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TWA/29/14
ORIGINAL: English
DATE: June 6, 2000

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS

Twenty-Ninth Session
Uppsala, Sweden, June 27 to 30, 2000

WORKING PAPER ON DRAFT TEST GUIDELINES FOR TOBACCO (*Nicotiana Tabacum* L.)

Document prepared by experts from Greece

I. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Nicotiana tabacum* L.

II. Material Required

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 in which the testing takes place must make sure that all customs formalities are complied with. The minimum quantity of seed to be supplied by the applicant in one or several samples should be:

2 gr

The seed should at least meet the minimum requirements for germination capacity, moisture content and purity for tobacco production in the country in which the application is made.

2. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

1. The minimum duration of tests should normally be two independent growing periods.

2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The field tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. As a minimum each test should include a total of at least 40 plants in two or more replicates.

Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests may be established, especially with respect to the type of tobacco.

IV. Methods and Observations

1. All observations for the assessment of distinctness and stability should be made on the plot as a whole. For the assessment of measured characteristics, observations should be made on total of 20 plants or parts taken from each of 20 plants.

2. For the assessment of uniformity a population standard of 1% with an acceptance probability of 95% should be applied. In the case of a sample size of 40 plants, the maximum number of off types allowed would be 2.

3. All observations on the plant should be made after the beginning of flowering when the leaves in the middle third of the main stem are fully expanded.

4. All observations on leaves, should be made after the beginning of flowering on the largest fully developed leave in the middle third of the main stem, excluding the inflorescence.

5. All observations on flowers should be made on the main inflorescence on fully open flowers at flowering time.

6. All observations on the inflorescence should be made on the main inflorescence at full flowering time.

7. Suckers are excluded from observations except they are concerned themselves.

V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.

2. It is recommended that the competent authorities use the following characteristics for grouping varieties:

(a) Plant: height of main stem (including inflorescence) (characteristic 2)
(b) Leaf: number of leaves (characteristic 3)
(c) Leaf: ratio length / width of blade (characteristic 11)
(d) Leaf: shape of blade (characteristic 12)
(e) Leaf: color of midrib on lower side (characteristic 15)
(f) Time of flowering (characteristic 22)
(g) Flower: color of corolla (characteristic 28)
(h) Flower: development of stamens (characteristic 29)

VI. Characteristics and Symbols

1. To assess distinctness ,uniformity and stability ,the characteristics and their states as given in the Table of Characteristics should be used.

2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

3. Legend:

(*) Characteristics that should be used on all varieties in every growing period over which examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

(+) See Explanations on the Table of Characteristics in chapter VIII.

VII. Table of Characteristics

	English	Example varieties	Note
1 (+)	Plant: shape		
	conical	Katerini 53	1
	cylindrical	Tsembeli Agriniou 21	2
	elliptical		3
	inverted conical		4
2 (*)	Plant: height of main stem. (including inflorescence)		
	very short	Tsembeli Agriniou 21	1
	short	Xathi 81	3
	medium	Zihna Pageou	5
	tall	Virginia Hellas 9	7
	very tall	Burley 21E	9
3 (*)	Plant: number of leaves		
	very low	Mavros Ipatis	1
	low	Mirodato Agriniou 13B, Niki	3
	medium	Doxato	5
	high	Zihna pageou	7
	very high	Sampsous 79	9
4	Plant: tendency to produce suckers		
	absent or very weak	Xanthi 2A	1
	weak		3
	medium		5
	strong		7
	very strong		9
5 (+)	Leaf: type		
	sessile	Xanthi 2A, Virginia Hellas 9	1
	petiolate	Mirodato Agriniou 13B, Katerini 53	2
6 (*) (+)	Leaf: angle of insertion		
	very acute	Xanthi 2A	3
	moderately acute	Mirodato Agriniou 13B	5
	right angle		7

	English	Example varieties	Note
7 (+)	Leaf: shape in cross section		
	concave		1
	straight		2
	convex		3
8 (+)	Leaf: shape in profile		
	Straight		1
	Slightly recurved		3
	Moderately recurved		5
	Strongly recurved		7
9 (*)	Leaf: length of blade (without auricles)		
	very short	Xanthi 2A	1
	short	Kontoula Zagliveriou	3
	medium	Argiroudis 14/A	5
	long		7
	very long	Virginia Hellas 9, Burley 21 E	9
10 (*)	Leaf: width of blade		
	very narrow		1
	narrow		3
	medium		5
	wide		7
	very wide		9
11 (*)	Leaf blade: ratio length/width (without auricles)		
	Very low		1
	low	Katerini 53	3
	medium	Sampsous 79	5
	high	Tsempeli Agriniou 21	7
	Very high		9
12 (*) (+)	Leaf: shape of blade		
	lanceolate	Tsempeli Agriniou 21	1
	narrow elliptic	Virginia Hellas 9	2
	broad elliptic	Xanthi 101	3
	ovate	Argiroudis 14A	4
	obovate		5
	cordate	Katerini 53	6
	rounded		7

