



TG/39/8

INTERNATIONAL UNION
FOR THE PROTECTION
OF NEW VARIETIES OF
PLANTS

UNION INTERNATIONALE
POUR LA PROTECTION
DES OBTENTIONS
VÉGÉTALES

INTERNATIONALER
VERBAND ZUM SCHUTZ
VON PFLANZEN-
ZÜCHTUNGEN

UNIÓN INTERNACIONAL
PARA LA PROTECCIÓN
DE LAS OBTENCIONES
VEGETALES

GUIDELINES
FOR THE CONDUCT OF TESTS
FOR DISTINCTNESS, UNIFORMITY AND STABILITY

MEADOW FESCUE,
(*Festuca pratensis* Huds.)

TALL FESCUE
(*Festuca arundinacea* Schreb.)

GENEVA
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(*Festuca arundinacea* Schreb.)

These Guidelines should be read in conjunction with document TG/1/2, which contains explanatory notes on the general principles on which the Guidelines have been established.

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
I. Subject of these Guidelines	3
II. Material Required	3
III. Conduct of Tests	3
IV. Methods and Observations.....	4
V. Grouping of Varieties	4
VI. Characteristics and Symbols	4
VII. Table of Characteristics	6
VIII. Explanations on the Table of Characteristics	11
IX. Literature	13
X. Technical Questionnaire	14

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:

1,5 kg.

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should be stated by the applicant.

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 independent growing cycles.

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 tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination. 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. Each test should be designed to result in a total of at least 60 spaced plants and 10 meters of row plot. 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 arranged in 3 or more replicates .

5. Row plots. Each test should consist of at least 10 meters of row 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 parts taken from each of 60 plants.
2. Observations on rows should be made on each row as a whole.
3. Where observations can be made in both spaced plants and row plots, it is likely that the expression of the characteristic and its method of recording are different because in single spaced plants the plants can be examined as discrete units.
4. The assessment of uniformity for cross-pollinated varieties should be according to the recommendations in the General Introduction.

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) Ploidy (characteristic 1)
 - (b) Leaf: intensity of green color during vegetative growth stage (characteristic 4) (for *Festuca arundinacea* only)
 - (c) Plant: time of inflorescence emergence (after vernalization) (characteristic 8)
 - (d) Stem: length of longest stem including inflorescence (when fully expanded) (characteristic 11) (for *Festuca arundinacea* only)

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 the examinations are made and always be included in the variety description 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) Type of assessment:

MG: measurement of a group of plants or parts of plants

MS: measurement of a number of individual plants or parts of plants

VG: visual assessment by a single observation of a group of plants or parts of plants

VS: visual assessment by observation of individual plants or parts of plants

To be observed on A = spaced plants

B = row plots

C = special tests

F.p. = *Festuca pratensis* Huds.

F.a. = *Festuca arundinacea* Schreb.

VII. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

Plot ¹⁾ Parcelle ¹⁾ Parzelle ¹⁾ Parcela ¹⁾	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. C (*) (+)	Ploidy	Ploïdie	Ploidie	Ploidía		
	diploid	diploïde	diploid	diploide	Cosmos 11(F.p.)	2
	tetraploid	tétraploïde	tetraploid	tetraploide		4
	hexaploid	hexaploïde	hexaploid	hexaploide	Ibis (F.a.)	6
	octoploid	octoploïde	oktoploid	octoploide		8
	decaploid	décaploïde	dekaploid	decaploide	Kasba (F.a.)	10
	amphiploid	amphiploïde	amphiploid	anfiploide	Lunibelle (F.a.)	11
2. A VS (*) (+)	<u>Only for F.p.: Plant:</u> growth habit (as for 3)	<u>Uniquement pour</u> <u>F.p.: Plante: port</u> (comme pour 3)	<u>Nur für F.p.: Pflanze:</u> Wuchsform (wie unter 3)	<u>Solamente para</u> <u>F.p.: Planta: porte</u> (como para 3)		
	semi-erect	demi-dressé	halbaufrecht	semi-erecto		3
	intermediate	demi-dressé à demi-étalé	mittel	intermedio	Comtessa (F.p.)	5
	semi-prostrate	demi-étalé	halbliiegend	semi-postrado	Cosmos 11 (F.p.)	7
3. B VG	<u>Only for F.a.:</u> Foliage: fineness (as for 2)	<u>Uniquement pour</u> <u>F.a.: Feuillage:</u> finesse (comme pour 2)	<u>Nur für F.a.: Laub:</u> Feinheit (wie unter 2)	<u>Solamente para F.a.:</u> Follaje: finura (como para 2)		
	very fine	très fin	sehr fein	muy fino	Danielle (F.a.)	1
	fine	fin	fein	fino	Coronado (F.a.)	3
	medium	moyen	mittel	medio	Pastelle (F.a.)	5
	coarse	grossier	grob	grueso	Ibis (F.a.)	7

