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TWA/27/13
ORIGINAL: English
DATE: April 23, 1998

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# INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

## TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS

## Twenty-Seventh Session
## Angers, France, June 23 to 26, 1998

WORKING PAPER ON DRAFT TEST GUIDELINES FOR TURNIP RAPE
(*Brassica Rapa L.*)

*Document prepared by experts from Finland*

TABLE OF CONTENTS PAGE

## I. Subject of these Guidelines

These guidelines apply to all varieties of *Brassica rapa* L. emend. Metzg. excluding varieties with swollen root.

## II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the seed 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:

200 g.

The seed should at least meet the minimum requirements for germination capacity, moisture content and purity for marketing standard seed in the country in which the application is made. The germination capacity should be as high as possible.

2. The plant material 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 similar growing periods.

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 field tests should be carried out under conditions ensuring normal growth. The distance between rows and between plants within the rows should be adjusted to enable observations on individual plants. The size of the plots should be such that plants or parts of the plants may be removed for measurements and counting without prejudice to the observations which must be made up to the end of the growing period. As a minimum, each test should include a total of:

1000 plants Fodder Turnip Rape and Autumn sown Oilseed Turnip Rape
1000 plants Spring sown Oilseed Turnip Rape

which should be divided between 2 or more replicates. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

## IV. Methods and Observations

1. Unless otherwise stated, in the case of plant-by-plant assessment of distinctness, uniformity and stability, all observations determined by measurements or counting should be made on 60 plants or parts of 60 plants.

2. For the assessment of uniformity relative uniformity standards should be applied.

3. In cases in which more than one seed submission is made, in the subsequent years of sowing a comparison should be made between the initial seed sample and any further seed submission.

4. Unless otherwise indicated, all observations on the foliage should be made on fully developed leaves (4th to 6th rosette leaf) which show no sign of senescence.

5. Unless otherwise indicated, all observations on siliquas should be made on the first fully developed siliqua from below on the main stem.

## V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characters which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within the variety. Their various states of expression should be fairly evenly distributed throughout the collection.

2. It is recommended that the competent authorities use the following characteristics for classifying varieties in 2 mutually exclusive groups:

1. Tendency to form inflorescences in year of sowing from spring sown trials.

2. Tendency to form inflorescences in year after sowing from autumn sown trials.

3. Within these groups, it is recommended that the competent authorities use the following characteristics for classifying varieties:

(a) Ploidy (characteristic 2)
(b) Time of flowering in year of sowing for spring sown trials (characteristic 20)
(c) Time of flowering in year after year of sowing for autumn sown trials (characteristic 22)
(d) Flower: color (characteristic 23)

## 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.

2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

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 descriptions, except when the state of expression of a preceding characteristics or regional environmental conditions render this impossible.

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

1) The optimum stage of development for the assessment of each characteristic is indicated by a number in the second column. The stages of development denoted by each number are described at the end of chapter VIII.

VIII. Explanations on the Table of Characteristics

See TG/37/7

Ad. 1: Seed: composition of fatty acids

The fatty acid profile may be used for distinctness of varieties. They should not be used as a routine characteristic but at the request or with the agreement of the applicant of the candidate variety.

Ad. 9.a: Leaf: frequency of plants with lobed leaves

absent or very low (1): plants with lobed leaves are absent or very few
low (3): about 1/4 of the plants with lobed leaves
medium (5): about ½ of the plants with lobed leaves
high (7): about 3/4 of the plants with lobed leaves
very high (9): all plants with lobed leaves

KEY FOR THE GROWTH STAGES, Spring sown varieties

| Key | General Description |
|---|---|
| 0 | Germination |
| 00 | Dry Seed |
| 10 | Seedling growth |
| 11 | Appearance of cotyledons |
| 13 | Cotyledons expanded |
| 15 | 1 leaf-stage |
| 17 | 2 leaf-stage |
| 19 | 3 leaf-stage |
| 20 | Rosette and stem elongation |
| 21 | 4 leaf-stage |
| 22 | 5 leaf-stage |
| 23 | 6 leaf-stage |
| 30 | Stem elongation begins |

| | |
|---|---|
| 50 | Bud formation |
| 51 | Terminal bud is present, not raised above leaves |
| 53 | Terminal bud is raised above level of leaves |
| 57 | Pedicels are elongating |
| 59 | Buds are yellowing |
| 60 | Flower |
| 61 | First open bud on terminal raceme |
| 62 | Few buds are open on terminal raceme |
| 64 | Full flower, lower siliques are elongating |
| 65 | Lower siliques are starting to fill |
| 67 | Seeds in lower siliques are enlarging, all buds are open |
| 70 | Siliqua |
| 71 | Seeds in lower siliques are in full size translucent |
| 75 | Seeds in lower siliques are green, opaque |
| 79 | All seeds of siliques on terminal raceme are dark green |
| 80 | Maturation |
| 81 | Seeds in lower siliques on terminal raceme show brown areas |
| 85 | Seeds in upper siliques show brown areas |
| 89 | Brown siliques are brittle, stems are dry |

X. Technical Questionnaire

| | |
|---|---|
| | Reference Number<br>(not to be filled in by the applicant) |
| | |

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

| | |
|---|---|
| 1. Species | *Brassica rapa* L. emend. Metzg. var. oleifera<br><br>TURNIP RAPE |
| 2. Applicant (Name and address) | |
| 3. Proposed denomination or breeder's reference | |

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

4.1 Genetic origin and breeding method

(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.

4.2 Type of variety

– winter oil seed type [ ]

– spring oil seed type [ ]

4.3 Other information

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 (2)** | **Ploidy** | | |
| | diploid | | 1[ ] |
| | tetraploid | | 9[ ] |
| **5.3 (20)** | **Time of flowering in year of sowing for spring sown trials** | | |
| | very early | | 1[ ] |
| | early | Kulta | 3[ ] |
| | medium | | 5[ ] |
| | late | | 7[ ] |
| | very late | | 9[ ] |
| **5.4 (22)** | **Time of flowering in year after year of sowing for autumn sown trials** | | |
| | very early | | 1[ ] |
| | early | | 3[ ] |
| | medium | | 5[ ] |
| | late | | 7[ ] |
| | very late | | 9[ ] |
| **5.2 (23)** | **Flower: color of petal** | | |
| | white yellow | | 1[ ] |
| | lemon yellow | | 2[ ] |
| | orange yellow | Kulta | 3[ ] |
| | orange | | 4[ ] |
| | brown | | 5[ ] |

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 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

7.3 Other information

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