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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

FESTULOLIUM *

UPOV Code(s): FESTL

× *Festulolium* Asch. et Graebn.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
× *Festulolium* Asch. et Graebn., ×*Schedololium* Soreng & Terrell, ×*Schedolium* Holub	Festulolium	Festulolium	Festulolium, Schwingel	Cañuela, Festuca, Festulolium

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of × *Festulolium* Asch. et Graebn.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of seed.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

1 kg

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 Number of Growing Cycles

3.1.1 The minimum duration of tests should normally be two independent growing cycles.

3.1.2 The two independent growing cycles should be in the form of two separate plantings.

3.1.3 The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.

3.2 Testing Place

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 “Examining Distinctness”.

3.3 Conditions for Conducting the Examination

3.3.1 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.

3.3.2 The optimum stage of development for the assessment of each characteristic is indicated by a number in the Table of Characteristics. The stages of development denoted by each number are described in Chapter 8.3.

3.3.3 The recommended type of plot in which to observe the characteristic is indicated by the following key in the Table of Characteristics:

A: Spaced plants

B: Row plots

C: Special test

3.4 Test Design

3.4.1 Each test should be designed to result in at least 60 plants which should be divided between at least two replicates. In addition, the test may include 8 meters of row plot which should be divided between at least two replicates. The density of the seed should be such that around 200 plants/meter can be expected.

3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of Plants or Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 60 plants or parts of plants taken from each of 60 plants and any other observations made on all plants in the test, disregarding any off-type plants.

In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 1.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation of characteristics”):

MG: single 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”):

Type of observation: visual (V) or measurement (M)

“Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes

smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 Uniformity

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 These Test Guidelines have been developed for the examination of cross-pollinated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.

4.2.3 The assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.3 Stability

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new seed stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

(a) Ploidy (characteristic 1)
(b) Plant: time of inflorescence emergence (characteristic 9)
(c) Stem: length (characteristic 14)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 States of Expression and Corresponding Notes

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.2.2 All relevant states of expression are presented in the characteristic.

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 “Development of Test Guidelines”.

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 Legend

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1	**2**	**3**	**4**	**5**	**6**	**7**			
		Name of characteristics in English		**Nom du caractère en français**		**Name des Merkmals auf Deutsch**	**Nombre del carácter en español**		
		states of expression		types d'expression		Ausprägungsstufen	tipos de expresión		

