SEED AND SEEDLING CHARACTERS IN CERTAIN VARIETIES OF SOYBEANS

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WITH THE increasing use of soybeans in the cornbelt the problems of soybean management are becoming steadily more important. One of the problems which is attracting much attention is the choice of varieties. A desirable soybean variety should carry a high percentage of oil, stand up well, be high yielding and non-shattering, and should be adapted in maturity to the locality in which it is to be grown.

To meet the annual planting needs of the Corn belt area several million bushels of seed are required. Growers and seed dealers naturally are interested in this demand for seed and are attempting to handle desirable varieties for the localities in which their customers reside. Experiment stations, in cooperation with the U. S. Dept. of Agriculture, are isolating and testing new kinds. All of these factors are pushing the matter of varietal identification into especial prominence.

Soybean varieties, both of the established and of the newer kinds, in many instances resemble each other so closely in seed characters that identification by these characters alone is difficult. Additional differences as might be observed in the seedling stage and therefore rather quickly determined, as well as a more detailed description of seed characters, apparently would be useful.

In the late fall of 1942, 27 varieties of soybeans, most of them already commercially important in the Corn Belt or showing considerable promise as new kinds, were obtained in small lots from the Iowa and Indiana Agricultural Experiment Stations. Again, in 1943, different lots of the same varieties were obtained from the Agricultural Experiment Stations in Illinois and Iowa. These lots then were hand picked to eliminate damaged seeds and to obtain samples uniformly true to the indicated varietal type.

An examination of the seed characters in this group indicated that many of these varieties are similar. Some of them appear so nearly identical that identification on the seed basis alone is difficult if not impossible. As a result of a comparative study the following seed key has been developed.

SEED CLASSIFICATION

1. Seed yellow
   A. Hilums large, 3 or more mm in length
      1. Hilums black, with narrow white scar

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2 Associate Professor of Farm Crops. Robert Weber of the U. S. Dept. of Agriculture and Professor H. D. Hughes and Doctor J. J. Johnson of Iowa State College, made valuable suggestions in connection with this study.