Plot ¹⁾ Parcelle ¹⁾ English Parzelle ¹⁾ Parcela ¹⁾	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4. B VG (*)	Leaf: intensity of green color during vegetative growth stage	Feuille: intensité de la couleur verte au cours du développement végétatif	Blatt: Intensität der Grünfärbung während des vegetativen Wachstums	Hoja: intensidad del color verde durante el crecimiento vegetativo	
	very light	très claire	sehr hell	muy clara	1
	light	claire	hell	clara	Kasba (F.a.) 3
	medium	moyenne	mittel	media	Sopline (F.a.), Belimo Bundy (F.p.) 5
	dark	foncée	dunkel	oscura	Borneo (F.a.), Stella (F.p.) 7
	very dark	très foncée	sehr dunkel	muy oscura	Coronado (F.a) 9
5. A MS (+)	<u>Only for F.p.: Plant: length (at the end of growing period before vernalization)</u>	<u>Uniquement pour F.p.: Plante: longueur (à la fin de la période de végétation avant vernalisation)</u>	<u>Nur für F.p.: Pflanze: Länge (am Ende der Vegetationsperiode vor Vernalisation)</u>	<u>Solamente para F.p.: Planta: longitud (al final del periodo de vegetación antes de la vernalización)</u>	
	short	courte	kurz	corta	3
	medium	moyenne	mittel	media	Bundy (F.p.) 5
	long	longue	lang	larga	Preval (F.p.) 7
6. A MS B VG (+)	Plant: tendency to form inflorescences (without vernalization)	Plante: tendance à former des inflorescences (sans vernalisation)	Pflanze: Neigung zur Bildung von Blütenständen (ohne Vernalisation)	Planta: tendencia a formar inflorescencias (sin vernalización)	
	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Ibis (F.a.), Cosmos 11 (F.p.) 1
	weak	faible	gering	débil	Elfina (F.a.) , Comtessa (F.p.) 3
	medium	moyenne	mittel	media	Astérix (F.a.), Bundy (F.p.) 5
	strong	forte	stark	fuerte	Leprechaun (F.a.) 7
	very strong	très forte	sehr stark	muy fuerte	9

Plot ¹⁾ Parcelle ¹⁾ Parzelle ¹⁾ Parcela ¹⁾	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7. B MG	Plant: natural height after vernalization (about 4 weeks after beginning of vegetative growth)	Plante: hauteur naturelle après vernalisation (environ 4 semaines après le début de la croissance végétative)	Pflanze: natürliche Höhe nach Vernalisation (ungefähr 4 Wochen nach Beginn des vegetativen Wachstums)	Planta: altura después de la vernalización (aprox. 4 semanas después del comienzo del crecimiento vegetativo)		
	short	basse	niedrig	baja		3
	medium	moyenne	mittel	media	Belimo (F.p.)	5
	long	haute	hoch	alta	Merifest (F.p.)	7
8. A MS (*) B MG (+)	Plant: time of inflorescence emergence (after vernalization)	Plante: époque d'épiaison (après vernalisation)	Pflanze: Zeitpunkt des Erscheinens der Blütenstände (nach der Vernalisation)	Planta: época de emergencia de las inflorescencias (tras la vernalización)		
	very early	très précoce	sehr früh	muy temprana	Gardian (F.a.)	1
	early	précoce	früh	temprana	Ibis (F.a.), Salfat (F.p.)	3
	medium	moyenne	mittel	media	Villageoise (F.a.), Cosmos 11 (F.p.)	5
	late	tardive	spät	tardía	Barcel (F.a.), Bundy (F.p.)	7
	very late	très tardive	sehr spät	muy tardía	Bariane (F.a.)	9
9. A VS (+)	Plant: growth habit at <u>inflorescence emergence</u>	Plante: port à l'<u>épiaison</u>	Pflanze: Wuchsform bei <u>Erscheinen der Blütenstände</u>	Planta: porte a la <u>emergencia de la inflorescencia</u>		
	semi-erect	demi-dressé	halbaufrecht	semierecto	Leprechaun (F.a.), Cosmos 11 (F.p.)	3
	intermediate	demi-dressé à demi-étalé	mittel	intermedio	Bundy (F.p.)	5
	semi-prostrate	demi-étalé	halbliegend	semiprostrado		7