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

3 Type of expression
QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3

4 Method of observation (and type of plot, if applicable)
MG, MS, VG, VS – see Chapter 4.1.5

5 (+) See Explanations on the Table of Characteristics in Chapter 8.2

6 (a)-(b) See Explanations on the Table of Characteristics in Chapter 8.1

7 Growth stage key See Explanations on the Table of Characteristics in Chapter 8.3

A, B, C See Chapter 3.3.3

7. Table of Characteristics/Tableau des caracteres/Merkmalstabelle/Tabla de caracteres

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	**(*)**	**QL MG|C**	**(+)**				
		Ploidy	**Ploïdie**	**Ploidie**	**Ploidía**		
		diploid	diploïde	diploid	diploide	Matrix	2
		tetraploid	tétraploïde	tetraploid	tetraploide	Betria, Perun	4
		hexaploid	hexaploïde	hexaploid	hexaploide	Felina, Mahulena	6
2.		**QN VG|B/VS|A**	**(a)**	**20-29**			
		Plant: growth habit <u>without</u> vernalization	**Plante : port <u>sans</u> vernalisation**	**Pflanze: Wuchsform <u>ohne</u> Vernalisation**	**Planta: hábito de crecimiento <u>sin</u> vernalización**		
		erect	dressé	aufrecht	erecto		1
		erect to semi-erect	dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semierecto		2
		semi-erect	demi-dressé	halbaufrecht	semierecto		3
		semi-erect to intermediate	demi-dressé à intermédiaire	halbaufrecht bis mittel	semierecto a intermedio		4
		intermediate	intermédiaire	mittel	intermedio	Lofa	5
		intermediate to semi-prostrate	intermédiaire à demi-étalé	mittel bis halbliegend	intermedio a semipostrado		6
		semi-prostrate	demi-étalé	halbliegend	semipostrado	Merlin, Sulino	7
		semi-prostrate to prostrate	demi-étalé à étalé	halbliegend bis liegend	semipostrado a postrado		8
		prostrate	étalé	liegend	postrado		9
3.		**QN VG|B/VS|A**	**(+)**				
		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	absente ou très faible	fehlen oder sehr gering	ausente o muy débil	Perun	1
		very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil		2
		weak	faible	gering	débil	Achilles	3
		weak to medium	faible à moyenne	gering bis mittel	débil a media		4
		medium	moyenne	mittel	media	Aberniche, Sabik	5
		medium to strong	moyenne à forte	mittel bis stark	media a fuerte		6
		strong	forte	stark	fuerte	Hemsut	7
		strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte		8
		very strong	très forte	sehr stark	muy fuerte		9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4.	**QN** **MS|A/VG|B**			**20-29**			
	Leaf: length without vernalization		**Feuille : longueur sans vernalisation**	**Blatt: Länge ohne Vernalisation**	**Hoja: longitud sin vernalización**		
	very short		très courte	sehr kurz	muy corta		1
	very short to short		très courte à courte	sehr kurz bis kurz	muy corta a corta		2
	short		courte	kurz	corta	Aberroot	3
	short to medium		courte à moyenne	kurz bis mittel	corta a media		4
	medium		moyenne	mittel	media	Betria	5
	medium to long		moyenne à longue	mittel bis lang	media a larga		6
	long		longue	lang	larga	Perun	7
	long to very long		longue à très longue	lang bis sehr lang	larga a muy larga		8
	very long		très longue	sehr lang	muy larga		9
5.	**QN** **MS|A/VG|B/ VS|A**			**20-29**			
	Leaf: width without vernalization		**Feuille : largeur sans vernalisation**	**Blatt: Breite ohne Vernalisation**	**Hoja: anchura sin vernalización**		
	very narrow		très étroite	sehr schmal	muy estrecha		1
	very narrow to narrow		très étroite à étroite	sehr schmal bis schmal	muy estrecha a estrecha		2
	narrow		étroite	schmal	estrecha	Aberroot	3
	narrow to medium		étroite à moyenne	schmal bis mittel	estrecha a media		4
	medium		moyenne	mittel	media	Betria	5
	medium to broad		moyenne à large	mittel bis breit	media a ancha		6
	broad		large	breit	ancha	Felopa, Festum	7
	broad to very broad		large à très large	breit bis sehr breit	ancha a muy ancha		8
	very broad		très large	sehr breit	muy ancha		9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	**QN** **VG|B/VS|A**		**(a)**	**30-39**			
	Plant: growth habit <u>after</u> vernalization		**Plante : port <u>après</u> vernalisation**	**Pflanze: Wuchsform <u>nach</u> Vernalisation**	**Planta: hábito de crecimiento <u>tras la</u> vernalización**		
	erect		dressé	aufrecht	erecto		1
	erect to semi-erect		dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semierecto		2
	semi-erect		demi-dressé	halbaufrecht	semierecto		3
	semi-erect to intermediate		demi-dressé à intermédiaire	halbaufrecht bis mittel	semierecto a intermedio		4
	intermediate		intermédiaire	mittel	intermedio	Lofa, Mahulena	5
	intermediate to semi-prostrate		intermédiaire à demi-étalé	mittel bis halbliegend	intermedio a semipostrado		6
	semi-prostrate		demi-étalé	halbliegend	semipostrado	Merlin	7
	semi-prostrate to prostrate		demi-étalé à étalé	halbliegend bis liegend	semipostrado a postrado		8
	prostrate		étalé	liegend	postrado		9
7.	**QN** **MS|A/VS|A**		**(+)**	**30**			
	Plant: width after vernalization		**Plante : largeur après vernalisation**	**Pflanze: Breite nach Vernalisation**	**Planta: anchura tras la vernalización**		
	very narrow		très étroite	sehr schmal	muy estrecha		1
	very narrow to narrow		très étroite à étroite	sehr schmal bis schmal	muy estrecha a estrecha		2
	narrow		étroite	schmal	estrecha	Matrix	3
	narrow to medium		étroite à moyenne	schmal bis mittel	estrecha a media		4
	medium		moyenne	mittel	media	Festum, Sulino	5
	medium to broad		moyenne à large	mittel bis breit	media a ancha		6
	broad		large	breit	ancha	Mahulena, Perun	7
	broad to very broad		large à très large	breit bis sehr breit	ancha a muy ancha		8
	very broad		très large	sehr breit	muy ancha		9
8.	**QN** **MG|B/MS|A/ VG|B**			**30-39**			
	Plant: natural height <u>after</u> vernalization		**Plante : hauteur naturelle <u>après</u> vernalisation**	**Pflanze: natürliche Höhe <u>nach</u> Vernalisation**	**Planta: altura natural <u>tras la</u> vernalización**		
