

## STANDARDIZED TESTS COMMITTEE

In accordance with its constitutional function to clarify and amplify the rules when needed, the Committee has considered problems submitted to it and has initiated studies incident to the solution of these problems. They are enumerated as follows:

1. The Handbook publication entitled, "Summary of Recommendations Made From Time to Time by the Standardized Tests Committee, 1940-1949" has been revised and brought up to date. Thus a ready reference is provided seed analysts by including under one cover all of the recommendations made in the past by the Committee which are still in effect. Upon approval at this meeting this revision will be published as a Handbook contribution by the Editorial Committee at an early date.
2. The problem of classification of immature fruits of Rumex as inert matter or weed seed was considered. This concerns the application of Sections 2.9 and 2.10, b (4) of the rules. Material for study was circulated among Committee members and a number of commercial laboratories. Results of this study indicated that laboratories differed in their interpretation of what constitutes "empty fruits" of Rumex.

**RECOMMENDATION:** The Committee recommends that immature fruits of Rumex species which contain seed structures in which no starchy material has yet developed be classed as inert matter. When classifying seeds of a doubtful nature the analyst should dissect fruits to determine whether or not starchy material has developed.

3. The application of the rules with respect to the testing of seeds of the carrot family (Umbelliferae) was presented to the Committee with reference to the following questions:
  - a. Can we conclude from Sec. 2.5, e that a seed unit in the carrot family is either whole fruit (schizocarp) or half fruit (mericarp)?
  - b. Do the rules require that we germinate both whole fruits and half fruits just as they occur in the sample or do they permit the separation of whole fruits in order to germinate half fruits only?
  - c. If we are to germinate whole fruits as they occur, how is the problem of separation of the double fruits in the test and the resultant confusion of seedlings to be avoided?

A study was made to determine the frequency of occurrence of whole fruits in samples of seed of the carrot family for which we have rules for testing. The problem is of greatest concern in parsley. Out of 134 parsley samples examined, the occurrence of double fruits ranged from none to 70% with an average of 13%. Parsnip averaged about 2%, carrot one-fourth of 1%, celery slightly more than 1%, and celeriac about  $5\frac{1}{2}\%$ . It should be pointed out that only 9 samples of celeriac were examined. A survey was made among several laboratories to determine how such seeds are actually being tested. Most of the laboratories testing considerable numbers of Umbelliferae separate the whole fruits for the germination test and test only half fruits in order to avoid the problem of the separation of the whole fruits during the test. Those laboratories which did not separate the whole fruits prior to germination made the tests on top of blotters or sand instead of between blotters.

**RECOMMENDATION:**

- a. The Committee recommends that in the purity test schizocarps of Umbelliferae should not be separated, and that both schizocarps and mericarps be considered as pure seed, without discrimination, as they occur in the sample.
- b. The Committee recommends that for the germination test of Umbelliferae, pure seed determined in accordance with (a) above should be obtained for planting, without discrimination between schizocarps and mericarps. Only one seedling should be counted from each schizocarp.

- c. The Committee recommends that in the germination test of Umbelliferae, if schizocarps separate during the test so that it is difficult to determine whether two seedlings emerged from one schizocarp, the alternate substrate mentioned in Table II should be used (TB & TS).
4. The question was asked in connection with Sec. 2.10, b, (5) of the rules "When is an Allium bulblet 'devoid of the husk'?" The Allium Subcommittee was consulted as to the determination used in its study. A magnification of 9X was used to determine the presence or absence of fragments of husk. If a piece of husk was thus observed, the bulblet was considered "in the husk".

RECOMMENDATION: The Committee recommends that the determination of whether or not an Allium bulblet is "devoid of the husk" may be made by visual examination without the aid of magnification.

5. Another question concerning the Allium rule was, "Should bulblets which hang in the sieve because of unusual shape be maneuvered to determine if they will readily pass through if turned in another position?"

RECOMMENDATION: The Committee recommends that in the separation of Allium bulblets by using the 10x10 mesh screen, the bulblets which hang in the screen because of unusual shape may be maneuvered to determine if they will readily pass through.

