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GENEVA

**TECHNICAL WORKING PARTY
FOR
AGRICULTURAL CROPS**

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WORKING PAPER ON DRAFT TEST GUIDELINES FOR MEADOW FESCUE
(*Festuca pratensis* Huds.) AND
TALL FESCUE
(*Festuca arundinacea* Schreb.)

Document prepared by experts from France and Germany

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I. Subject of these Guidelines

These Test Guidelines apply to all varieties of Meadow Fescue (*Festuca pratensis* Huds.) and Tall Fescue (*Festuca arundinacea* Schreb.)

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:

1,5 kg.

The minimum requirements for germination capacity, moisture content and purity should not be less than the marketing standard for certified seed accepted in the country. Especially for storage, which requires a higher standard, the applicant should state the actual germination capacity which should be as high as possible.

2. The seed 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 similar 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 measuring 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 60 spaced plants and 10 meters of row. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Plots with spaced plants. Each test should consist of 60 single spaced plants for varieties arranged in 3 replicates or more replicates .

5. Row plots. Each test should consist of at least 10 meters of rows arranged in two or more replicates. The density of sowing should be such that about 160 to 200 plants per meter can be expected.

6. Additional tests for special purposes may be established.

IV Methods and Observations

1. Unless otherwise stated, all observations on spaced plants should be made on 60 plants or part of plants.
2. Observations on rows should be made on each plot as a whole.
3. Where observations are also made in row plots, it is likely that the expression of the characteristic and its method of recording be different from the single spaced plants, as plants cannot be examined as discrete units.
4. Interpretation of results should be made according to the rules of cross-fertilized crops as stated in the general introduction to the Test Guidelines.

V. Grouping of Varieties

1. The collection 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 and which in their various states are fairly evenly distributed within the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:

Ploidy : (characteristic 1)

Leaf : color (autumn of year of sowing) (characteristic 3) for *Festuca arundinacea* only

Plant : time of inflorescence emergence (in 2nd year) (characteristic 5)

Stem : length of longest stem (inflorescence included, when fully expanded) (characteristic 10) for *Festuca arundinacea* only

VI. Characteristics and Symbols

1. To assess distinctness, homogeneity and stability, the characteristics and their states as given in the three UPOV working languages in the Table of Characteristics should be used. For each characteristic it is indicated whether 'spaced plants' (A) or 'row plots' (B) or 'special tests' (C) should be used.
2. Notes (1 to 9), for the purposes of electronic data processing, are given opposite the states of the different characteristics.

3. Legend:

(*) Characteristics that should be used every growing period for the examination of all varieties and should always be included in the description of the variety, 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.

1) To be observed on A = spaced plants
B = row plots
C = special tests

VII Table of Characteristics

	Characteristics Caractères Merkmale	Plot ¹⁾ Parcelle ¹⁾ Parzelle ¹⁾				Example Varieties ²⁾ Exemples ²⁾ Beispielssorten ²⁾	Note
			English	français	deutsch		
(*) 1.	Ploidy	C	diploid			Cosmos 11 (F.p)	2
			tetraploid				4
			hexaploid			Ibis (F.a.)	6
			octoploid				8
			decaploid			Kasba (F.a.)	10
			amphiploid ⁽¹⁾			Lunibelle (F.a.)	11
2. (+)	Plant: tendency to form inflorescences in the year of sowing	A, B	absent or very weak			Ibis (F.a.) Cosmos 11 (F.p.)	1
			weak			Elfina (F.a.), Comtessa (F.p.)	3
			medium			Astérix (F.a.), Bundy (F.p.)	5
			strong			Leprechaun (F.a.)	7
			very strong				9
(*) 3.	Leaf: Intensity of green color (autumn of year of sowing)	B	very light				1
			light			Kasba (F.a.)	3
			medium			Sopline (F.a.), Belimo Bundy (F.p.)	5
			dark			Borneo (F.a.) Stella (F.p.)	7
			very dark			Coronado (F.a.)	9
4.	Foliage: fineness (as for 2) only for F.a.	B				Danielle (F.a.)	1
			fine			Coronado (F.a.)	3
			medium			Pastelle (F.a.)	5
			coarse			Ibis (F.a.)	7
						9	
(*) 5. (+)	Plant: time of inflorescence emergence (in 2nd year)	A, B	very early			Gardian (F.a.)	1
			early			Ibis (F.a.), Salfat (F.p.)	3
			medium			Villageoise (F.a.) Cosmos 11 (F.p.)	5
			late			Bundy (F.p.), Barcel (F.a.)	7
			very late			Bariane (F.a.)	9

(1) : Cross between 6x and 10x with a variable number of chromosomes.

	Characteristics Caractères Merkmale	Plot ¹⁾ Parcelle ¹⁾ Parzelle ¹⁾				Example Varieties ²⁾ Exemples ²⁾ Beispielssorten ²⁾	Note
			English	français	deutsch		
6. (+)	Plant: growth habit at inflorescence emergence	A	semi-erect			Cosmos 11 (F.p.) Leprechaun (F.a.)	3
			medium			Bundy (F.p.)	5
			semi-prostrate				7
7.	Plant: natural height at inflorescence emergence	A	short			Eldorado (F.a.) Bundy (F.p.)	3
			medium			Adventure (F.a.) Cosmos 11 (F.p.)	5
			long			Ibis (F.a.)	7
						Preval (F.p.)	
(*) 8.	Flag leaf: length (flag leaf on representative stem, within 2 weeks after inflorescence emergence)	A	very short				1
			short			Bonaparte (F.a.) Dufa (F.p.)	3
			medium			Comtessa (F.p.), Villageoise (F.a.)	5
			long			Ibis (F.a.)	7
			very long			Lunibelle (F.a.)	9
(*) 9.	Flag leaf: width (same flag leaf as that used for 9)	A	narrow			Bonaparte (F.a.)	3
			medium			Villageoise (F.a.) Bundy (F.p.)	5
			wide			Cosmos 11 (F.p.) Lunibelle (F.a.)	7
(*) 10.	Stem: length of lon- gest stem (inflores- cence included; when fully expanded)	A	short			Bonaparte (F.a.) Bundy (F.p.)	3
			medium			Comtessa (F.p.), Adventure (F.a.)	5
			long			Ibis (F.a.), Senu (F.p.)	7
11. (+)	Stem: length of upper internode when fully expanded	A	short			Bonaparte (F.a.) Bundy (F.p.)	3
			medium			Villageoise (F.a.) Cosmos 11 (F.p.)	5
			long			Gardian (F.a.)	7
12.	Inflorescence: length (when fully expanded)	A	short			Dufa (F.p.) Murray (F.a.)	3
			medium			Ibis (F.a.), Senu (F.p.)	5
			long			Kasba (F.a.)	7

