INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY
FOR
AGRICULTURAL CROPS

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WORKING PAPER ON DRAFT TEST GUIDELINES FOR COFFEE

Document prepared by experts from Brazil

I.   SubjectoftheseGuidelines

    These Test Guidelines apply to all varieties of   *Coffea arabica* , *Coffea canephora* and theirinterspecifichybrids.

II.   MaterialRe quired

1.   The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from a State other than that where the testing takes place must   make sure that all customs formalities are complied with. The following quantity of plant material is recommendedasaminimum:

    (a)   *Coffeaarabica* :10   seedlingplants;

    (b)   *Coffeacanephora* :   (i)   5 plantsforvarietieswithvegetativepropagation;
                        (ii)   10 plantsforseedpropagatedvarieties;

    (c)   Interspecifichybrids: (i)   5 plantsforvarietieswithvegetativepropagation;
                        (ii)   10 plantsforseedpropagatedvarieties.

2.   Theplantmaterialsuppliedshouldbevirusfreeandvisiblyhealthy,notlacki   nginvigor oraffectedbyanyimportantpestordisease.

3.   The plant material must not have undergone any treatment unless the competent authoritiesalloworrequestsuchtreatment.Ifithasbeentreated,fulldetailsofthetreatment mustbegiven.

III.   ConductofTests

1.   Toassessdistinctnesstheplantsshouldbeobservedforatleastfortwogrowthcycles.

2.   Thetestsshouldnormallybeconductedatoneplace.Ifanyimportantcharacteristicof thevarietycannotbeseenatthatplace,theva   rietymaybetestedatanadditionalplace.

3.   The tests should be carried out under conditions ensuring normal growth. The size of plots should be so that plants or parts of plants may be removed for evaluation and measurementwithoutprejudicetotheob   servationswhichmustbemadeuptotheendofthe growth cycle. Each plot should include 5 or 10 plants according to the variety or their reproductive system. A minimum of 4 plants should be evaluated. Separate plots for observation and measuring can only   be used if they have been subject to similar environmentalconditions.

4.   Additionaltestsforspecialpurposesmaybeestablished.

IV. MethodsandObservations

1. Unlessotherwisestated,allobservationsshouldbemadeon5plantsorpartstakenfro   m
eachof5plantsinthecaseofvarietiesresultingfromcrossing,andon10plantsorpartstaken
fromeachof10plantsinthecaseofmutants.

2. Forassessmentofuniformityapopulationstandardof1%withconfidenceintervalofat
least95%shou ldbeappliedforvarietiesresultingfromcrossing,andapopulationstandardof
2%withthesameconfidenceintervalformutants.Inthecaseofasamplesizeof5plantsno
off-typesshouldbeallowedasfor10plantsthemaximumnumberofoff   -typesall owedwould
be1.

3. Unless otherwise stated, all observations on the tree and on the one   -year-old shoot
should be made during winter on trees that have fruited at least once. The length of the
internodesshouldbeobservedinthemiddleoftheshoot.

4. Unless otherwise stated, all observations on the flower should be made on fully
developedflowersatthebeginningofantherdehiscence.

5. Unlessotherwisestated,allobservationsontheleafshouldbemadeinsummeronfully
developedleavesfromthe   middlethirdofawell   -developedcurrentseasonshoot.

6. Allobservationsonfruitsshouldbemadeatthetimeofharvestwithripenfruitsunless
otherwisestated.

V. GroupingofVarieties

1. Thecollectionofvarietiestobegrownshouldbedivided   intogroupstofacilitatethe
assessmentofdistinctness.Characteristicswhicharesuitableforgroupingpurposesarethose
whichareknownfromexperiencenottovary,ortovaryonlyslightly,withinavariety.Their
variousstatesofexpressionshoul   dbefairlyevenlydistributedthroughoutthecollection.

VI. CharacteristicsandSymbols

1. Toassessdistinctness,uniformityandstabilitythecharacteristicsandtheirstatesshould
beusedasgivenintheTableofCharacteristics.

2. (+)See"Exp   lanationsandIllustrations".

