MATTERS PERTAINING TO RULES FOR TESTING SEEDS

Ed Sundermeyer, SCST Representative to

AOSA Rules Committee

AOSA Rule Changes

The following rule changes were approved by the AOSA at their annual meeting in Des Moines, Iowa, on May 22. They will become effective October 1, 1980.

Change 1. Add kimpac to the list of media for soybeans and corn on pages 42 and 51 of the Rules.

Change 2. Delete the "4 times" rule (Section 12b) for tree and shrub seeds on page 117 of the Rules.

Change 3. Remove side oats grama and little bluestem from Section 2.7g(1), page 23 of the Rules, for a period of two years.

This, in effect, requires that both species must have endosperm present to be counted as pure seed.

In addition to the changes above, the Association adopted Tentative Rules for testing coated seeds.

A reprinting of the pages affected, including editorial changes and the Tentative Rules for coated seeds, will be undertaken and distributed later.

Anyone desiring more information about these changes may contact the AOSA Rules Committee Chairman, Rodger Danielson, at the Oregon State Seed Laboratory, Oregon State University, Corvallis, Oregon 97331, or call (503) 754-4464.

New Rules Proposal

A new proposal has been made to the Rules Committee by the Ryegrass Fluorescence Committee. It proposes the elimination of Section 3.5 of the present rules and substituting a new section as follows:

> 3.5 Fluorescence test of ryegrass--A fluorescence test may be made on samples of seed represented to be perennial ryegrass (Lolium perenne), annual ryegrass (L. multiflorum), or mixtures of the two species. The seedlings shall be grown on filter paper and the number of normal fluorescent seedlings determined under ultraviolet light during the germination period with a final count made at the end of the prescribed germination period. The number of fluorescent normal seedlings and the total number of normal seedlings shall be determined.[a] These numbers shall be used to calculate the percentages of fluorescence and nonfluorescence as follows:
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> $$\frac{\text{Number of fluorescent normal seedlings}}{\text{Total number of normal seedlings}} \times 100 = \% \text{ fluorescence}$$
>
> 100 - % fluorescence = % nonfluorescence.
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> Example: 360 normal seedlings were produced in a 400-seed test.
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> Eight of the normal seedlings were fluorescent.
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> Substituting we have $\frac{8}{360} \times 100 = 2.22\%$ fluorescence.
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> 100 - 2.22 = 97.78% nonfluorescence.

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[a]For description of method and apparatus for determining fluorescence in ryegrass, see article in AOSA Newsletter 37(3): 20-27. The formulae presented in the article should be disregarded.

Reasons for Proposed Change

Research indicates that there is not a close genetic linkage between the fluorescence character and annual or perennial behavior in ryegrass. Also, it has been observed that populations of ryegrass may contain intermediate types which cannot definitely be classified as either annual or perennial.

The fluorescence test as presently conducted arbitrarily designates certain seeds as annual and certain others as perennial. The seeds so designated may or may not be annual or perennial in accordance with that designation. Therefore, the results of the present fluorescence test may be inaccurate and misleading when they are used to determine the percentages of annual and perennial seeds in a seed sample. Consequently, it seems desirable to discontinue the use of the fluorescence test for that purpose.

It appears that the fluorescence test can be used validly to detect off-types in cultivars of annual or perennial ryegrass which breed true for the fluorescence characteristic. At present, however, information about the fluorescence characteristics of ryegrass varieties is incomplete, making it difficult to calculate with certainty the percentage of off-types in seed samples based on the percentage of fluorescent seedlings. Therefore, it seems desirable for seed analysts to determine the percentages of fluorescence and nonfluorescence and let others determine how they will use that information.

It is hoped that plant breeders, seed producers, and seed control officials in cooperation with seed analysts will be able to describe ryegrass varieties in respect to their fluorescence characteristics so that the results of the proposed new procedure for conducting fluorescence tests can be used in calculating the percentage of other crop seeds (seeds of plants grown as crops other than the kind or cultivar included in pure seed) in ryegrass varieties.

When there is need for determining the percentages of annual and perennial ryegrass seeds in a sample, it can probably be done more accurately by growth chamber or electrophoresis tests or by other tests yet to be developed than by the fluorescence test.

Anyone in SCST wishing to comment on these proposals, may do so either to me or to the AOSA Rules Committee Chairman.

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