	English	Example varieties	Note
13 (*)	Leaf : color of blade		
	yellow green	Ptolemaida 63	1
	green		2
14 (*)	Leaf: intensity of green color		
	light	Kontoula Zagliveriou	3
	medium	Xanthi 2A	5
	dark		7
15 (*)	Leaf: color of midrib on lower side.		
	whitish		1
	whitish green		2
	green		3
16 (+)	Leaf: shape of tip		
	obtuse(rounded)		1
	slightly pointed	Xanthi 2A	3
	medium pointed	Ptolemaida 63, Niki	5
	strongly pointed	Tsembeli Agriniou 21	7
	very strongly pointed		9
17	Leaf: blistering of blade		
	absent or very weak	Tsempeli Agriniou 21	1
	weak	Peonia 82	3
	medium		5
	strong	Xanthi 2A, klio	7
	very strong		9
18	Leaf: undulations of margins		
	absent or very weak	Tsempereli Agriniou 21	1
	weak		3
	medium		5
	strong	Xanthi 2A	7
19 (+)	Leaf: auricles (sessile types only)		
	absent or very weak		1
	weak		3
	medium		5
	strong		7
	very strong		9

	English	Example varieties	Note
20	Leaf: width of blade at basis(sessile types only)		
(+)			
	very narrow		1
	narrow	Argiroudis 14 A	3
	medium	Xanthi 81	5
	broad	Karatzova	7
	very broad		9
21	Leaf: thickness of veins (excluding midrib.)		
	Thin		3
	Medium		5
	Thick		7
22	Time of flowering(50% of plants with at least one corolla open)		
(*)			
	very early	Mavros Ipatis	1
	Early	Xanthi 2A	3
	Medium	Doxato	5
	Late		7
	very late	Kontoula Zagliveriou	9
23	Flower: length (excluding peduncle)		
(+)			
	Short	Xanthi 81	3
	Medium	Katerini 53	5
	Long	Mavros ipatis	7
24	Flower: diameter of tube (just above calyx)		
(+)			
	Small		3
	Medium		5
	Large		7
25	Flower: swell of tube		
	Weak		3
	Medium		5
	Strong		7
26	Flower: size of corolla		
(+)			
	Small		3
	Medium		5
	Large		7

	English	Example varieties	Note
27 (+)	Flower: expression of tips of corolla		
	absent or very weak	Elassona 26	1
	weak		3
	medium		5
	strong		7
	very strong	Xanthi 81	9
28 (*)	Flower: color of corolla		
	white		1
	light pink	Xanthi 2A	2
	medium pink		3
	dark pink	Katerini 53	4
	red		5
29 (*)	Flower: development of stamens		
	none or rudimentary	Poroia 52	1
	full	Xanthi 2A	2
30 (*)	Flower: Length of pistil relative to stamens (varieties with fully developed stamens only)		
	shorter	Argiroudis 14 A	1
	same size	Xanthi 2A	2
	longer	Argous Prossimni	3
31 (+)	Inflorescence: shape (at full flowering time)		
	spherical	Argiroudis 14A	1
	flattened spherical	Kontoula Zagliveriou	2
	reversed conical		3
	double conical	Ptolemaide 63, Klio	4
32	Inflorescence: position relative to upper leaves. (at full flowering time)	Varieties	
	above	Prolemaida 63	1
	among	Argiroudis 14A	2

	English	Example varieties	Note
33	Inflorescence: compactness. (at full flowering time)		
	very loose		1
	loose		3
	medium		5
	dense		7
	very dense		9
34	Leaf: manner of ripening		
	from the margins		1
	per spots	Xanthi 2A	2
	at whole lamina	Tsempeli Agriniou 21	3
	from the tip	Zihna Pageou	4