	very short		très basse	sehr niedrig	muy baja		1
	very short to short		très basse à basse	sehr niedrig bis niedrig	muy baja a baja		2
	short		basse	niedrig	baja	Matrix	3
	short to medium		basse à moyenne	niedrig bis mittel	baja a media		4
	medium		moyenne	mittel	media	Perun	5
	medium to tall		moyenne à haute	mittel bis hoch	media a alta		6
	tall		haute	hoch	alta	Naos	7
	tall to very tall		haute à très haute	hoch bis sehr hoch	alta a muy alta		8
	very tall		très haute	sehr hoch	muy alta		9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9.	**(*)**	**QN MG|B/MS|A**	**(+)**				
		Plant: time of inflorescence emergence	**Plante : époque d'épiaison**	**Pflanze: Zeitpunkt des Erscheinens der Blütenstände**	**Planta: época de la emergencia de las inflorescencias**		
		very early	très précoce	sehr früh	muy temprana		1
		very early to early	très précoce à précoce	sehr früh bis früh	muy temprana a temprana		2
		early	précoce	früh	temprana	Achilles, Lukida	3
		early to medium	précoce à moyenne	früh bis mittel	temprana a media		4
		medium	moyenne	mittel	media	Perun	5
		medium to late	moyenne à tardive	mittel bis spät	media a tardía		6
		late	tardive	spät	tardía	Betria	7
		late to very late	tardive à très tardive	spät bis sehr spät	tardía a muy tardía		8
		very late	très tardive	sehr spät	muy tardía		9
10.	**(*)**	**QN MS|A**	**(+)**	**50**			
		Plant: natural height <u>at inflorescence emergence</u>	**Plante : hauteur naturelle <u>à l'épiaison</u>**	**Pflanze: natürliche Höhe <u>bei Erscheinen der Blütenstände</u>**	**Planta: altura natural <u>en la época de la emergencia de las inflorescencias</u>**		
		very short	très basse	sehr kurz	muy baja		1
		very short to short	très basse à basse	sehr kurz bis kurz	muy baja a baja		2
		short	basse	kurz	baja	Matrix	3
		short to medium	basse à moyenne	kurz bis mittel	baja a media		4
		medium	moyenne	mittel	media	Perun	5
		medium to tall	moyenne à haute	mittel bis hoch	media a alta		6
		tall	haute	hoch	alta	Felina, Naos	7
		tall to very tall	haute à très haute	hoch bis sehr hoch	alta a muy alta		8
		very tall	très haute	sehr hoch	muy alta		9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.		**QN VG|B/VS|A**	**(a)**	**50-52**			
		Plant: growth habit <u>at inflorescence emergence</u>	**Plante: port <u>à l'épiaison</u>**	**Pflanze: Wuchsform <u>bei Erscheinen der Blütenstände</u>**	**Planta: hábito de crecimiento <u>en la época de la emergencia de las inflorescencias</u>**		
		erect	dressé	aufrecht	erecto	Felina	1
		erect to semi-erect	dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semierecto		2
		semi-erect	demi-dressé	halbaufrecht	semierecto	Achilles, Becva	3
		semi-erect to intermediate	demi-dressé à intermédiaire	halbaufrecht bis mittel	semierecto a intermedio		4
		intermediate	intermédiaire	mittel	intermedio	Fojtan	5
		intermediate to semi-prostrate	intermédiaire à demi-étalé	mittel bis halbliegend	intermedio a semipostrado		6
		semi-prostrate	demi-étalé	halbliegend	semipostrado		7
		semi-prostrate to prostrate	demi-étalé à étalé	halbliegend bis liegend	semipostrado a postrado		8
		prostrate	étalé	liegend	postrado		9
12.	**(*)**	**QN MS|A**	**(+)**	**50-56**			
		Flag leaf: length	**Dernière feuille : longueur**	**Fahnenblatt: Länge**	**Ultima hoja: longitud**		
		very short	très courte	sehr kurz	muy corta		1
		very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta		2
		short	courte	kurz	corta		3
		short to medium	courte à moyenne	kurz bis mittel	corta a media		4
		medium	moyenne	mittel	media	Felopa, Sulino	5
		medium to long	moyenne à longue	mittel bis lang	media a larga		6
		long	longue	lang	larga	Naos, Perun	7
		long to very long	longue à très longue	lang bis sehr lang	larga a muy larga		8
		very long	très longue	sehr lang	muy larga		9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13.	**(*)**	**QN** **MS|A**	**(+)**	**50-56**			
		Flag leaf: width	**Dernière feuille : largeur**	**Fahnenblatt: Breite**	**Ultima hoja: anchura**		
		very narrow	très étroite	sehr schmal	muy estrecha		1
		very narrow to narrow	très étroite à étroite	sehr schmal bis schmal	muy estrecha a estrecha		2
		narrow	étroite	schmal	estrecha		3
		narrow to medium	étroite à moyenne	schmal bis mittel	estrecha a media		4
		medium	moyenne	mittel	media	Lofa, Mahulena	5
		medium to broad	moyenne à large	mittel bis breit	media a ancha		6
		broad	large	breit	ancha	Naos, Perun	7
		broad to very broad	large à très large	breit bis sehr breit	ancha a muy ancha		8
		very broad	très large	sehr breit	muy ancha		9
14.	**(*)**	**QN** **MS|A**	**(+)** **(b)**	**60-68**			
		Stem: length	**Tige : longueur**	**Halm: Länge**	**Tallo: longitud**		
		very short	très courte	sehr kurz	muy corta		1
		very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta		2
		short	courte	kurz	corta	Matrix	3
		short to medium	courte à moyenne	kurz bis mittel	corta a media		4
		medium	moyenne	mittel	media	Felopa, Sulino	5
		medium to long	moyenne à longue	mittel bis lang	media a larga		6
		long	longue	lang	larga	Felina, Naos	7
		long to very long	longue à très longue	lang bis sehr lang	larga a muy larga		8
		very long	très longue	sehr lang	muy larga		9
15.		**QN** **MS|A**	**(+)** **(b)**	**60-68**			
		Stem: length of upper internode	**Tige : longueur du dernier entre-nœud**	**Halm: Länge des obersten Internodiums**	**Tallo: longitud del entrenudo superior**		
		very short	très courte	sehr kurz	muy corta		1
		very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta		2
		short	courte	kurz	corta	Matrix	3
		short to medium	courte à moyenne	kurz bis mittel	corta a media		4
		medium	moyenne	mittel	media	Felopa, Sulino	5
		medium to long	moyenne à longue	mittel bis lang	media a larga		6
		long	longue	lang	larga	Felina, Naos	7
		long to very long	longue à très longue	lang bis sehr lang	larga a muy larga		8
		very long	très longue	sehr lang	muy larga		9

