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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

UNION INTERNATIONALE POUR LA PROTECTION DES OBTENTIONS VÉGÉTALES

INTERNATIONALER VERBAND ZUM SCHUTZ VON PFLANZEN-ZÜCHTUNGEN

UNIÓN INTERNACIONAL PARA LA PROTECCIÓN DE LAS OBTENCIONES VEGETALES

DRAFT

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

RESCUE GRASS,
ALASKA BROME-GRASS

(*Bromus catharticus* Vahl.,
***Bromus sitchensis* Trin.,**
***Bromus auleticus* Trin.)**

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

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I. Subject of these Guidelines

These Test Guidelines apply to Rescue Grass (*Bromus catharticus* Vahl.), Alaska Brome-grass (*Bromus sitchensis* Trin.) and *Bromus auleticus* Trin. A single combined Table of Characteristics has been drawn up for the three species.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. The minimum quantity of seed to be supplied by the applicant in one or several samples should be:

3 kg. (awns removed)

The seed should at least meet the minimum requirements for germination capacity, moisture content and purity for marketing certified seed in the country in which the application is made. Especially for storage, which requires a higher standard, the applicant should state the actual germination capacity which should be as high as possible.

2. The seed must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

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

2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measuring and counting without prejudice to the observations which must be made up to the end of the growing period. Each test should include 60 spaced plants and at least 10 meters of row plots. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Plots with spaced plants. Each test should consist of 60 single spaced plants for varieties arranged in 3 replicates or more replicates.

5. Row plots. Each test should consist of at least 10 meters of row arranged in 2 or more replicates. The density of sowing should be such that about 160 to 200 plants per linear meter can be expected.

6. Additional tests for special purposes may be established.

IV. Methods and Observations

1. Unless otherwise stated, all observations on spaced plants should be made on 60 plants or parts taken from each of 60 plants.

2. Observations on rows should be made on each plot as a whole.

3. Where observations are also made in row plots, it is likely that the expression of the characteristic and its method of recording be different from the single spaced plants, as plants cannot be examined as discrete units.

4. Interpretation of results should be made according to the rules of cross-pollinated varieties as stated in the General Introduction to the Test Guidelines.

V. Grouping of Varieties

1. If necessary the collection to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety and which in their various states are fairly evenly distributed within the collection.

2. Species would be identified with the help of ploidy and seed shape.

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used. For each characteristic it is indicated whether ‘spaced plants’ (A) or ‘row plots’ (B) or ‘special tests’ (C) should be used. The name of each example variety is followed by an abbreviation of its species (Bc = *Bromus catharticus* Vahl., Bs = *Bromus sitchensis* Trin., Ba = *Bromus auleticus* Trin.).

2. Notes (numbers), for purposes of electronic data processing, are given opposite the states of the different characteristics.

3. Legend:

(*) Characteristics that should be used on all varieties in every growing period over which the examinations are made and always be included in the variety description except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

(+) See Explanations on the Table of Characteristics in Chapter VIII.

1) To be observed on A = spaced plants
B = row plots
C = special tests

2) Species of example variety:
Bc = *Bromus catharticus* Calh. (*Bromus willdenowii* Kunth)
Bs = *Bromus sitchensis* Trin.
Ba = *Bromus auleticus* Trin.

VIII. Explanations and Methods

Ad. 1: Seedling: anthocyanin coloration of sheath of first leaf

The plants should be grown in the glasshouse. The anthocyanin coloration should be observed at stage one or two leaves.

Ad. 2: Plant: tendency to form inflorescences in the year of sowing

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. 7: Plant: time of inflorescence emergence (in second year)

A. Plots with spaced plants

The date of inflorescence emergence of each single plant should be assessed. A single plant is considered to have headed when the tip of three inflorescences can be seen protruding from the flag leaf sheath. From the single plant data a mean date per plot and a mean date per variety is obtained.

B. Row Plots

At each observation date the average plot stage should be expressed in one of the following growth stages:

1) Boot swollen
2) Tip of inflorescence just visible
3) ¼ of inflorescence emerged
4) ½ of inflorescence emerged

The date of inflorescence emergence is the date at which the average plot stage 2 has been reached. This date should, if necessary, be obtained by interpolation.

Ad. 12: Stem: length of upper internode

The length should be measured, when the internode is fully expanded. The longest upper internode of each plant should be measured as the distance between the upper node and the basis of the inflorescence.

IX. Literature

Betin, M., Gillet M., Mansat P., 1983. Étude complémentaire sur le comportement de différentes espèces de bromes en France: Catharticus, sitchensis, carinatus, valdivianus. Fourrages. 96, 81-104

Hitchcock, A.S., 1935. Manual of grasses of the United States. Miscellaneous publications of the United States Department of Agriculture. 200, 31-56

Hubbard, C.E., 1967. Grasses 462, 62-89

Kerguelen, M., 1978. Différenciation des espèces de Brome. Communication personnelle, 2 pages

Mansat P. et Betin M., 1984. Intérêt des bromes pour la production fourragère en France. C.R. Acad. Agri. France. 70, (1), 75-83

X. Technical Questionnaire

		Reference Number (not to be filled in by the applicant)
TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights		
1. Species	*Bromus catharticus* Vahl. *Bromus sitchensis* Trin. *Bromus auleticus* Trin.	Rescue grass Alaska Brome-grass
2. Applicant (Name and address)		
3. Proposed denomination or breeder's reference		

4. Information on origin, maintenance and reproduction of the variety

4.1 Other information

4.2 Genetic origin and breeding method

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

	Characteristics	Example Varieties	Note
5.1 (4) B	**Leaf: intensity of green color (in autumn of year of sowing)**		
	light	Anabel (Bc), Lubro (Bs)	3[ ]
	medium	Banco (Bc)	5[ ]
	dark		7[ ]
5.2 (7) A B	**Plant: time of inflorescence emergence (in second year)**		
	early	Belgado (Bc)	3[ ]
	medium	Anabel (Bc)	5[ ]
	late	Lubro (Bs)	7[ ]
5.3 (11) A	**Stem: length of longest stem (inflorescence included; when fully expanded)**		
	short		3[ ]
	medium	Lubro (Bs)	5[ ]
	long	Bellegarde (Bc)	7[ ]

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different [o)]	State of expression of similar variety	State of expression of candidate variety

[o)] In the case of identical states of expressions of both varieties, please indicate the size of the difference.

7. Additional information which may help to distinguish the variety

7.1	Ploidy	hexaploid	*B. catharticus, B. auleticus*	6[ ]
		octoploid	*B. sitchensis*	8[ ]
7.2	Seed shape	rounded	*B. auleticus*	1[ ]
		flat	*B. catharticus, B. sitchensis*	2[ ]

7.3 Resistance to pests and diseases

7.4 Special conditions for the examination of the variety

7.5 Other information

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

If the answer to that question is yes, please attach a copy of such an authorization.

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