

STATE AGRICULTURAL EXPERIMENT STATIONS

in the Spring Wheat Region cooperating

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WHEAT BREEDING IN MEXICO

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Now that Mexico has achieved its wheat production goal, the breeding program has been modified toward incorporating greater security into wheat production and at the same time toward developing varieties which will permit the economical use of larger quantities of fertilizers and thereby result in higher yields per unit of area.

The multilinear (composite) variety program is being developed as a greater hedge against disease losses. Last season a considerable number of experimental multilinear varieties were made and tested. These tests clearly established the feasibility of using multilinear varieties from an agronomic or producer's standpoint. The data on the milling of these varieties also clearly indicate the feasibility of this approach. At the present time the samples are being evaluated in the experimental baking laboratory.

During the current season a larger number of multilinear varieties are being studied. Moreover, basic studies are being conducted on the population shift in multilinear varieties. During the forthcoming summer detailed studies will be conducted on the epidemiology or rate of spread of stem-rust in mixed population or multilinear varieties in small plots.

Lodging has become the principal limiting factor in yield on the properties of our most progressive farmers. Currently there are farmers who are applying from 120 to 140 pounds of nitrogen per acre, and under these conditions severe losses from lodging sometimes occur.

Last year a considerable number of dwarf varieties were studied in yield trials. Some of these, although they are still deficient in baking quality, outyielded the commercial varieties by 15 to 20 percent and offer possibilities of increasing yield very greatly when fertilized more heavily. These varieties carry the Norin 10 dwarf factors. The best of these varieties are being backcrossed to the Mexican commercial varieties to improve baking quality. Simultaneously, these dwarf factors are being incorporated into the recurrent parents being used in the multilinear variety program referred to above. Once this is done it will be possible, with a single cross, to transfer the dwarf factors to the stem-rust resistant lines with normal height of straw which are being used in the experimental multilinear varieties at the present time.