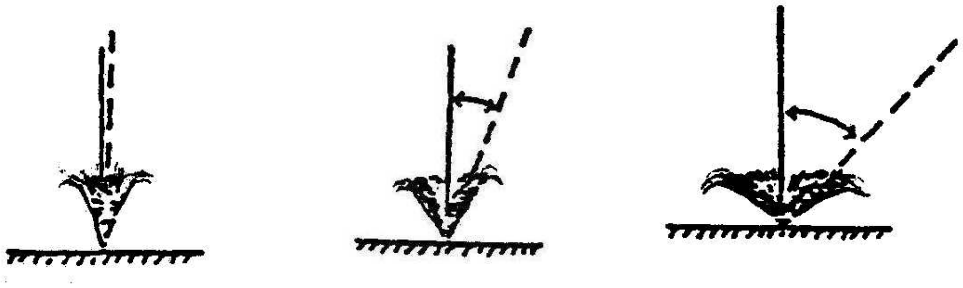
		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	**(*)**	**QN** **MS|A**	**(+)** **(b)**	**60-68**			
		Inflorescence: length	**Inflorescence : longueur**	**Blütenstand: Länge**	**Inflorescencia: longitud**		
		very short	très courte	sehr kurz	muy corta		1
		very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta		2
		short	courte	kurz	corta	Diagram	3
		short to medium	courte à moyenne	kurz bis mittel	corta a media		4
		medium	moyenne	mittel	media	Felina, Merlin	5
		medium to long	moyenne à longue	mittel bis lang	media a larga		6
		long	longue	lang	larga	Lofa, Perun	7
		long to very long	longue à très longue	lang bis sehr lang	larga a muy larga		8
		very long	très longue	sehr lang	muy larga		9

