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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

COCKSFOOT *

UPOV Code(s): DCTLS_GLO

Dactylis glomerata L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Dactylis glomerata L.	Cocksfoot, Orchard Grass	Dactyle	Knaulgras	Dactilo, Pasto ovillo

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 *Dactylis glomerata* 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 seeds.

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

500 grams of seed.

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 Spaced plants: Each test should be designed to result in at least 60 plants, which should be divided between at least two replicates.

3.4.2 The test may include 8 meters of row plot which should be divided between at least two replicates. The sowing density should be such that around 200 plants per meter can be expected.

3.4.3 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 spaced plants
B row plots
C special test

7. Table of Characteristics/Tableau des caractères/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	Barmedal	2
	tetraploid	tétraploïde	tetraploid	tetraploide	Beluga	4
2. QN VG|B			**20-29**			
	Leaf: width	**Feuille: largeur**	**Blatt: Breite**	**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	Barmedal	3
	narrow to medium	étroite à moyenne	schmal bis mittel	estrecha a media		4
	medium	moyenne	mittel	media	Galibier	5
	medium to broad	moyenne à large	mittel bis breit	de media a ancha		6
	broad	large	breit	ancha	Oberweihst, Paykar	7
	broad to very broad	large à très large	breit bis sehr breit	de ancha a muy ancha		8
	very broad	très large	sehr breit	muy ancha		9
3. QN VG|B/VS|A		**(+)**				
	Plant: tendency to form inflorescences <u>without vernalization</u>	**Plante: tendance à former des inflorescences <u>sans vernalisation</u>**	**Pflanze: Neigung zur Bildung von Blütenständen <u>ohne Vernalisation</u>**	**Planta: tendencia a formar inflorescencias <u>sin vernalización</u>**		
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	RGT Beverly	1
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil		2
	weak	faible	gering	débil	Barmedal, Oberweihst	3
	weak to medium	faible à moyenne	gering bis mittel	débil a media		4
	medium	moyenne	mittel	media	Bartyle	5
	medium to strong	moyenne à forte	mittel bis stark	media a fuerte		6
	strong	forte	stark	fuerte	Bacchus, Inia le Oberon	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 VG|B/VS|A**	**(a)**	**20-29**			
	Plant: growth habit <u>without vernalization</u>	**Plante: port <u>sans vernalisation</u>**	**Pflanze: Wuchsform <u>ohne Vernalisation</u>**	**Planta: hábito de crecimiento <u>sin vernalización</u>**		
	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	Bacchus	3
	semi-erect to intermediate	demi-dressé à intermédiaire	halbaufrecht bis mittel	de semierecto a intermedio		4
	intermediate	intermédiaire	mittel	intermedio	Beluga	5
	intermediate to semi-prostrate	intermédiaire à demi-étalé	mittel bis halbliegend	intermedio a semipostrado		6
	semi-prostrate	demi-étalé	halbliegend	semipostrado	Bargère, Priekulu 30	7
	semi-prostrate to prostrate	demi-étalé à étalé	halbliegend bis liegend	semipostrado a postrado		8
	prostrate	étalé	liegend	postrado	Laban	9
5.	**QN MS|A/VG|B**		**20-29**			
	Plant: natural height <u>without vernalization</u>	**Plante: hauteur naturelle <u>sans vernalisation</u>**	**Pflanze: natürliche Höhe <u>ohne Vernalisation</u>**	**Planta: altura natural <u>sin vernalización</u>**		
	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	Oberweihst	3
	short to medium	basse à moyenne	niedrig bis mittel	baja a media		4
	medium	moyenne	mittel	media	Barmedal	5
	medium to tall	moyenne à haute	mittel bis hoch	de media a alta		6
	tall	haute	hoch	alta	Bolide	7
	tall to very tall	haute à très haute	hoch bis sehr hoch	de 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
6.	**QN VG|B/VS|A**		**20-29**			
	Leaf: green color without vernalization	**Feuilles: couleur verte sans vernalisation**	**Blatt: Grünfärbung ohne Vernalisation**	**Hoja: color verde sin vernalización**		
	very light	très claire	sehr hell	muy clara		1
	very light to light	très claire à claire	sehr hell bis hell	muy clara a clara		2
	light	claire	hell	clara	Bacchus, Mobite	3
	light to medium	claire à moyenne	hell bis mittel	clara a media		4
	medium	moyenne	mittel	media	Bargère	5
	medium to dark	moyenne à foncée	mittel bis dunkel	de media a oscura		6
	dark	foncée	dunkel	oscuro	Lupré	7
	dark to very dark	foncée à très foncée	dunkel bis sehr dunkel	oscura a muy oscura		8
	very dark	très foncée	sehr dunkel	muy oscura		9
7.	**QN VG|B/VS|A**	**(a)**	**30-39**			
	Plant: growth habit after vernalization	**Plante: port après vernalisation**	**Pflanze: Wuchsform nach Vernalisation**	**Planta: hábito de crecimiento tras la vernalización**		
	erect	dressé	aufrecht	erecto		1
	erect to semi-erect	dressé à demi-dressé	aufrecht bis halbaufrecht	de erecto a semierecto		2
	semi-erect	demi-dressé	halbaufrecht	semierecto	Lucharm	3
	semi-erect to intermediate	demi-dressé à intermédiaire	halbaufrecht bis mittel	de erecto a intermedio		4