6. Sec. 2.4 of the rules permits the use of a reduced amount of seed for separations of those kinds of seeds which would be very difficult to separate in the entire working sample. The Committee was asked to make an interpretation which would be more specific as to the kinds of seeds to which this rule applies, the amount of seeds to be used, and how the calculations should be made. A survey was conducted to determine what analysts are doing now in the absence of specific instructions. The results indicate a divergence of practices. The Committee and quite a number of the laboratories replying feel that specific instructions are needed.

RECOMMENDATION:

- a. The Committee refers for further study the problem of the kinds of seed which are considered to be "very difficult" to separate, and recommends that a list of such kinds be published as soon as possible.
- b. The Committee recommends that the calculation of components of a reduced separation be made on the basis of weight, except that in the case of Agrostis species the calculation is to be based on number of seeds. From the percentages thus obtained the percentage in the entire sample is calculated.
7. A sample of spinach seed was referred to the Committee in which the seeds had been injured to the extent that they were hollow. The endosperm-embryo portion was absent with only the outer covering of the fruit remaining. The problem involves the classification of such structures as inert matter or weed seed.

RECOMMENDATION: The Committee recommends further study of the problem.

8. The problem of germination of certain new varieties of garden beans is being considered. It is contended that certain of these varieties germinate better in sand than in towels and are therefore easier to evaluate when tested in sand. A study is currently being initiated to determine the relative merits of these two methods. It was hoped that this study could be completed before the time of the meeting, so the results would be available. Unavoidable delays have made this impossible. The results will be made known as soon as possible.
9. The Committee was asked to clarify Sec. 2.7, i of the rules which states that the pure seed shall include: "i. Insect-damaged seeds, except (1) broken pieces

that are one-half or less than the original size and (2) chalcid-damaged seeds of alfalfa, red clover, and similar kinds of seeds." It was pointed out that some analysts are attempting to remove as inert matter any seed which has been slightly damaged, possibly by a chalcid fly.

**RECOMMENDATION:** The Committee recommends that chalcid-damaged seeds of alfalfa, red clover and other kinds of small-seeded legumes be considered as inert matter when they are soft or puffy; other seeds should be considered as pure seed, even though they may be slightly damaged. --E. W. Sundermeyer, Chairman

#### REPORTS OF SPECIAL COMMITTEES

##### COMMITTEE ON HEALTH PROTECTION OF SEED ANALYSTS

First of all we want to reiterate that in handling seeds treated with poisonous or other toxic and irritating materials the analyst should always be cautious and avoid personal contact and exposure to these materials insofar as possible. The analyst who is allergic to certain types of these materials should not attempt any analytical work where exposure is unavoidable. With the present apparent increase in the use of these materials, there is a possibility that some analysts will be unable to continue in their present capacities.

A couple of recent investigations and studies of the health hazard involved in testing seed which has been treated with organic mercury compounds, have come to the attention of this committee. We find that their conclusions did not concur which leads us to believe that further study and investigation is to be highly recommended.

It has also been noted that analysts working with seeds treated with thiram compounds have more physical discomfort than when working with those treated with organic mercury. Fortunately, the thiram compounds when properly handled do not provide the health hazard involved in working with organic mercury.

Every technician knows that a good whiff of a poisonous gas may cause serious illness. Yet, some neglect to take precautions or to consider the cumulative effect of daily exposure of toxic fumes.

Unit ventilating systems are efficient only when contaminated air is carried away rapidly to the outside air without danger of reentering the building.

In every procedure which may produce toxic or poisonous fumes, local exhaust ventilation should be applied. Remove harmful gases and vapors at their source.

A periodic check over the entire ventilation system of the building in which the laboratory is located should be made. Particular attention should be paid to blower motors, fan blades, and replacement of defective parts.

A recent piece of equipment developed by The Fisher Scientific Company, called the Fisher Isolator Laboratory came to the attention of our committee. The description was published in Fisher's bulletin FS-267 under catalog number 17-110. The price of \$1,033.00 may appear rather expensive, but our association has many good "do it yourself" people and this piece of equipment may give these people some ideas.

The committee would like to express their appreciation to Mr. Raymond P. Seven, Director of Research of Panogen, Inc., for his cooperation and pictures that Panogen's affiliated laboratory in Stockholm, Sweden, designed for observation of mercurial treated seeds. He also suggested that it undoubtedly would be best to avoid storing or filing mercurial treated seeds in a laboratory work area unless exceptionally good over-all ventilation was provided. --John E. Garver, Chairman