VII. TableofCharacteristics/Tableaudescaractères/Merkmalstabelle/Tabladecaracteres

English	français	deutsch	español	ExampleVarieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota
1. Plant:shape					
(+)					
cylindrical				Catuaí,Mundo Novo	1
conical				Vila Lobos	2
cylindrical-conical				Acaiá	3
invertedconical					4
2. Plant:height					
(+)					
veryshort				Vila Lobos	1
short				IAPAR 59	3
medium				Catuaí,Rubi,Topázio	5
tall				Acaiá	7
verytall				Mundo Novo	9
3. Plant:canopy diameter					
(+)					
verysmall				Vila Lobos	1
small				IAPAR 59	3
medium				Catuaí,Rubi,Topázio	5
large				Acaiá	7
verylarge				Mundo Novo	9
4. Stem(mainand lateral):internodes length					
short				IAPAR 59	3
medium				Catuaí,Rubi,Topázio	5
long				Mundo Novo	7

	English	français	deutsch	español	ExampleVarieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota
5.	**Plagiotropic branch:position relativeto orthotropicbranch**					
	erect					1
	semi-erect					2
	horizontal				Catuaí,Mundo Novo	3
	semi-drooping					4
6.	**Leaf:le ngth**					
	short				Bourbon	3
	medium				Mundo Novo	5
	long				Obatã	7
7.	**Leaf:width**					
	narrow				Bourbon	3
	medium				Mundo Novo	5
	wide				Obatã	7
8. (+)	**Leaf:shape**					
	elliptic					1
	ovate					2
	lanceolate					3
9.	**Leaf:youngleaf color**					
	green				Catuaí	1
	bronze				Rubi,Topázio	2
	greenandbronze					3
	purple					4

English	français	deutsch	español	ExampleVarieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota
10. Leaf:matureleaf color					
light-green					1
dark-green				Obatã	2
purple					3
11. Leaf:bordercurling					
absent				Laurina	1
present				Mundo Novo	9
12. Leaf:intensityof borderundulation					
slight					3
medium				Mundo Novo,Catuaí	5
strong					7
13. Leaf:depthof secondaryvein					
shallow					3
medium					5
deep					7
14. Leaf:domatia					
absent					1
partiallydeveloped					2
developed					3
15. Leaf:domatia pilosity					
absent					1
present					9

	English	français	deutsch	español	ExampleVarieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota
16.	**Inflorescence: numberperaxil**					
	low				Típica	3
	medium				Bourbon	5
	high				Catuaí,Rubi,Topázio	7
17.	**Flower:numberper inflorescence**					
	low				Típica	3
	medium				Bourbon	5
	high				Catuaí,Rubi,Topázio	7
18.	**Flower:polen**					
	fertile					1
	sterile					2
19.	**Flower:crossing compatibility**					
	self-compatible					1
	partiallycompatible					2
	self-incompatible					3
20.	**Fruit:size**					
	verysmall				Mokka	1
	small				Borbon Amarelo	3
	medium				Mundo Novo	5
	large				Acaiá	7
	verylarge				Maragogipe	9
21.	**Fruit:shape**					
(+)						
	roundish				Mokka	1
	elliptic					2
	oblong				MundoNovo	3

	English	français	deutsch	español	ExampleVarieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota
22.	**Fruit:color(ripe)**					
	yellow				Bourbon,Topázio	1
	orange-red					2
	lightred				Mundo Novo,Rubi	3
	darkred					4
23.	**Fruit:sepal**					
	absent				Bourbon Amarelo	1
	present					2
24.	**Fruit:levelof branchjunction**					
	low					3
	medium				Mundo Novo	5
	high					7
25.	**Seed:length**					
(+)						
	short				Catuaí	3
	medium				Mundo Novo	5
	long				Acaiá	7
26.	**Seed:width**					
(+)						
	narrow				Acaiá	3
	medium				Mundo Novo	5
	wide				Catuaí	7
27.	**Seed:thickness**					
(+)						
	thin				Mokka,Ibairi	3
	medium				Mundo Novo	5
	thick				Maragogipe	7

	English	français	deutsch	español	ExampleVarieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota
28.	**Seed:endosperm colour**					
	yellow					1
	green					2
29.	**Seed:shadeofcover cuticle**					
	light					1
	dark					2
30.	**Seed:levelofcuticle adherence**					
	weak					3
	medium					5
	strong					7
31.	**Complete maturationcycle (morethan50%of maturefruits)**					
	veryearly					1
	early				Bourbon	3
	medium				Mundo Novo,Rubí	5
	late				Catuaí	7
	verylate					9
32.	**Timeperioduntil firstproduction afterplanting**					
	early				Catuaí,Rubí,Topázio	3
	medium				Bourbon	5
	late				Mundo Novo	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33. Branch: number of plagiotropic ramification					
low				Acaiá	3
medium				Mundo Novo	5
high				Catuaí, Rubí, Topázio	7
34. Orthotropic branch: number					
low					3
medium					5
high					7
35. Orthotropic branch: flexibility					
low					3
medium				Mundo Novo	5
high					7
36. Fruit: juiciness of the mesocarp (mature fruit) (only for Coffea canephora)					
dry					3
medium					5
juicy					7
37. Fruit: caffei ne content					
low				Laurina	3
medium				Mundo Novo, Catuaí	5
high					7

English	français	deutsch	español	ExampleVarieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota
38. **Seed:weightof100 seeds(11%** **(+) moisture)**					
low				Ibairi	3
medium				Catuaí	5
high				Acaiá	7

				ExampleVarieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota

VIII. ExplanationsontheTableofCharacteristics

Ad. 1,2,3:Plant:shape,heightandcanopydiameter

Mustbeevaluatedafterthesecondyieldfromthethirdharveston.