	intermediate	intermédiaire	mittel	intermedio		5
	intermediate to semi-prostrate	intermédiaire à demi- étalé	mittel bis halbliegend	intermedio a semipostrado		6
	semi-prostrate	demi-étalé	halbliegend	semipostrado	Ambassador	7
	semi-prostrate to prostrate	demi-étalé à étalé	halbliegend bis liegend	semipostrado a postrado		8
	prostrate	étalé	liegend	postrado	Laban	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
8.		**QN VG|B/VS|A**		**30-39**			
		Leaf: green color <u>after vernalization</u>	**Feuilles: couleur verte <u>après vernalisation</u>**	**Blatt: Grünfärbung <u>nach Vernalisation</u>**	**Hoja: color verde <u>tras la vernalización</u>**		
		very light	très claire	sehr hell	muy clara		1
		very light to light	très claire à claire	sehr hell bis hell	muy clara a clara		2
		light	claire	hell	clara	Bacchus, Mobite	3
		light to medium	claire à moyenne	hell bis mittel	clara a media		4
		medium	moyenne	mittel	media	Bargère, Beluga	5
		medium to dark	moyenne à foncée	mittel bis dunkel	de media a oscura		6
		dark	foncée	dunkel	oscuro	Lupré	7
		dark to very dark	foncée à très foncée	dunkel bis sehr dunkel	oscura a muy oscura		8
		very dark	très foncée	sehr dunkel	muy oscura		9
9.	**(*)**	**QN MG|B/MS|A**	**(+)**				
		Plant: time of inflorescence emergence	**Plante: époque d'épiaison**	**Pflanze: Zeitpunkt des Erscheinens der Blütenstände**	**Planta: época de 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	Anksta	3
		early to medium	précoce à moyenne	früh bis mittel	temprana a media		4
		medium	moyenne	mittel	media	Coffee, Priekulu 30	5
		medium to late	moyenne à tardive	mittel bis spät	de media a tardía		6
		late	tardive	spät	tardía	Beluga	7
		late to very late	tardive à très tardive	spat bis sehr spät	de tardía a muy tardía		8
		very late	très tardive	sehr spät	muy tardía	Lumix	9
10.		**QN MS|A**		**50-56**			
		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>a la emergencia de la inflorescencia</u>**		
		very short	très basse	sehr niedrig	muy baja	Barmedal	1
		very short to short	très basse à basse	sehr niedrig bis niedrig	muy baja a baja		2
		short	basse	niedrig	baja	Musketier, Paykar	3
		short to medium	basse à moyenne	niedrig bis mittel	baja a media		4
		medium	moyenne	mittel	media	Safin	5
		medium to tall	moyenne à haute	mittel bis hoch	de media a alta		6
		tall	haute	hoch	alta	Galibier	7
		tall to very tall	haute à très haute	hoch bis sehr hoch	de alta a muy alta		8
		very tall	très haute	sehr hoch	muy alta	Tardi	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.		**QN VS|A**	**(a)**	**50-56**			
		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>a la emergencia de la inflorescencia</u>**		
		erect	dressé	aufrecht	erecto		1
		erect to semi erect	dressé à demi-dressé	aufrecht bis halbaufrecht	de erecto a semierecto		2
		semi erect	demi-dressé	halbaufrecht	semierecto	Ambassador, Beluga	3
		semi erect to intermediate	demi-dressé à intermédiaire	halbaufrecht bis mittel	de erecto a intermedio		4
		intermediate	intermédiaire	mittel	intermedio	Priekulu 30	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**	**(+)** **(b)**	**50-58**			
		Flag leaf: length	**Dernière feuille: longueur**	**Fahnenblatt: Länge**	**Última 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	Musketier	3
		short to medium	courte à moyenne	kurz bis mittel	corta a media		4
		medium	moyenne	mittel	media	Oberweihst	5
		medium to long	moyenne à longue	mittel bis lang	media a larga		6
		long	longue	lang	larga	Opina	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**	**(+) (b)**	**50-58**			
	Flag leaf: width	**Dernière feuille: largeur**	**Fahnenblatt: Breite**	**Última 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	Barmedal	3
	narrow to medium	étroite à moyenne	schmal bis mittel	estrecha a media		4
	medium	moyenne	mittel	media	Beluga	5
	medium to broad	moyenne à large	mittel bis breit	de media a ancha		6
	broad	large	breit	ancha	Opina	7
	broad to very broad	large à très large	breit bis sehr breit	de 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	Barmedal	1
	very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta		2
	short	courte	kurz	corta	Safin, Toscali	3
	short to medium	courte à moyenne	kurz bis mittel	corta a media		4
	medium	moyenne	mittel	media	Dragoner	5
	medium to long	moyenne à longue	mittel bis lang	media a larga		6
	long	longue	lang	larga	Galibier	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 entrenœud**	**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	Bacchus, Safin	3
	short to medium	courte à moyenne	kurz bis mittel	corta a media		4
	medium	moyenne	mittel	media	Dragoner	5
	medium to long	moyenne à longue	mittel bis lang	media a larga		6
	long	longue	lang	larga	Paykar	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	Bacchus	1
	very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta		2
	short	courte	kurz	corta	Dragoner, Safin	3
	short to medium	courte à moyenne	kurz bis mittel	corta a media		4
	medium	moyenne	mittel	media	Oberweihst, RGT Beverly	5
	medium to long	moyenne à longue	mittel bis lang	media a larga		6
	long	longue	lang	larga		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

