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# INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

**FESTULOLIUM** *

UPOV Code(s): FESTL

× *Festulolium* Asch. et Graebn.

## GUIDELINES

## FOR THE CONDUCT OF TESTS

## FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by an expert from Czech Republic*

*to be considered by the*

*Technical Working Party for Agricultural Crops at its fifty-fourth session,*
*to be held in Arusha, United Republic of Tanzania, from 2025-05-19 to 2025-05-22*

*Disclaimer: this document does not represent UPOV policies or guidance*

Alternative Names:*

| *Botanical name* | *English* | *French* | *German* | *Spanish* |
|---|---|---|---|---|
| ×*Festulolium* Asch. et Graebn.,<br>×*Schedololium* Soreng & Terrell,<br>×*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. (to all varieties of hybrids resulting from the crossing of a species of the genus *Festuca* L. with species of the genus *Lolium* L.).

## 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 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 Spaced plants: Each test should be designed to result in a total of at least 60 plants, which should be divided between at least 2 replicates.

3.4.2 Row plots: Each test should be designed to result in a total of at least 8 meters, which should be divided between at least 2 replicates.

3.4.3 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.

3.4.4 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)-(x) See Explanations on the Table of Characteristics in Chapter 8.1

7 Growth stage key (if applicable) See Explanations on the Table of Characteristics in Chapter 8.3

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

| | | English | français | deutsch | español | Example Varieties<br>Exemples<br>Beispielssorten<br>Variedades ejemplo | Note/<br>Nota |
|---|---|---|---|---|---|---|---|
| **1.** | **(*)** | **QL MG\|C** | **(+)** | | | | |
| | | **Ploidy** | | | | | |
| | | diploid | | | | Matrix | 2 |
| | | tetraploid | | | | Betria, Perun | 4 |
| | | hexaploid | | | | Felina, Mahulena | 6 |
| **2.** | | **QN VG\|B/VS\|A** | **(a)** | **20-29** | | | |
| | | **Plant: growth habit<br>without vernalization** | | | | | |
| | | erect | | | | | 1 |
| | | erect to semi-erect | | | | | 2 |
| | | semi-erect | | | | | 3 |
| | | semi-erect to intermediate | | | | | 4 |
| | | intermediate | | | | Lofa | 5 |
| | | intermediate to semi-prostrate | | | | | 6 |
| | | semi-prostrate | | | | Merlin, Sulino | 7 |
| | | semi-prostrate to prostrate | | | | | 8 |
| | | prostrate | | | | | 9 |
| **3.** | | **QN VG\|B/VS\|A** | **(+)** | | | | |
| | | **Plant: tendency to form inflorescences<br>without vernalization** | | | | | |
| | | absent or very weak | | | | Perun | 1 |
| | | very weak to weak | | | | | 2 |
| | | weak | | | | Achilles | 3 |
| | | weak to medium | | | | | 4 |
| | | medium | | | | Aberniche, Sabik | 5 |
| | | medium to strong | | | | | 6 |
| | | strong | | | | Hemsut | 7 |
| | | strong to very strong | | | | | 8 |
| | | very strong | | | | | 9 |

| | | English | | français | | deutsch | español | Example Varieties<br>Exemples<br>Beispielssorten<br>Variedades ejemplo | Note/<br>Nota |
|---|---|---|---|---|---|---|---|---|---|
| **4.** | | **QN** | **MS\|A/VG\|B** | | | **20-29** | | | |
| | | **PROPOSED TO BE DELETED Leaf: length <u>without vernalization</u>** | | | | | | | |
| | | very short | | | | | | | 1 |
| | | very short to short | | | | | | | 2 |
| | | short | | | | | | Aberroot | 3 |
| | | short to medium | | | | | | | 4 |
| | | medium | | | | | | Betria | 5 |
| | | medium to long | | | | | | | 6 |
| | | long | | | | | | Perun | 7 |
| | | long to very long | | | | | | | 8 |
| | | very long | | | | | | | 9 |
| **5.** | | **QN** | **MS\|A/VG\|B/VS\|A** | | | **20-29** | | | |
| | | **Leaf: width <u>without vernalization</u>** | | | | | | | |
| | | very narrow | | | | | | | 1 |
| | | very narrow to narrow | | | | | | | 2 |
| | | narrow | | | | | | Aberroot | 3 |
| | | narrow to medium | | | | | | | 4 |
| | | medium | | | | | | Betria | 5 |
| | | medium to broad | | | | | | | 6 |
| | | broad | | | | | | Felopa, Festum | 7 |
| | | broad to very broad | | | | | | | 8 |
| | | very broad | | | | | | | 9 |
| **6.** | | **QN** | **VG\|B/VS\|A** | | **(a)** | **30-39** | | | |
| | | **Plant: growth habit <u>after vernalization</u>** | | | | | | | |
| | | erect | | | | | | | 1 |
| | | erect to semi-erect | | | | | | | 2 |
| | | semi-erect | | | | | | | 3 |
| | | semi-erect to intermediate | | | | | | | 4 |
| | | intermediate | | | | | | Lofa, Mahulena | 5 |
| | | intermediate to semi-prostrate | | | | | | | 6 |
| | | semi-prostrate | | | | | | Merlin | 7 |
| | | semi-prostrate to prostrate | | | | | | | 8 |
| | | prostrate | | | | | | | 9 |

