

Technical Working Party for Agricultural Crops

TWA/51/5

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PARTIAL REVISION OF THE TEST GUIDELINES FOR RYE

Document prepared by an expert from Germany

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1. The purpose of this document is to present a proposal for a partial revision of the Test Guidelines for Rye (document TG/58/7).
2. The Technical Working Party for Agricultural Crops (TWA), at its fiftieth session hosted by the United Republic of Tanzania and organized via electronic means, from June 21 to 25, 2021, agreed that the Test Guidelines for Rye (*Secale cereale* L.) (document TG/58/7) be partially revised (see document TWA/50/9 "Report", Annex IV).
3. The following changes are proposed:
 - (a) Addition of "C: Special test" in section 3.3.3;
 - (b) Addition of guidance for the use of a pre-screening system on the basis of the parental lines for the assessment of distinctness of hybrids in section 4.1.1 (ASW 7(a))
 - (c) Addition of uniformity standard for a sample size of 60 or 100 plants in section 4.2.4;
 - (d) Amendment of the type of plot for characteristic 1 to 6: observation in special test C instead of spaced plants A;
 - (e) Amendment of the methods of observation for characteristic 7, 8, 12, 13 and 18 by adding observation on spaced plants A;
 - (f) Amendment of section 8.1 (a) to indicate that the test should be designed to result in a total of 60 plants.
 - (g) Improvement of Ad. 13 in order to clarify that the density of hairs should be observed, not the distribution.
4. The proposed changes are presented below in highlight and underline (insertion) and ~~strikethrough~~ (deletion).

Proposed changes to section 3.3.3*Current wording*

- 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: Single spaced plants
B: Drilled plots

Proposed new wording

- 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: Single spaced plants
B: Drilled plots
C: Special test

Proposed changes to section 4.1.1

Current wording

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.

Proposed new wording

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.

To assess distinctness of hybrids, the parent lines and the formula may be used according to the following recommendations:

(i) description of parent lines according to the Test Guidelines;

(ii) check of the originality of the parent lines in comparison with the variety collection, based on the characteristics in Chapter 7, in order to identify similar parent lines;

(iii) check of the originality of the hybrid formula in relation to the hybrids in the variety collection, taking into account the most similar lines; and

(iv) assessment of the distinctness at the hybrid level for varieties with a similar formula.

Further guidance is provided in documents TGP/9 "Examining Distinctness" and TGP/8 "Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability".

Proposed changes to section 4.2.4

Current wording

4.2.4 For the assessment of uniformity of inbred lines and single crosses from inbred lines, a population standard of 0.5% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 600 plants, 6 off-types are allowed.

Proposed new wording

4.2.4 For the assessment of uniformity of inbred lines and single crosses from inbred lines, the following standards should be applied:

For the assessment of uniformity in a sample of 600 plants, a population standard of 0.5% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 600 plants, 6 off-types are allowed.

For the assessment of uniformity in a sample of 60 or 100 plants or parts of plants, a population standard of 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 60 plants, 3 off-types are allowed. In the case of a sample size of 100 plants, 5 off-types are allowed.

Proposed changes to section 6.5 Legend

Current wording

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) 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 Observation on single spaced plants
 B Observation on drilled plots

The example varieties are indicated as follows:

- (s) spring rye
 (w) winter rye

Proposed new wording

6.5 Legend

English		français		deutsch		español		Example Exemples Beispielssorten Variedades	Varieties ejemplo	Note/ Nota
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 MG, MS, VG, VS – see Chapter 4.1.5

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

6 (a) 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 Observation on single spaced plants~~

~~B Observation on drilled plots~~

~~A, B, C – see Chapter 3.3.3~~

The example varieties are indicated as follows:

(s) spring rye

(w) winter rye

Proposed changes to section 7. Table of Characteristics

- Amendment of the type of plot for characteristic 1 to 6: observation in special test C instead of spaced plants A;
- Amendment of the methods of observation for characteristic 7, 8, 12, 13 and 18 by adding observation on spaced plants A;