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

Characteristics containing the following key in the Table of Characteristics should be examined as indicated below:

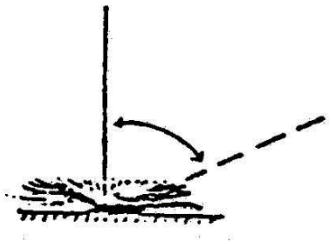
(a)



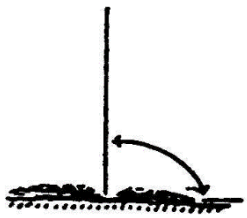
1
erect

3
semi-erect

5
intermediate



7
semi-prostrate



9
prostrate

(b) Observations should be made on the longest stem when fully expanded.

8.2 Explanations for individual characteristics

Ad. 1: Ploidy

Observation should be made by standard cytological methods.

Ad. 3: Plant: tendency to form inflorescences without vernalization

Observations should be made on one occasion for the whole trial when all varieties are considered to have reached their full expression of this characteristic. Plants showing at least three inflorescences should be considered to have this tendency.

Ad. 7: Plant: width after vernalization

To allow for irregular plant shapes (for example due to wind shaping effects) the plant width may be determined by taking two observations of the diameter across the plant at right angles to each other and then using the average of these two figures as the plant width.

Ad. 9: Plant: time of inflorescence emergence

Observations should be made at least twice per week.

A: Plots with spaced plants

The time of inflorescence emergence of each single plant should be observed. A plant has reached time of inflorescence emergence when the tip of three inflorescences is visible (Growth Stage DC 50).

B: Row plots

The time of inflorescence emergence is reached when the average growth stage of the plot is DC 54. This date should – if necessary – be obtained by interpolation. At each observation date, the average plot stage should be expressed in one of the following growth stages:

DC 50 First spikelet of inflorescence just visible
DC 52 25% of the inflorescence emerged (across all stems)
DC 54 50% of the inflorescence emerged (across all stems)
DC 56 75% of the inflorescence emerged (across all stems)

Ad. 10: Plant: natural height at inflorescence emergence

Observations should be made on the average height of the foliage in the centre of the plant.