| | | English | français | deutsch | español | Example Varieties<br>Exemples<br>Beispielssorten<br>Variedades ejemplo | Note/<br>Nota |
|---|---|---|---|---|---|---|---|
| **7.** | | **QN MS\|A/VS\|A** | **(+)** | **30** | | | |
| | | **PROPOSED TO BE DELETED Plant: width <u>after vernalization</u>** | | | | | |
| | | very narrow | | | | | 1 |
| | | very narrow to narrow | | | | | 2 |
| | | narrow | | | | Matrix | 3 |
| | | narrow to medium | | | | | 4 |
| | | medium | | | | Festum, Sulino | 5 |
| | | medium to broad | | | | | 6 |
| | | broad | | | | Mahulena, Perun | 7 |
| | | broad to very broad | | | | | 8 |
| | | very broad | | | | | 9 |
| **8.** | | **QN MG\|B/MS\|A/VG\|B** | | **30-39** | | | |
| | | **Plant: natural height <u>after vernalization</u>** | | | | | |
| | | very short | | | | | 1 |
| | | very short to short | | | | | 2 |
| | | short | | | | Matrix | 3 |
| | | short to medium | | | | | 4 |
| | | medium | | | | Perun | 5 |
| | | medium to tall | | | | | 6 |
| | | tall | | | | Naos | 7 |
| | | tall to very tall | | | | | 8 |
| | | very tall | | | | | 9 |
| **9.** | **(*)** | **QN MG\|B/MS\|A** | **(+)** | | | | |
| | | **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 |

| | | English | français | deutsch | español | Example Varieties<br>Exemples<br>Beispielssorten<br>Variedades ejemplo | Note/<br>Nota |
|---|---|---|---|---|---|---|---|
| **10.** | | **QN MS\|A** | **(+)** | **50** | | | |
| | | **Plant: natural height <u>at inflorescence emergence</u>** | | | | | |
| | | very short | | | | | 1 |
| | | very short to short | | | | | 2 |
| | | short | | | | Matrix | 3 |
| | | short to medium | | | | | 4 |
| | | medium | | | | Perun | 5 |
| | | medium to tall | | | | | 6 |
| | | tall | | | | Felina, Naos | 7 |
| | | tall to very tall | | | | | 8 |
| | | very tall | | | | | 9 |
| **11.** | | **QN VG\|B/VS\|A** | **(a)** | **50-52** | | | |
| | | **Plant: growth habit <u>at inflorescence emergence</u>** | | | | | |
| | | erect | | | | Felina | 1 |
| | | erect to semi-erect | | | | | 2 |
| | | semi-erect | | | | Achilles, Becva | 3 |
| | | semi-erect to intermediate | | | | | 4 |
| | | intermediate | | | | Fojtan | 5 |
| | | intermediate to semi-prostrate | | | | | 6 |
| | | semi-prostrate | | | | | 7 |
| | | semi-prostrate to prostrate | | | | | 8 |
| | | prostrate | | | | | 9 |
| **12.** | **(*)** | **QN MS\|A** | **(+)** | **(b)** **50-56** | | | |
| | | **Flag leaf: length** | | | | | |
| | | very short | | | | | 1 |
| | | very short to short | | | | | 2 |
| | | short | | | | | 3 |
| | | short to medium | | | | | 4 |
| | | medium | | | | Felopa, Sulino | 5 |
| | | medium to long | | | | | 6 |
| | | long | | | | Naos, Perun | 7 |
| | | long to very long | | | | | 8 |
| | | very long | | | | | 9 |

| | | English | français | deutsch | español | Example Varieties<br>Exemples<br>Beispielssorten<br>Variedades ejemplo | Note/<br>Nota |
|---|---|---|---|---|---|---|---|
| **13.** | **(*)** | **QN MS\|A** | **(+) (b)** | **50-56** | | | |
| | | **Flag leaf: width** | | | | | |
| | | very narrow | | | | | 1 |
| | | very narrow to narrow | | | | | 2 |
| | | narrow | | | | | 3 |
| | | narrow to medium | | | | | 4 |
| | | medium | | | | Lofa, Mahulena | 5 |
| | | medium to broad | | | | | 6 |
| | | broad | | | | Naos, Perun | 7 |
| | | broad to very broad | | | | | 8 |
| | | very broad | | | | | 9 |
| **14.** | **(*)** | **QN MS\|A** | **(+) (c)** | **60-68** | | | |
| | | **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 |
| **15.** | | **QN MS\|A** | **(+) (c)** | **60-68** | | | |
| | | **Stem: length of upper internode** | | | | | |
| | | 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 |

