

Report of the Rules and Regulations Committee

The work of the rules and regulations committee during the past year has had to do with two things: First, consulting with the administrative officers in the formulating of rules and regulations for the administration of the United States Federal Seed Act, and second, a consideration of the revision of certain parts of the "Rules and Recommendations for Testing Seeds" as adopted by the Association of Official Seed Analysts of North America in 1937.

Federal Rules and Regulations

The rules and regulations for the Federal Seed Act were published in March 1940 as Service and Regulatory Announcement No. 156 of the Agricultural Marketing Service of the U. S. Department of Agriculture. It is apparent that these rules and regulations will have a marked effect on the methods employed in the various seed laboratories during the next few years.

History of Rules and Recommendations for Testing Seeds

In order to have the proper appreciation of our present rules for seed testing, it is desirable that we briefly review the circumstances under which they had their beginnings and how they developed.

As noted by Stone (11), seed testing had its beginning in 1869, when Frederick Nobbe established the first laboratory in Thorand, Germany. This was apparently at the suggestion of E. M. Holst, editor of an agricultural journal in Copenhagen, Denmark. Other laboratories were established as follows: Austria, 1870; Denmark, 1871, Belgium, 1875; Switzerland, Norway, and Russia, 1876; Finland, 1880; and Sweden, 1884. In 1906, 112 laboratories were operated in Europe, three in Java, one in Japan, and one in Brazil.

As related by Brown (2), a visit by E. H. Jenkins of Connecticut to Nobbe's laboratory was the beginning of interest in seed testing in the United States. A number of states took up the work and in 1896, G. H. Hicks organized seed testing as a definite line of investigation in the United States Department of Agriculture.

Seed testing work was begun in Canada about 1902. In November 1896, according to True (14), a memorial signed by a majority of the experiment station directors, was presented to the Association of American Agricultural Colleges and Experiment Stations requesting the appointment of a committee to devise a standard form of seed-testing apparatus and methods of procedure. This committee which consisted of representatives from the U. S. Department of Agriculture, Connecticut, North Carolina, Nebraska, and Ohio, formulated a tentative set of rules which were published as Circular No. 34 of the Office of Experiment Stations of the U. S. Department of Agriculture in 1897 (7). In this work, the committee was guided by replies to a circular of inquiry received from some 25 experiment stations which had engaged in seed investigations. In 1904, this circular was revised by the same committee and published under the same title and number.

On December 31, 1908, as recorded by Helyar (6), representatives of 16 states and the United States Department of Agriculture and the Canadian Department of Agriculture, met in Washington, D. C., and formed the Association of Official Seed Analysts of North America. As will be noted by the first volume of the Proceedings, small group meetings were held each fall during the years 1909 to 1913.

In November, 1914, a larger meeting was held at which time representatives

from 11 states, the United States Department of Agriculture, and the Canadian Department of Agriculture were present. Several papers were presented at this meeting. Those which had a direct bearing on rules and regulations for seed testing were:

1. The necessity for standardization methods. By E. Brown
2. Uniform methods of sampling seed. By E. D. Eddy
3. Apparatus and methods employed in making purity tests of seeds. By F. H. Hillman

Rules for Seed Testing by Association

In 1917, the first rules for seed testing as recommended by the Association of Official Seed Analysts were published in mimeographed form. These consisted of a revision of "Rules and Apparatus for Seed Testing" as published in Circular No. 34 in 1904, and were prepared by E. Brown and E. D. Eddy (3). Again in 1919 and in 1921, Brown and Eddy revised these rules and they were published in mimeographed form.

In 1927, the rules were revised by E. H. Toole and F. T. Wahlen (12), adopted by the Association, and published as U. S. Department of Agriculture Circular No. 406 (12). In 1937, a committee consisting of E. H. Toole, M. T. Munn, and W. H. Wright revised the rules and they were adopted by the Association and published as "Rules and Recommendations for Testing Seeds" in the Proceedings (13) as Circular No. 480 of the U. S. Department of Agriculture (13).

Thus it will be seen that the rules and regulations under which the seed testing work has been done for the past 70 years came about in a very normal way. They were formulated to meet a specific need and have been changed and developed as the conditions under which they have been operative have demanded.

