How Well is Corn Seed-Treated in Commercial Practice?

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There is little in the literature concerning the question raised in the title of this article. Studies on the effectiveness of corn seed treatments have been neglected mainly because of the lack of suitable laboratory methods for making the necessary tests.

The development of the rolled towel technique for corn cold tests at the Wisconsin Agricultural Experiment Station in 1950 provided a simple laboratory method for testing the adequacy of treatment with fungicides. This method was used in a cooperative study with the Wisconsin Seed Certification Service in a 2-year survey to determine how effectively seed producers were treating their seed. In Wisconsin, treatment of hybrid seed corn with a fungicide is a requirement for certification. A statement from the producer that his seed was treated usually has been accepted by the Seed Certification Service.

To check the accuracy of the rolled towel technique, all samples were also tested by the older cold test method in the walk-in refrigerator. The details of procedure and results obtained in the survey are reported in the followingsections.

METHODS

Seed samples collected by the Wisconsin Seed Certification Service for certification in 1952 and 1953 were used. The study included 79 samples of new seed from the 1951 crop, from 18 seed producers. In 1953, 441 samples were tested from 84 producers. Included among these were some carry-over lots from the 1951, 1950, and 1949 crops.

Standard germination tests on all samples were made in the certification laboratory. Seed from each sample was retreated with Arasan (50% thiram) applied by the excess method, the excess fungicide being removed from the kernels by screening, leaving them coated with the maximum amount that would adhere without a "sticker." The retreated kernels then were tested for germination in the cold tests against the seed as treated originally by the producers. Increase in the germination of the retreated seed over that of the original treatment was considered as an indication of ineffective treatment on the part of the producer.

Cold Test Techniques

In the rolled towel method, 50 kernels first were placed on soil spread about 1/8-inch deep on double, wet paper towels. A third wet towel was laid over the kernels and the whole rolled loosely into a "doll." The "dolls" were placed in...