NATURAL CROSS-POLLINATION IN MILO.


An appreciable amount of natural cross-pollination takes place in grain sorghum, as is evidenced by the hybrid plants which are constantly appearing in fields of this crop. These hybrid plants in grain-sorghum fields are more readily observable than hybrid plants in Indian corn, since the types of grain sorghum are more varied, resulting in more strikingly different hybrids. Very little definite information has been published as to the amount of cross-pollination occurring in grain sorghum. The extent of natural cross-pollination in this crop is of the greatest importance to the plant breeder and to the farmer, as both the improvement and the maintenance of purity are affected by natural cross-pollination. Information as to the percentage of cross-pollination under natural conditions will be an aid to the breeder in attaining higher standards and to the grower of the crop in maintaining the purity of any improved strain.

During the season of 1917 the writers observed some white milo plants which had been mechanically introduced in a plat of yellow milo. These plants were flowering simultaneously with the yellow milo. Forty-one heads of white milo were selected and planted the succeeding year, 1918, in head-row plats, using all seed from each head. No record was made of the number of seed to the head or even the weight of the head. Germination seemed fair, but final counts indicated incomplete germination. From each of these head rows, in which most of the plants produced white heads, all the plants with yellow seed heads were recorded as well as the total number of progeny in each row. The data obtained proved very interesting, notwithstanding the preliminary nature of the work. Table 1 shows the total number of plants and the total number of visible hybrids produced from each head.

It is seen from the table that several heads have shown a much higher percentage of cross-pollination than others, and that such heads invariably have shown about the average number of hybrid plants. Examination of the number of progeny from these same heads as compared to progeny from other heads shows a relatively lower number of progeny plants from these heads which have shown

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