Ad. 12: Flag leaf: length

The flag leaf is the leaf directly below the inflorescence. Length and width should be observed on the same leaf.

Observations should be made from the tip of the leaf blade to the leaf sheath.

Ad. 13: Flag leaf: width

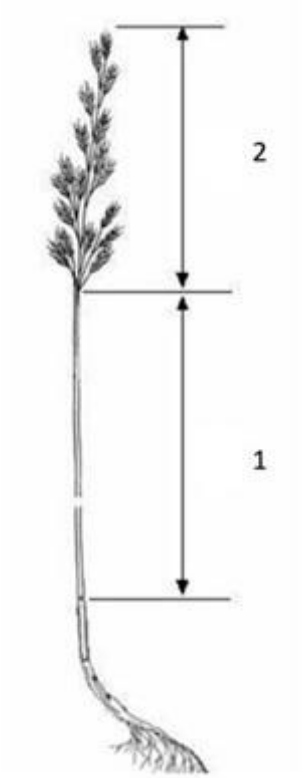
Observations should be made at the widest point of the leaf blade.

See Ad. 12

Ad. 14: Stem: length

Observations should be made on the longest stem from ground level to the tip of the inflorescence, when the inflorescence is fully expanded.

Ad. 15: Stem: length of upper internode



Char. 15: 1 = The upper internode is the part of the stem above the top node up to the beginning of the inflorescence.

Char. 16: 2 = Length of the inflorescence.

Ad. 16: Inflorescence: length

See Ad. 15.

8.3 Growth stages

All characteristics should be recorded at the appropriate time for the plant concerned. Growth stages of grasses are indicated by decimal codes which are derived from the decimal code for the growth stages of cereals (Zadoks, et al., 1974). This decimal code is in close conformity with the BBCH-code (Meier, 1997)

Seedling growth (seedling: one shoot)
DC 10 First leaf through coleoptile
DC 15 Five leaves unfolded
DC 19 Nine or more leaves unfolded

Tillering
DC 20 Main shoot only (beginning of tillering)
DC 23 Main shoot and 3 tillers
DC 25 Main shoot and 5 tillers
DC 29 Main shoot and 9 more tillers

Stem elongation
DC 30 Pseudo-stem erection (formed by sheaths of leaves)
DC 31 First node detectable (early stem extension across all stems)
DC 35 Fifth node detectable (50% extension across all stems)
DC 39 Flag leaf ligula/collar just visible (pre-boot stage)

Booting
DC 41 Flag leaf sheath extending (little enlargement of the inflorescence, early boot-stage)
DC 45 Boots swollen (late-boot stage)
DC 47 Flag leaf sheath opening
DC 49 First awns visible (in awned forms only)

Inflorescence emergence (mostly non-synchronous)
DC 50 First spikelet of inflorescence just visible
DC 52 25% of the inflorescence emerged (across all stems)
DC 54 50% of the inflorescence emerged (across all stems)
DC 56 75% of the inflorescence emerged (across all stems)
DC 58 Emergence of inflorescence completed

Anthesis (mostly non-synchronous)
DC 60 Beginning of anthesis
DC 64 Anthesis half-way
DC 68 Anthesis complete

9. Literature

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Barker, R.E., Kilgore, J.A., Cook, R.L., Garay, A.E. and Warnke, S.E., 2001: Use of flow cytometry to determine ploidy level of ryegrass. Journal of Seed Science and Technology, 29, pp. 493-502.

Camlin, M.S., Watson, S., Waters, B.G. and Weatherup, S.T.C., 2001: The potential for management of reference collections in herbage variety registration trials using a cyclic planting system for reference varieties. Plant Varieties and Seeds, 14, pp. 1-14.