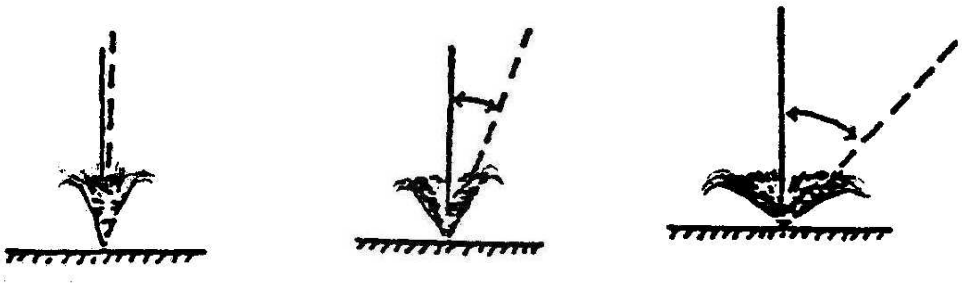
8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

(a) Growth habit

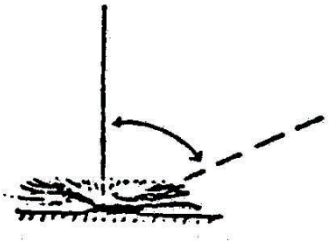
Observations should be made visually from the attitude of the leaves of the plant as a whole. The angle formed by the imaginary line through the region of greatest leaf density and the vertical should be used.



