627

is_a: CO_325:0000003 ! agronomic trait

is_a: CO_325:0000046 ! fruit trait

[Term]

id: CO_325:0000149

name: height of following ratoon

def: "Height of the first following ratoon." [CO:SC, ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]

comment: Measured from base of pseudostem to last leaf axil (cm).

synonym: "height of following sucker at shooting" RELATED []

is_a: CO_325:0000146 ! morphology related trait

[Term]

id: CO_325:0000151

name: ratoon crop cycle

def: "Number of days between two successive harvests." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)"]

is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000153

name: planting to shooting

def: "From planting until the emergence of the first bract (d)." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]

synonym: "Planting to flowering" RELATED []

is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000154

name: fruit length

def: "Length of the internal arc of the fruit, without the pedicel (cm)." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]

comment: Recorded on the central external fruit of the middle hand (cm).

xref: TO:0002626

is_a: CO_325:0000003 ! agronomic trait

is_a: CO_325:0000046 ! fruit trait

[Term]

id: CO_325:0000155

name: fruit weight

def: "Average weight of a fruit (g)." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6.", ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]

comment: Average: divide the collective weight of the hands (cut from the peduncle) by the number of fruits (g).

xref: TO:0002746

is_a: CO_325:0000003 ! agronomic trait

is_a: CO_325:0000046 ! fruit trait

[Term]

id: CO_325:0000157

name: pseudostem height

def: "Height of the pseudostem, from base to point of peduncle emergence (cm)." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]

synonym: "height of pseudostem at shooting" EXACT []

is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000159

name: pseudostem girth

def: "Pseudostem circumference at harvest (cm)." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]

comment: Measured at 1 m from base of pseudostem (cm).

synonym: "girth of pseudostem at harvest" RELATED []

is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000160

name: bunch weight

def: "Weight of the total bunch (kg)." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical

Guidelines 6.", ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]

comment: Bunch stalk (peduncle) is cut above the first hand at the level of the last scar and the rachis is cut immediately below the last hand.

is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000161

name: plant crop cycle

def: "Time from planting the plant to harvest the fruits (d)."

[ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]

synonym: "planting to harvest " RELATED []

is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000162

name: number of hands

def: "Number of hands per bunch." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6.", ISSN:1729-6196 "Dadzie, B.K.; Orchard, J.E. 1997. Routine post-harvest screening of banana/plantain hybrids: Criteria and methods - Technical Guidelines 2."]

is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000163

name: number of living leaves at flowering

def: "Number of leaves that are still alive when the inflorescence emerges." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)", ISSN:1729-6196 "Carlier, J.; de Waele, D. and Escalant, J.V. Global evaluation of Musa germplasm for resistance to Fusarium wilt, Mycosphaerella leaf spot diseases, and nematodes: In-depth evaluation - Technical Guidelines 6."]

synonym: "Number of functional leaves at flowering" RELATED []

is_a: CO_325:0000003 ! agronomic trait

[Term]

id: CO_325:0000170

name: cytological character

def: "Character relating to the structure of a cell." [CO:SC]

is_a: CO_325:0000146 ! morphology related trait

[Term]

id: CO_325:0000171
name: somatic chromosome number
def: "Number of chromosomes that are not sex chromosomes."
[http://www. "biology-online.org/dictionary/Somatic_Chromosome",
ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana
(Musa spp.)."]
is_a: CO_325:0000170 ! cytological character

[Term]

id: CO_325:0000173
name: ploidy level
def: "The number of sets of chromosomes within a cell." [http://www.
"biology-online.org/dictionary/Ploidy", ISBN:92-9043-307-8 "IPGRI-
INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000170 ! cytological character

[Term]

id: CO_325:0000214
name: underlying pseudostem pigmentation
def: "Pigmentation of the undersheaths of the pseudostem." [ISBN:92-
9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa
spp.)."]
is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000219
name: sap color
def: "Records the color of the sap produced when cutting the external
sheath of the pseudostem." [ISBN:92-9043-307-8 "IPGRI-
INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000244
name: blotches color
def: "Color of the blotches at the petiole base (neck)." [ISBN:92-
9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa
spp.)."]
is_a: CO_325:0000047 ! pseudostem trait

[Term]

id: CO_325:0000250
name: petiole canal leaf III
def: "Width of the opening of the petiole canal and behaviour of the
margins." [CO:SC]
comment: Cut the petiole of the third leaf numbered from the last
produced half way between the pseudostem and the leaf blade and
examine the cross section.
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000259

name: petiole margin color
def: "Color of the petiole margins." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000264
name: petiole margin edge
def: "Presence of a colored line at the edge of the petiole margins." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000285
name: leaf upper lamina color
def: "Color of the lamina of leaf upper surface." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
comment: Wax removed. Chart A.
xref: TO:0000299
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000296
name: leaf lower lamina color
def: "Color of the lamina of the leaf lower surface." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
xref: TO:0000299
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000320
name: midrib dorsal surface color
def: "Color of the midrib dorsal (lower) surface." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
synonym: "midvein abaxial face color" RELATED []
xref: TO:0000720
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000328
name: midrib ventral surface color
def: "Color of the midrib on the upper surface of the leaf." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
synonym: "midvein adaxial face color " RELATED []
xref: TO:0000720
is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000336
name: cigar leaf dorsal surface color

def: "Color of the visible surface (future lower surface) of the cigar leaf before it is unfurled and before the plant flowers." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]

is_a: CO_325:0000080 ! leaf trait

[Term]

id: CO_325:0000418

name: bract base shape

def: "Shape of the base of the bract." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]

is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000422

name: bract apex shape

def: "Shape of the apex of the bract." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]

comment: Flatten the apex of the bract to observe its shape.