Char 2 bis	Plant: length in autumn of year of sowing only for F.p.	A	short	Bundy (F.p.)	3
			medium		5
			long		7
Char 2 ter	Plant: growth habit in autumn of year of sowing only. for F.p	A	semi-erect	Comtessa (F.p.)	3
			medium		5
			semi-prostrate		7
Char 4 bis	Plant: natural height in spring (about 4 weeks after beginning of vegetation)	B	short	Belimo (F.p.)	3
			medium		5
			long		7
				Merifest (F.p.)	7

VIII Explanations on the Table of Characteristics

Ad. 2: Plant: tendency to form inflorescences in the year of sowing

The number of plants showing at least three inflorescences should be recorded for each variety. To be assessed on one occasion on the whole trial when the varieties are judged to have reached their full expression of this characteristic.

Ad. 5: Plant: time of inflorescence emergence (in 2nd year)

A. Plots with spaced plants

The date of inflorescence emergence of each single plant should be assessed. A single plant is considered to have headed when the tip of three inflorescences can be seen protruding from the flag leaf sheath. From the single plant data a mean date per plot and a mean date per variety is obtained.

B. Row plots

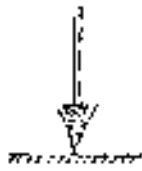
At each observation date the average plot stage should be expressed in one of the following growth stages:

- 1) Boot swollen
- 2) Tip of inflorescence just visible
- 3) 1/4 of inflorescence emerged
- 4) 1/2 of inflorescence emerged

The date of inflorescence emergence is the date at which the average plot stage 2 has been reached. This date should--if necessary--be obtained by interpolation.

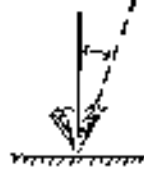
Ad. 6: Plant: growth habit

The growth habit should be assessed visually from the attitude of the leaves of the plant as a whole. The angle formed by the imaginary line through the region of greatest leaf density and the vertical should be used.



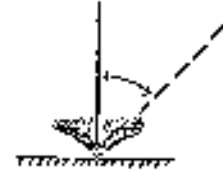
1

erect



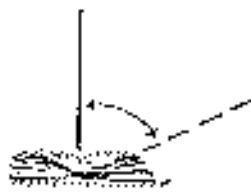
3

semi-erect



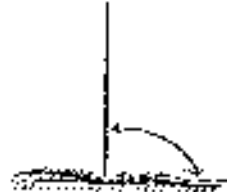
5

medium



7

semi-prostrate



9

prostrate

Ad.11: Stem: length of upper internode

The length should be measured, when the internode is fully expanded. The longest upper internode of each plant should be measured as the distance between the upper node and the basis of the inflorescence.

IX Literature

(still to be filled up)

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
<p>TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights</p>	
1. Species	<p><i>Festuca pratensis</i> Huds. MEADOW FESCUE <i>Festuca arundinacea</i> Schreb L. TALL FESCUE</p>
2. Applicant (Name and address)	
3. Proposed denomination or breeder's reference	

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

4.1 Origin

(a) Seedling (indicate parent varieties)

..... []

(b) Mutation (indicate parent variety)

..... []

(c) Discovery (indicate where and when)

..... []

(d) Other (specify)

..... []

4.2 Method of reproduction

– cuttings []

– *in vitro* propagation []

4.3 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 Ploidy (1)		
diploid	Cosmos 11 (F.p.)	2[]
tetraploid		4[]
hexaploid	Ibis (F.a.)	6[]
octoploid		8[]
decaploid	Kasba (F.a.)	10[]
amphiploid	Lunibelle (F.a.)	x[]
5.2 Leaf: color (autumn of year of sowing) (3)		
		1[]
light green	Kasba (F.a.)	3[]
medium green	Sopline (F.a.) Belimo Bundy (F.p.)	5[]
dark green	Borneo (F.p.)	7[]
5.3 Plant: time of inflorescence emergence (in 2nd year) (5) (+)		
very early	Gardian (F.a.)	1[]
early	Ibis (F.a.) Salfat (F.p.)	3[]
medium	Villageoise (F.a.) Cosmos 11 (F.p.)	5[]
late	Bundy (F.p.)	7[]
very late	Buffalo (F.a.)	9[]

Characteristics	Example Varieties	Note
5.4 Stem: length of longest stem (inflorescence included; when fully expanded) (10)		
short	Bonaparte Bundy (F.p.)	(F.a.) 3[]
medium	Comtessa Aventure (F.a.)	(F.p.) 5[]
medium	Ibis Senu (F.p.)	(F.a.) 7[]

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

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

7.3 Other information

A representative color photo of the variety should be added to 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 that question is yes, please attach a copy of such an authorization.

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