Plot ¹⁾ Parcelle ¹⁾ Parzelle ¹⁾ Parcela ¹⁾	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10. A MS	Plant: natural height at inflorescence emergence	Plante: hauteur naturelle à l'épiaison	Pflanze: natürliche Höhe bei Erscheinen der Blütenstände	Planta: altura a la emergencia de la inflorescencia		
	short	basse	niedrig	baja	Eldorado (F.a.), Bundy (F.p.)	3
	medium	moyenne	mittel	media	Adventure (F.a.), Cosmos 11 (F.p.)	5
	long	haute	hoch	alta	Ibis (F.a.), Preval (F.p.)	7
11. A MS (*)	Stem: length of longest stem including inflorescence (when fully expanded)	Tige: longueur de la tige la plus longue y compris l'inflorescence (à la fin de l'élongation)	Halm: Länge des längsten Halms einschließlich Blütenstand (wenn voll ausgebildet)	Tallo: longitud del tallo más largo incluyendo la inflorescencia (cuando está completamente expandida)		
	short	courte	kurz	corta	Bonaparte (F.a.), Bundy (F.p.)	3
	medium	moyenne	mittel	media	Aventure (F.a.), Comtessa (F.p.)	5
	long	longue	lang	larga	Ibis (F.a.), Senu (F.p.)	7
12. A MS (*)	Flag leaf: width (same flag leaf as that used for 13)	Dernière feuille: largeur (même feuille que celle utilisée pour 13)	Fahnenblatt: Breite (dasselbe Fahnenblatt wie für 13)	Hoja banderola: anchura (la misma hoja que como para 13)		
	narrow	étroite	schmal	estrecha	Bonaparte (F.a.)	3
	medium	moyenne	mittel	media	Villageoise (F.a.), Bundy (F.p.)	5
	wide	large	breit	ancha	Lunibelle (F.a.), Cosmos 11 (F.p.)	7

Plot ¹⁾ Parcelle ¹⁾ Parzelle ¹⁾ Parcela ¹⁾	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13. A MS	Inflorescence: length (as for 11)	Inflorescence: longueur (comme pour 11)	Blütenstand: Länge (wie unter 11)	Inflorescencia: longitud (como para 11)		
	short	courte	kurz	corta	Murray (F.a.), Dufa (F.p.)	3
	medium	moyenne	mittel	media	Ibis (F.a.), Senu (F.p.)	5
	long	longue	lang	larga	Kasba (F.a.)	7
14. A MS (*)	Flag leaf: length on representative stem (as for 11)	Dernière feuille: longueur d’une tige représentative (comme pour 11)	Fahnenblatt: Länge an einem repräsentativen Halm (wie unter 11)	Hoja banderola: longitud en tallo representativo (como para 11)		
	very short	courte	sehr kurz	muy corta		1
	short	très courte	kurz	corta	Bonaparte (F.a.), Dufa (F.p.)	3
	medium	moyenne	mittel	media	Villageoise (F.a.), Comtessa (F.p.)	5
	long	longue	lang	larga	Ibis (F.a.)	7
	very long	très longue	sehr lang	muy larga	Lunibelle (F.a.)	9

VIII. Explanations on the Table of Characteristics

Ad. 1: Ploidy

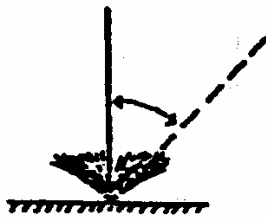
Amphiploid: Cross between hexaploid and decaploid with a variable number of chromosomes.

Ad. 2 + 9: Only for F.p.: Plant: growth habit (as for 3) (2) and Plant: growth habit at inflorescence emergence (9)

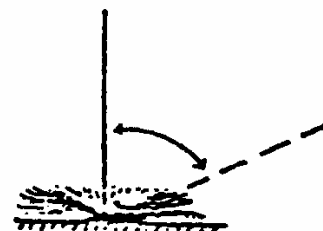
The growth habit should be assessed visually from the attitude of the leaves of the plant as a whole. The angle formed by the imaginary line through the region of greatest leaf density and the vertical should be used.



3
semi-erect

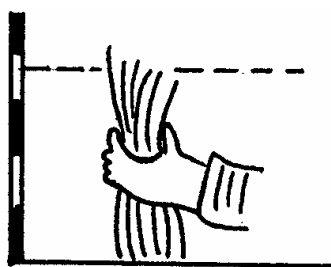


5
intermediate



7
semi-prostrate

Ad. 5: Only for F.p.: Plant: length (at the end of growing period before vernalization)



The mean length of the longest leaves should be measured with the plant held upright.

Ad. 6: Plant: tendency to form inflorescences (without vernalization)

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. 8: Plant: time of inflorescence emergence (after vernalization)

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.

IX. Literature

Fermanian, T.W. Haley, J.E. Wessels, K. Wilkinson, H.T. Han, S., Characterization of tall fescue and perennial ryegrass cultivars. *Journal of Turfgrass Management*. 1996. 1: 4, 63-79.

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 <i>Festuca pratensis</i> Huds. MEADOW FESCUE <i>Festuca arundinacea</i> Schreb L. TALL FESCUE	
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

4.2 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.)	11[]
5.2 Leaf: intensity of green color during vegetative growth stage (4)		
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[]
5.3 Plant: time of inflorescence emergence (after vernalization) (8)		
very early	Gardian (F.a.)	1[]
early	Ibis (F.a.), Salfat (F.p.)	3[]
medium	Villageoise (F.a.), Cosmos 11 (F.p.)	5[]
late	Barcel (F.a.), Bundy (F.p.)	7[]
very late	Bariane (F.a.)	9[]

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

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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