Present Needs of Rules and Regulations

It is the desire of the present committee to learn the needs of our present day methods of testing seeds and to modify the existing rules and regulations so as to best suit these needs. To accomplish this, it is evident that we should have the cooperation of all of the members of the Association and the special assistance of the research committee. In 1932, Stevens (10) made a very constructive contribution to rules for seed testing when he proposed five points for consideration. Briefly stated, these were as follows:

1. Adopt the "International Rules" method of reporting decimals.
2. Clarify meaning of "decorticated seeds".
3. Clarify disposition of empty glumes, broken pieces, etc., and of plants the seed of which would be placed in weed or crop seeds.
4. Recommendation equivalent to the "International Rules" method on beets for the handling of seeds of uneven size or otherwise of dissimilar character.
5. Amplify recommendations for time of counting sprouts.

While some of these points have been taken care of in the latest revision of the rules, there are others which need attention.

Some Points for Consideration

During the year, certain suggestions concerning the rules and regulations have been brought to the members of the committee. These have come from various sources and deal with a number of phases of seed testing. These suggested points, listed here as a means of bringing them to the attention of the members for consideration, are as follows:

Methods of sampling. Size of working sample. Methods of making germination tests - seed of newer plants and native grasses. Examination for noxious weed seeds. Purity analysis of native grasses. Clearer interpretation of inert matter. When should decorticated seeds be considered as inert matter. Attention is called to action which was taken at the last annual meeting relative to considering that chalcis-fly or nematode infested red clover and alfalfa seeds that are externally intact be considered pure seed and not inert matter, pending the adoption of a definite rule. Identification of such seeds as quack grass, wheat grasses, and wild oats when the naked caryopsis is found. Identification of such seeds as poverty weed and marsh elder, the wheat grasses, and the bluegrasses. Recommendations on the proper use of sand and soil as media for determination of normal sprouts. Tolerances. Policy for the evaluation of hard seeds in legumes.

It is apparent that the proper treatment of the above phases of the rules and regulations will require some time and some consideration on the part of the research committee. It is believed that each member of the Association should make some contribution to this work.

Special Study of Methods of Sampling Seed

Our committee conferred with the research committee relative to kinds of seed triers and methods of sampling and it was decided to arrange for an exhibit of such triers at this meeting. In May a request was sent to each laboratory asking its support in this matter.

The interest which has been aroused in this subject of sampling seeds indicates its importance and timely consideration. Attached to this report are a number of letters which have been received. It is apparent from these that some of the older forms of triers will soon be discarded for more improved types.

Recommendations

The rules and regulations committee wishes to submit the following recommendations:

1. Tolerances - Substitute for the present tolerances the provisions for tolerances for pure seed, other crop seeds, weed seeds, inert matter, germination, pure live seed, and noxious weed seeds, as given on pages 14 and 15 of Service and Regulatory Announcements No. 156 of the Agricultural Marketing Service of the U. S. Department of Agriculture. It is believed that these tolerances for inert matter will avoid a misunderstanding such as was noted on pages 4 and 5 of Vol. 13, No. 7 of the News Letter.

2. Evaluation of Hard Seeds in Legumes - Adopt the following policy which was suggested by Whitcomb (15) at the last annual meeting of the Association:

THE SUGGESTED POLICY: Based on the experimental evidence which has been submitted and giving due consideration to the various statements which have been made relative to the interpretation of the value of hard seeds, the following policy is suggested:

1. State the percentage of germination and the hard seed separately for all seeds.
2. State the germinating capacity as the percentage of germination plus the following amounts of hard seed for the respective kinds of seeds:
 - (1) Alfalfa, peas, beans, smooth vetch, crimson clover, and Korean lespedeza all the hard seeds
 - (2) Red Clover half the hard seeds
 - (3) Other leguminous seeds..... one-third the hard seeds
3. Attach to the report a concise statement relative to the behavior of the hard seeds of the various species under varying conditions.

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15. Whitcomb, W. O., A suggested policy for the evaluation of hard seeds. Proc. Assn. Off. Seed Analysts. 1939: 86-94. 1939.

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