Hawkins, R.P., 1958: The Classification of the Strains (Varieties) of Herbage Plants. Journal of the National Institute of Agricultural Botany, 9, pp. 434-449.

Meier, U., 1997: Growth stages of mono- and dicotyledonous plants. BBCH-Monograph, Blackwell Science, Berlin, Vienna, a.o., 622 pp.

Patterson, H.D. and Weatherup, S.T.C., 1984: Statistical Criteria for Distinctness between Varieties of Herbage Crops. Journal of Agricultural Science, Cambridge, 102, pp. 59-68.

Squire A.M., 1962: A rapid technique for counting chromosomes in grass breeding studies. Journal of the British Grassland Society, 21(4), 305-306.

Tyler, B.F., Hayes, J.D. and Ellis Davies, W., 1985: IBPGR/CEC Descriptive List for Forage Grasses. International Board for Plant Genetic Resources (IBPGR), 83/90.

Weatherup, S.T.C., 1980: Statistical Procedures for Distinctness, Uniformity and Stability Trials. Journal of Agricultural Science, Cambridge, 94, pp. 31-46.

Zadoks, J.C., Chang, T.T., and Konzak, C.F., 1974: A decimal code for the growth stages of cereals. Weed Research 14: 415-421.

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

	Application date: (not to be filled in by the applicant)

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

1. Subject of the Technical Questionnaire

1.1.1	Botanical name	× *Festulolium* Asch. et Graebn.	☐
1.1.2	Common name	Festulolium	

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross [ ]

(please state parent variety)

(……..……..…) x (……..……..…)

female parent male parent

(b) partially known cross [ ]

(please state parent variety(ies))

(……..……..…) x (……..……..…)

female parent male parent

(c) unknown cross [ ]

4.1.2 Mutation
(please state parent variety)

4.1.3 Discovery and development
(please state where and when discovered and how developed)

4.1.4 Other
(Please provide details)

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties [ ]

4.2.2 Other
(Please provide details) [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

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

	Characteristics	Example Varieties	Note
5.1 (1)	**Ploidy**		
	diploid	Matrix	2 [ ]
	tetraploid	Betria, Perun	4 [ ]
	hexaploid	Felina, Mahulena	6 [ ]
5.2 (9)	**Plant: time of inflorescence emergence**		
	very early		1 [ ]
	very early to early		2 [ ]
	early	Achilles, Lukida	3 [ ]
	early to medium		4 [ ]
	medium	Perun	5 [ ]
	medium to late		6 [ ]
	late	Betria	7 [ ]
	late to very late		8 [ ]
	very late		9 [ ]
5.3 (14)	**Stem: length**		
	very short		1 [ ]
	very short to short		2 [ ]
	short	Matrix	3 [ ]
	short to medium		4 [ ]
	medium	Felopa, Sulino	5 [ ]
	medium to long		6 [ ]
	long	Felina, Naos	7 [ ]
	long to very long		8 [ ]
	very long		9 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the **similar** variety(ies)	Describe the expression of the characteristic(s) for **your** candidate variety
Example	*Plant: time of inflorescence emergence*	*early*	*medium*

Comments

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

#7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [ ] No [ ]

(If yes, please provide details)

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

Main use:

(a) forage [ ]
(b) amenity [ ]
(c) other (please provide details) [ ]

Parental species:

Please state initial parental species (*Lolium* sp., *Festuca* sp.) of the variety.

.....

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

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 (b) is yes, please attach a copy of the authorization.

9. Information on plant material to be examined or submitted for examination

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a) Microorganisms (e.g. virus, bacteria, phytoplasma) Yes [ ] No [ ]

(b) Chemical treatment (e.g. growth retardant, pesticide) Yes [ ] No [ ]

(c) Tissue culture Yes [ ] No [ ]

(d) Other factors Yes [ ] No [ ]

Please provide details for where you have indicated “yes”.

_____

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes [ ]

(please provide details as specified by the Authority)

No [ ]

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant’s name

Signature Date

[End of document]