is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000432

name: bract external face color

def: "Color of the bract external (dorsal) face." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]

is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000443

name: bract internal face color

def: "Color of the bract internal (ventral) face." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]

is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000452

name: bract apex external face color

def: "Coloration at the apex of the external face of the bract." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]

comment: Records if the bract is discolored (tinted with yellow) at the apex.

is_a: CO_325:0000075 ! inflorescence trait

[Term]

id: CO_325:0000455

name: color stripes on bract

def: "Presence of discolored lines (not ridges) on the external face of the bract." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]

is_a: CO_325:0000075 ! inflorescence trait

[Term]
id: CO_325:0000458
name: bract scars prominence
def: "Prominence of the scars left on the rachis after the bracts and the flowers have fallen off." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000075 ! inflorescence trait

[Term]
id: CO_325:0000489
name: compound tepal basic color
def: "Main color of the compound tepal of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
comment: Without considering lobe color.
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000496
name: compound tepal pigmentation
def: "Records the presence of spots or pigmentation on the compound tepal of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000500
name: compound tepal lobes color
def: "Color of the lobes of the compound tepal of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000506
name: lobe development of compound tepal
def: "Records the degree of development of the lobe of the compound tepal of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000520
name: free tepal appearance
def: "Records if there is the presence of foldings under the apex of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000528

name: free tepal apex shape
def: "Variation in the shape of the apex of the free tepal of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000532
name: anther exsertion
def: "Relative position of the anthers to the base of the compound tepal lobes of the male flower." [CO:SC]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000536
name: filament color
def: "Color of the filament of the male flower stamens." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000540
name: anther color
def: "Variation in color of the anther of the male flower." [CO:SC]
xref: TO:0000187
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000549
name: pollen sac color
def: "Color of the pollen sac at the line where the anther split to release pollen." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000557
name: style basic color
def: "Color of the style in a blossoming male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
xref: TO:0000676
is_a: CO_325:0000077 ! flower trait

[Term]

id: CO_325:0000575
name: stigma color
def: "Color of the stigma in a blossoming male flower." [http://www.gramene.org/plant_ontology/]
xref: TO:0000185
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000585
name: ovary basic color
def: "Dominant color of the ovary of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000594
name: male flower color
def: "Dominant color of the male flower." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000601
name: ovules arrangement
def: "Records the number of ovules in one carpel (female flower)."
[CO:SC]
is_a: CO_325:0000077 ! flower trait

[Term]
id: CO_325:0000925
name: *Cylindrocladium* species
def: "The trait is scored for the plant response to the agent *Cylindrocladium* sp." [ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
is_a: CO_325:0000143 ! fungal diseases

[Term]
id: CO_325:0000927
name: yellow Sigatoka leaf spot
def: "The trait is scored for the plant response to the agent *Mycosphaerella musicola* causing yellow Sigatoka leaf spot." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset.", ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
synonym: "yellow Sigatoka" EXACT []
is_a: CO_325:0000014 ! *Mycosphaerella* leaf spots
is_a: CO_325:0000143 ! fungal diseases

[Term]
id: CO_325:0000929
name: black leaf streak
def: "The trait is scored for the plant response to the agent *Mycosphaerella fijiensis* causing Black leaf streak, also called Black Sigatoka." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset.", ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)."]
synonym: "black Sigatoka" EXACT []
is_a: CO_325:0000014 ! *Mycosphaerella* leaf spots
is_a: CO_325:0000143 ! fungal diseases

[Term]
id: CO_325:0000931
name: fusarium wilt
def: "The trait is scored for the plant response to a the pathogen *Fusarium oxysporum* f.sp. *cubense* causing fusarium wilt." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset.", ISBN:92-9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (*Musa* spp.)."]
synonym: "Panama disease" RELATED []
is_a: CO_325:0000143 ! fungal diseases

[Term]
id: CO_325:0000933
name: blood bacterial wilt
def: "The trait is scored for the plant response to a bacterial pathogen (affinity with *Ralstonia*) causing blood bacterial wilt." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
synonym: "blood disease" EXACT []
is_a: CO_325:0000013 ! bacterial diseases

[Term]
id: CO_325:0000936
name: root-knot nematodes
def: "The trait is scored for the plant response to the agents *Meloidogyne incognita* and *Meloidogyne javanica*." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000145 ! pests

[Term]
id: CO_325:0000938
name: spiral nematode
def: "The trait is scored for the plant response to the agent *Helicotylenchus multicinctus*." [ISBN:90-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000145 ! pests

[Term]
id: CO_325:0000940
name: burrowing nematode
def: "The trait is scored for the plant response to the agent *Radopholus similis*." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana, Abaca and Enset."]
is_a: CO_325:0000145 ! pests

[Term]
id: CO_325:0000942
name: root lesion nematodes
def: "The trait is scored for the plant response to the agents *Pratylenchus coffeae* and *Pratylenchus goodeyi*, nematodes causing root lesions." [ISBN:0-85199-355-9 "Jones, D.R. 2000. Diseases of Banana,

Abaca and Enset.", ISBN:92-9043-307-8 "IPGRI-
INIBAP/CIRAD.1996.Descriptors for Banana (Musa spp.)"]
is_a: CO_325:0000145 ! pests

[Term]

id: CO_325:0000946

name: weevil borer

def: "The trait is scored for the plant response to the agent
Cosmopolites sordidus, a rhizome weevil borer." [ISBN:0-85199-355-9
"Jones, D.R. 2000. Diseases of Banana, Abaca and Enset.", ISBN:92-
9043-307-8 "IPGRI-INIBAP/CIRAD.1996.Descriptors for Banana (Musa
spp.)"]

is_a: CO_325:0000145 ! pests

[Typedef]

id: part_of

name: part_of

is_transitive: true