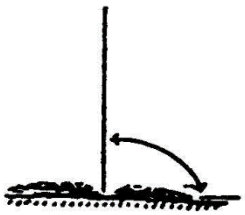
1
erect

3
semi-erect

5
intermediate



7
semi-prostrate



9
prostrate

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

8.2 Explanations for individual characteristics

Ad. 1: Ploidy

Ploidy should be assessed 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. 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. 9: Plant: time of inflorescence emergence

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

A: Plots with spaced plants
A single plant is considered to have reached time of inflorescence emergence when the tip of three inflorescences can be seen protruding from the flag leaf sheath (Growth Stage DC 50).

B: Row plots
Time of inflorescence emergence is reached when the average plot stage 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. 12: Flag leaf: length

The flag leaf is the first leaf below the inflorescence. Length and width should be measured on the same leaf.
Length should be measured from the tip of the leaf blade to the leaf sheath.
Width should be measured at the widest point of the leaf blade.

Ad. 13: Flag leaf: width

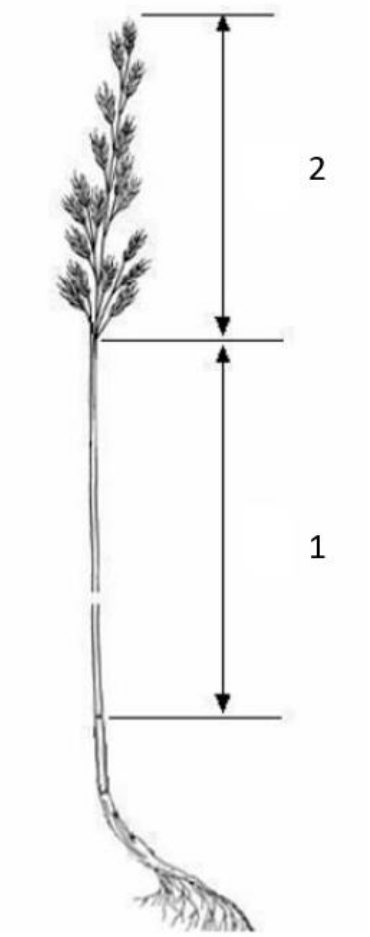
See Ad. 12

Ad. 14: Stem: length

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

Ad. 15: Stem: length of upper internode

Char. 15: 1 = The part of the stem above the top node up to the beginning of the inflorescence is the upper internode.
Char. 16: 2 = Length of the inflorescence.



Ad. 16: Inflorescence: length

See Ad. 15

8.3 Explanations on 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 or 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

Meier, U., 2001: Growth stages of mono- and dicotyledonous plants. BBCH-Monograph, German Federal Biological Research Centre for Agriculture and Forestry.

Zadoks, J. C., Chang, T. T. and Konzak, C. F., 1974: A decimal code for the growth stages of cereals. Weed Research, 14: pp. 415 to 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	Botanical name	*Dactylis glomerata* L.
1.2	Common name	Cocksfoot, Orchard Grass

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 known 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) Cross-pollination [ ]
(i) Population [ ]
(ii) Synthetic variety [ ]
(b) Other (please provide details) [ ]

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	Barmedal	2 [ ]
	tetraploid	Beluga	4 [ ]
5.2 (9)	**Plant: time of inflorescence emergence**		
	very early		1 [ ]
	very early to early		2 [ ]
	early	Anksta	3 [ ]
	early to medium		4 [ ]
	medium	Coffee, Priekulu 30	5 [ ]
	medium to late		6 [ ]
	late	Beluga	7 [ ]
	late to very late		8 [ ]
	very late	Lumix	9 [ ]
5.3 (14)	**Stem: length**		
	very short	Barmedal	1 [ ]
	very short to short		2 [ ]
	short	Safin, Toscali	3 [ ]
	short to medium		4 [ ]
	medium	Dragoner	5 [ ]
	medium to long		6 [ ]
	long	Galibier	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

- Resistance to pests and diseases

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”.

.....

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]