BAGGING POSSIBLY REDUCES SUCCESS IN OAT CROSSING

At best, oats are more difficult to cross than other cereals. Consequently any procedure promising increased success in oat crossing is of interest. Working in the field at Aberdeen, Idaho, in 1955, the writer emasculated and artificially pollinated 108 panicles, of which 100 were harvested. In crossing, the procedure as previously explained was followed with little or no variation. All work was done in the afternoon and usually only the 5 uppermost florets were used. Pollination followed within a few minutes after emasculation. Records were kept of crossing date and number of florets pollinated. Crossing at a stage that permits emasculation and pollination to be done at one time does not appear to give a large number of selfs.

In 1955 oat florets were hand pollinated on each of 9 days in July and August. On 4 of these days, part of the panicles were bagged and part were left uncovered following pollination. At harvest, 100 panicles contained 528 florets of which 106, or 20%, produced seed. Reference to previous records indicates these percentages were above those for many previous seasons.

Seventy-four of the panicles were bagged whereas 26 were left uncovered following pollination. A total of 41, or 55.4%, of the 74 bagged panicles and 20, or 76.9%, of those not bagged contained seed.

In bagged panicles, 69 of a total of 392 florets, or 17.6%, set seed, whereas in those left uncovered, 37 of 126 florets, or 29.4%, set seed. On 4 days, part of the panicles were bagged and part were left uncovered following pollination. On these days 29, or 63.0%, of the 46 bagged panicles and 15, or 71.4%, of the 21 not bagged set seed.

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Notes

The 46 bagged panicles contained 232 florets, or 23.3%, set seed whereas the 21 panicles contained 106 florets of which 29, or 27.3%, set seed. Hence it is clearly indicated that at Aberdeen, 1955 bagging panicles following hand pollination to reduce percent of seeds obtained. As yet we do not know just how much of this increase in seed set of bagged panicles resulted because of fertilization by stray pollen but it seems evident that increased seed set was due to the bagging process.

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THE DIRECT TEST FOR DWARF BUNT IN WHEAT

Accurate information on the reaction of wheats to the dwarf bunt organism (Tilletia brevifaciens G. W. Fischer) is essential in a wheat breeding program. Because of the peculiar physiologic characteristics of this fungus it has been difficult and time-consuming to obtain information directly by exposing wheats to T. brevifaciens. Plant breeders and plant pathologists have, therefore, relied to some extent on data obtained by exposing wheat lines to the common bunt race T-16 of T. caries. In a recent paper it was shown that the incidence of dwarf bunt in wheat could be influenced by applying a covering of straw on the wheat plants during a portion of the winter. This method with some modifications has been used in testing varieties and new lines of wheat at the Cornell University Agricultural Experiment Station. This paper presents these results (obtained recently).

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