7. Rules - E. H. Toole, W. H. Wright, and M. T. Munn.

"Rules and Recommendations for Testing Seeds", as adopted by this association on August 27, 1937, have been published both in the 29th Proceedings of the Association and as United States Department of Agriculture Circular 480. Any difficulties which may arise in the actual use of these rules should be called to the attention of the Association in order that changes may be made where desirable.

There has been much discussion of the need of adoption by the Association of a tolerance for the rate of occurrence of noxious weed seeds. It has been found by several workers that, provided the seed lot is well bulked, the actual variation in rate of occurrence of seeds of noxious weeds in successive samples follows closely the theoretical distribution.

A table has been provided in the "Rules and Recommendations for Testing Seeds", showing the theoretical maximum range to be expected in a sample for various actual rates of occurrence and for various degrees of certainty. From general considerations, a reasonable degree of certainty would seem one which allowed a maximum range that would not be expected to be exceeded more than once in 20 trials. It is suggested that such a tolerance be applied in actual practice and given a year's trial to determine whether it is practicable in actual use.

Provisional noxious weed seed tolerance. The values in Table 2 of "Rules and Recommendations for Testing Seeds", in the column "20 trials" for the corresponding value under "given or expected number" are proposed as tolerances for rate of occurrence of seeds of noxious weeds. In the use of this table, the rate on the label should be revised to the basis of the amount actually examined to determine the number to be consulted in the "given" column. Then, the tolerance would allow as a maximum number in the amount examined the corresponding number in the column under "20 trials".

Examples and discussion. A sample of red clover seed is labeled 90 dodder to the pound. An examination has been made of 50 grams, the amount specified in the Rules as the minimum to be examined for noxious weed seeds in red clover. A rate of 90 per pound is approximately 10 per 50 grams. If not more than 16 dodder seeds have been found, the label would be considered within the provisional tolerance. It may seem desirable to examine another 50-gram portion. Then, for the total of 100 grams examined, 20 would be the "given" value and the maximum number allowable within the tolerance would be 29.

It should be noted that in the use of this tolerance, the degree of certainty or the probability remains the same (1 in 20 trials), but the proportional tolerance varies with the expected number and, therefore, for any given sample, with the amount examined. For instance, in the above example of a sample labeled 90 per pound, the maximum limit is 16 for 50 grams examined; had 100 grams been examined, the limit would have been 29, but had only 5 grams been examined, one would have been expected and four would have been the maximum limit under this tolerance. When these maximum limits are calculated at rates per pound they become 360, 144, and 131, for examination of 5, 50, and 100 grams respectively, for the same sample labeled 90 per pound.

All will agree that five grams is too small an amount to examine; however, when a lot of red clover seed is labeled 9 dodder per pound, only one would be expected in the 50 gram sample specified as the minimum quantity to be examined.

A maximum limit of 4 in 50 grams would be allowed by the tolerance, or at a rate of 36 per pound when labeled 9 per pound. If 500 grams were examined, the maximum limit would be 16, or at the rate of 15 per pound with a label of 9 per pound.

From these examples, it should be clear that in order to keep the proportional tolerance low enough to be a reasonable protection to the purchaser, an amount should be examined, where practicable, that would give an expected number of 10 in the amount examined. The examination of an amount such that 20 would be expected will reduce the proportional tolerance appreciably, but the examination of a larger amount will reduce the proportional tolerance very little and would not seem to justify the increased work.

8. Handbook - E. Brown and W. H. Wright

In order to make a definite start at collecting material for the Handbook, and also to find out from the members of the Association what type of paper should be included, the Committee wrote to certain members for contributions. The following four papers were received in time to be mimeographed and sent to every member laboratory before the Annual Meeting: -

The Seed Collection	H. Sifton
The Size of the Working Sampled for Purity Tests.	C. W. Leggatt
Sampling.	Wright & Leggatt
How Accurate is a Test?	Leggatt

Three other papers were received too late to have mimeographed before the Annual Meeting. This, however, will be done in the near future. These are: -

The Objects of a Purity Analysis.	W. O. Whitcomb
The Technique of Purity Analysis.	Miss E. F. Sirrine
The Identification of Seeds.	Miss A. F. Musil

The Committee recommends that between now and the next annual meeting as many papers on various phases of seed testing be prepared as is possible; these to be memeographed and sent to the membership for criticism and suggestions; and, further, that the next annual meeting be devoted almost entirely to a discussion of these papers and the Handbook.

Summary

The activities of the Research Committee for 1937-1938 have been somewhat extensive, as the report shows. The major objectives have been to (a) determine the extent of variability in tests among different laboratories, (b) investigate the causes for extreme differences, and (c) attempt to develop standardized and uniform techniques in the testing of grasses and other crop seeds. It is