NOTE

INOCULATING WHEAT WITH LOOSE SMUT

The following simple method has been used at the Ohio Experiment Station to make inoculations in the field of loose smut, Ustilago tritici, (Pers.) Jens., on wheat.

Place in a distended paper bag (about 2-pound size) enough spore material so that with vigorous shaking a thick cloud of spores may be aroused. Invert the bag over a wheat head, or over several heads if they are all about the same height, using care in tipping the bag that the spore material is not lost. Hold the mouth of the bag closed about the culms with one hand, and beat the other end with the fingers of the other hand. The entire wheat spike will soon have taken on a brown coating of spores.

Wet the inside of a small glassine bag (the 2½-inch by 6-inch size used by corn breeders is satisfactory) by filling with water and emptying. Tie the glassine bag over the treated wheat head as tight as the culm will permit. The wetting may not be entirely necessary. It is provided to aid in moistening the enclosed atmosphere and plant parts.

The glassine bags need not remain on the plants until maturity. Just how soon they may be removed has not been determined. In the brief tests here, mould has not been troublesome, but should it appear, the bag would need to be removed.

Treating the heads before the opening of the earliest flowers, or after the completion of blooming, or any time between has produced infection. The opening of the first flowers near the middle of the spike provides a well marked stage in the development of the head, and has been satisfactory as a period for treatment.

Several comparisons have indicated that clipping the tips of the glume before treatment, so that spores will settle directly on the flower parts, may be expected to result in considerably more infection. A little trimming of awns on bearded varieties will facilitate application of the spores.

The accompanying tabulation represents percentages of infected spikes in a set of Fultz head-rows. The parent plants had been treated as described above in the early bloom stage and without clipping the glumes:

937