Ad.3:Plant:canopydiameter

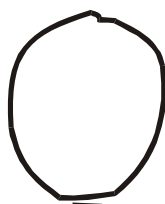Themeasurementmustcorrespondtothemaximumdiameter.

Ad.8:Leaf:shape

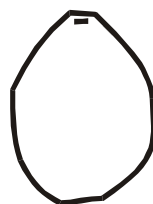| 1	2	3
elliptic	ovate	lanceolate

Ad.21:Fruit:shape

1	2	3
roundish	elliptic	oblong

Ad.25,26and27:

Mustbemeasuredfromasampleof20seeds.

Ad.26:

Themeasurementmustbetakenonflat   -typeseeds.

Ad.38:

Onlyflat -typeseedsshouldbeusedforthisevaluation.

IX.   <u>Literature</u>

X. TechnicalQuest ionnaire

<table>
<tr><td colspan="2"></td><td>ReferenceNumber
(nottobefilledinbytheapplicant)</td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="3" align="center">TECHNICALQUESTIONNAIRE
tobecompletedinconnectionwithanapplicationforplantbreeders'rights</td></tr>
<tr><td>1.</td><td>Species</td><td>*Coffeaaarabica* , *Coffeacanephora* andtheirinterspecifichyb   rids

COFFEE</td></tr>
<tr><td>2.</td><td colspan="2">Applicant(Nameandaddress)</td></tr>
<tr><td>3.</td><td colspan="2">Proposeddenominationorbreeder'sreference</td></tr>
</table>

4.	Informationonorigin,maintenanceandreproductionofthevariety

4.1	Varietytype

4.2	Geneticoriginandbreedingme	thod

4.3	Otherinformation

5.	Characteristics of the variety to be indicated (the number in brackets refers to the correspondingcharacteristicinTestGuidelines;pleasemarkthestateofexpressionwhich bestcorresponds).

Characteristics	Example Varieties	Note

6.	Similarvarietiesanddifferencesfromthesevarieties

Denomination of similar variety	Characteristic in which the similar variety is different [o]	State of expression of similar variety	State of expression of candidate variety

_____

[o]	Inthecaseofidenticalstatesofexpressionsofbothvarieties,pleaseindicatethesize ofthedifference.

7.   Additionalinformationwhichmayhelptodistinguishthevariety

7.1   Resistancetopestsand   diseases

7.2   Specialconditionsfortheexaminationofthevariety

7.3   Otherinformation

8.   Authorizationforrelease

(a)   Does the variety require prior authorization for release under legislation concerningtheprotectionoftheenvironm   ent,humanandanimalhealth?

Yes   []   No   []

(b)   Hassuchauthorizationbeenobtained?

Yes   []   No   []

Iftheanswertothatquestionisyes,pleaseattachacopyofsuchanauthorization.

ANNEX

SIMILARVARIETIESA NDTHEIRDIFFERENCESTOTHESUBMITTEDVARIETY

1.   More than one variety may be used for comparison purposes since observed the following principles: (i) denomination of the variety must be clearly evident; (ii) characteristics of distinctness should be ident   ified and (iii) differences on chosen characteristicmustbeclearlyevident.

2.   Characteristics for distinctness should be preferably taken from the Table of Characteristics.

3.   Characteristics other than those mentioned at the Table of Characteristics sh   ould be identifiedwhethertheyarephysiological,phenological,biochemicalorother.Differencesto thesubmittedvarietyshouldbeclearlyexpressed.

SIMILARVARIETIESANDTHEIRDIFFERENCESTOTHESUBMITTEDVARIETY

Denominationof similarvariet ies	Characteristicinwhich thesimilarvarietyis different	Stateofexpressionon similarvariety	Stateofexpressionon submittedvariety

Notes:

(i)   The similar varieties indicated above should preferably be protected otherwise they shouldatleast   beincludedinthePlantVarietiesRegisterattheorigincountry.

(ii)   Iftheexpressionofacharacteristicissimilaramongcultivarsbutthereisanevident degreeofdistinctnessamongthemthereshouldbemadeanindicationonthemagnitudeof suchdiffe rence.

[EndofAnnexandofdocument]