				<i>Current wording</i>	<i>Proposed new wording</i>
1.	(*)	QL	Grain: intensity of color of aleurone layer	VG A	VG A <u>VG C</u>
2.		QN	Grain: coloration with phenol	VG A	VG A <u>VG C</u>
3.	(*)	QN	Coleoptile: anthocyanin coloration	VG A	VG A <u>VG C</u>
4.		QN	Coleoptile: length	MS A	MS A <u>MS C</u>
5.		QN	First leaf: length of sheath	MS A	MS A <u>MS C</u>
6.		QN	First leaf: length of blade	MS A	MS A <u>MS C</u>
7.	(*)	QN	Plant: growth habit	VG B/VS A	<u>VG A</u> /VG B/VS A
8.	(*)	QN	Time of ear emergence	MG B/MS A	<u>MG A</u> /MG B/MS A
9.	(*)	QN	Flag leaf: glaucosity of sheath	VG B	VG B
10.		QN	Penultimate leaf: length of blade	MS A	MS A
11.		QN	Penultimate leaf: width of blade	MS A	MS A
12.	(*)	QN	Ear: glaucosity	VG B/VS A	<u>VG A</u> /VG B/VS A
13.	(*)	QN	Stem: density of hairs below ear	VG B/VS A	<u>VG A</u> /VG B/VS A
14.	(*)	QN	Plant: length	MS A	MS A
15.		QN	Stem: length between upper node and ear	MS A	MS A
16.	(*)	QN	Ear: length	MS A	MS A
17.	(*)	QN	Ear: density	MS A	MS A
18.		QN	Ear: attitude	VG B/VS A	<u>VG A</u> /VG B/VS A
19.	(*)	QN	Grain: thousand grain weight	MG	MG
20.	(*)	QN	Grain: length	MG	MG
21.	(*)	PQ	Seasonal type	VG	VG

Proposed changes to section 8.1 Explanations covering several characteristics*Current wording***8.1 Explanations covering several characteristics**

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

- (a) 3 x 24 seeds are sown in multipot plates with standard soil in 1 cm sowing depth. The plants are produced in the greenhouse at 20 °C and with additional light for 12 hours per day for 12 days. 20 plants per replicate are measured.

*Proposed new wording***8.1 Explanations covering several characteristics**

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

- (a) ~~3 x 24 seeds~~ **Seeds** are sown in multipot plates with standard soil in 1 cm sowing depth. The plants are produced in the greenhouse at 20 °C and with additional light for 12 hours per day for 12 days. ~~20 plants per replicate are measured.~~ **The test should result in a total of at least 60 plants.**

Proposed changes to Ad. 8: Time of ear emergence*Current wording*Ad. 8: Time of ear emergence

Open pollinated varieties, hybrid varieties and synthetic varieties (MS/A): The number of plants which have reached growth stage 52 should be recorded at two-day intervals. From this data, the average time of ear emergence of the variety should be calculated.

Inbred lines and single crosses from inbred lines (MG/B): Time of ear emergence is reached when 50% of the plants have reached growth stage 52.

*Proposed new wording*Ad. 8: Time of ear emergence

Open pollinated varieties, hybrid varieties and synthetic varieties (MS/A MS|A): The number of plants which have reached growth stage 52 should be recorded at two-day intervals. From this data, the average time of ear emergence of the variety should be calculated.

Inbred lines and single crosses from inbred lines (MG/B MG|A/MG|B): Time of ear emergence is reached when 50% of the plants have reached growth stage 52.

Proposed changes to Ad. 13: Stem: density of hairs below ear

Current wording

Ad. 13: Stem: density of hairs below ear



1
absent or
very sparse



3
sparse



5
medium



7
dense



9
very dense

Proposed new wording

Ad. 13: Stem: density of hairs below ear



1
absent or
very sparse



3
sparse



5
medium



7
dense



9
very dense

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