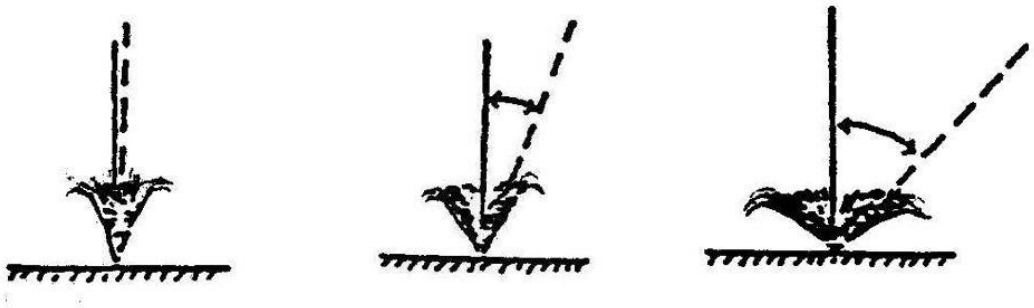
| | English | français | deutsch | español | Example Varieties<br>Exemples<br>Beispielssorten<br>Variedades ejemplo | Note/<br>Nota |
|---|---|---|---|---|---|---|
| **16.** | **QN MS\|A** | **(+) (c)** | **60-68** | | | |
| | **Inflorescence: length** | | | | | |
| | very short | | | | | 1 |
| | very short to short | | | | | 2 |
| | short | | | | Diagram | 3 |
| | short to medium | | | | | 4 |
| | medium | | | | Felina, Merlin | 5 |
| | medium to long | | | | | 6 |
| | long | | | | Lofa, Perun | 7 |
| | long to very long | | | | | 8 |
| | very long | | | | | 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) Observations should be made 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.



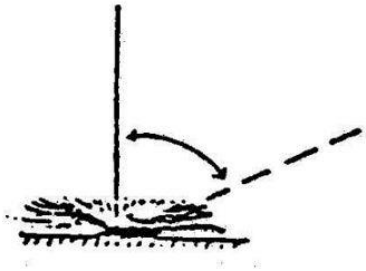
1 erect



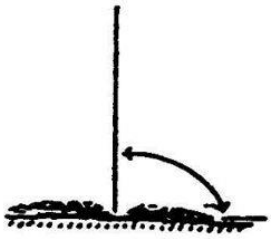
3 semi-erect



5 intermediate



7 semi-prostrate



9 prostrate

(b) The flag leaf is the first leaf below the inflorescence.
Length and width should be measured on the same leaf.

(c) 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

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

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

Spaced plants or row plots should be observed at least twice per week.

Plots with spaced plants

The date of inflorescence emergence of each single plant should be observed. A plant is considered to have headed when the tip of three inflorescences can be seen protruding from the flag leaf sheath (Growth Stage DC 50).

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:

| | | |
|---|---|---|
| (1) | DC 50 | First spikelet of inflorescence just visible |
| (2) | DC 52 | 25% of the inflorescence emerged (across all stems) |
| (3) | DC 54 | 50% of the inflorescence emerged (across all stems) |
| (4) | DC 56 | 75% of the inflorescence emerged (across all stems) |

Ad. 10: Plant: natural height at inflorescence emergence

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

Ad. 12: Flag leaf: length

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

Ad. 13: Flag leaf: width

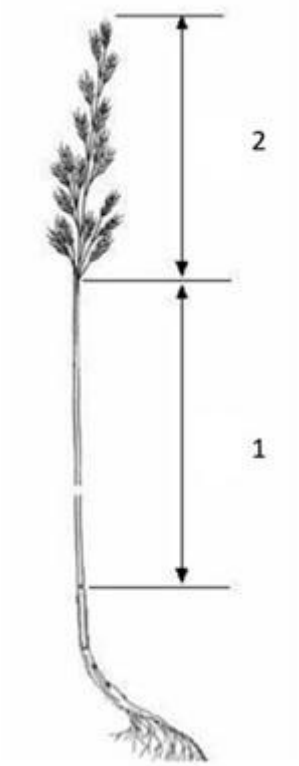
Observations should be made at the widest point of the leaf blade.

Ad. 14: Stem: length

Observations should be made from ground level, inflorescence included.

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 Additional Explanations on the Table of Characteristics*

Growth stages of grasses derived from the decimal code for the growth stages of cereals (Zadoks, et al., 1974).

All characteristics should be recorded at the appropriate time for the plant concerned.
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 First 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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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:<br>(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) | |

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

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

(a) Other (please provide details) [ ]

4.2.2 Vegetative propagation

(a) Other (state method) [ ]

4.2.3 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]