VIII. Explanations on the Table of Characteristics

1. Plant: shape

conical cylindrical elliptical inverted conical

5. Leaf: type

sessile petiolate

6. Leaf: angle of insertion

very acute | moderately acute | right angle

7. Leaf: shape in cross section

concave | straight | convex

8) Leaf : shape in profile

Straight | strongly recurved

12. Leaf: shape of blade

Lanceolate narrow elliptic broad elliptic ovate

obovate cordate rounded

16. Leaf: shape of tip

obtuse (rounded) slightly pointed medium pointed strongly pointed very strongly pointed

19. Leaf: auricles
(sessile types only)

absent or very weak | weak | medium

strong | very strong

20. Leaf: width of blade at basis
(sessile types only)

Very narrow | narrow | medium

broad | very broad

Char. 23, 24, Flower: length of flower and diameter of tube

26. Flower: size of corolla

27. Flower: expression of tips of corolla

absent or very weak very strong

31. Inflorescence: shape

spherical

flattened spherical

reversed conical

double conical

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Species	*Nicotiana tabacum* L. TOBACCO
2. Applicant (Name and address)	
3. Proposed denomination or breeder's reference	

4. Information on origin, maintenance and reproduction of the variety

4.1 Type of material

(i) inbred line

- male fertile line [ ]

- male sterile line [ ]

(ii) male sterile single hybrid [ ]

(iii) open pollinated variety [ ]

(iv)other (please indicate) [ ]

……

4.2 Formula (if applicable, for each component in separate sheets, the information according to the following chapters 5 to 7 to be added)

Single hybrid

- female parental line …….

- male parental line …….

N.B. In case of use of male sterility system, indicate the name of the maintainer line of the female parental line.

4.3 Genetic origin and breeding method

4.4 Other information

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the state of expression which best corresponds).

	Characteristics	Example Varieties	Note
5.1	**Type of tobacco**		
	Virginia		1[ ]
	Burley		2[ ]
	Oriental		3[ ]
	Sun cured		4[ ]
	Fire cured		5[ ]
	Other		6[ ]
5.2 (2)	**Plant: height of the main stem (including inflorescence)**		
	very short	Tsempeli Agriniou 21	1[ ]
	short	Xanthi 81	3[ ]
	medium	Zihna Pageou	5[ ]
	tall	Virginia Hellas 9	7[ ]
	very tall	Burley 21E	9[ ]
5.3 (3)	**Plant: number of leaves**		
	very low	Mavros Ipatis	1[ ]
	low	Mirodato Agriniou 13B Niki	3[ ]
	medium	Doxato	5[ ]
	high	Zihna Pageou	7[ ]
	very high	Sampsous 79	9[ ]

	Characteristics	Example Varieties	Note
5.4 (11)	**Leaf: ratio length/width of blade (without auricles)**		
	very low		1[ ]
	low	Katerini 53	3[ ]
	medium	Sampsous 79	5[ ]
	high	Tsempeli Agriniou 21	7[ ]
	very high		9[ ]
5.5 (12)	**Leaf: shape of blade**		
	lanceolate	Tsempeli Agrimiou 21	1[ ]
	narrow elliptic	Virginia Hellas 9	2[ ]
	broad elliptic	Xanthi 101	3[ ]
	ovate	Argiroudis 14A	4[ ]
	obovate		5[ ]
	cordate	Katerini 53	6[ ]
	rounded		7[ ]
5.6 (15)	**Leaf: color of midrib on lower side**		
	whitish		1[ ]
	whitish green		2[ ]
	green		3[ ]
5.7 (22)	**Time of flowering: (50% of plants one corolla open)**		
	very early	Mavros Ipatis	1[ ]
	early	Xanthi 2A	3[ ]
	medium	Doxato	5[ ]
	late		7[ ]
	very late	Kontoula Zagliveriou	9[ ]

	Characteristics	Example Varieties	Note
5.8 (28)	**Flower: color of corolla**		
	white		1[ ]
	light pink	Xanthi 2A	2[ ]
	medium pink		3[ ]
	dark pink	Katerini 53	4[ ]
	red		5[ ]
5.9 (29)	**Flower: development of stamens**		
	none or rudimentary	Poroia 52	1[ ]
	full	Xanthi 2A	2[ ]

6. Similar varieties and differences from these varieties

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)] In the case of identical states of expressions of both varieties, please indicate the size of the difference.

7. Additional information which may help to distinguish the variety

7

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

7.5 Other information

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 that question is yes, please attach a copy of such an authorization.

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