

REPORT OF WORK IN CORN POLLINATION.

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The work here reported was done during the season of 1908. A series of six studies was carried out in duplicate, as follows:

- a. To determine period necessary for pollination in the field.
- b. To determine the best condition of silks for pollination.
- c. To determine time of day when pollination takes place most actively.
- d. To determine the result of crossing with pollen from a variety of a different color or race.
- e. To determine the vitality of pollen grains.
- f. To determine the effectiveness of hand pollination.

All prospective ears were covered with paper bags before the silks appeared. Where hand pollination was performed, an umbrella was held over the shoot and to the windward while it was uncovered. Only the results obtained from "d" and "e" will be reported upon at this time. In all but "b," the silks used were three inches or more in length and in fresh condition.

The work under "d" was divided into four parts: d¹. The silks of Reid's Yellow Dent, a yellow variety, were pollenized with pollen from Boone County White, a white variety. Fairly well filled ears were obtained. The kernels had yellow bodies and almost uniformly whitish crowns. A few kernels were yellow throughout. The character of the kernel and ear, other than color, was uninfluenced.

d². The silks of Reid's Yellow Dent were pollenized with pollen from Stowell's Evergreen, a sweet corn, whitish in color and having wrinkled kernels when mature. Fairly well filled ears were obtained, but the character of the ear and kernel was unchanged. The only variation noticeable was a somewhat broader kernel, but such variation might occur without the effect of crossing.

d³. Reid's Yellow Dent was pollenized with pollen from a speckled variety. None of the kernels was speckled. A few had whitish crowns. Otherwise no change.

It should be said in this connection that the tassels from which the pollen was obtained were plucked in the afternoon and mailed in an envelope from Galveston, Ind., in the evening and used the next morning at Lafayette, Ind. The fertilization was not so complete as in other cases of hand pollination.

d¹. The silks of Boone County White were pollenized with pollen from Reid's Yellow Dent. Well filled ears were obtained. The kernels had uniformly yellowish bodies and white crowns. The kernels were shorter than the usual Boone County White kernel, but this may have been due to the extreme dry weather of the season. In all other ways the character of the ear was unchanged.

The work under "e" was divided into three parts.

e¹. Two five ear lots were pollenized with pollen 24 hours old. To obtain this pollen tassels were plucked in the afternoon and laid on paper in a room. The next morning the pollen was jarred out of the ripe anthers. The following morning this pollen was used to pollenize the selected ears. With pollen 24 hours old very well filled ears were obtained.

e². Two five ear lots were pollenized with pollen 48 hours old, obtained as in "e¹." The ears obtained from this pollination were not so well filled, there being many vacant places, showing a failure to fertilize.

e³. Two five ear lots were pollenized with pollen 72 hours old, obtained as in "e¹." In this case practically no fertilization took place. The best ears had not more than 8 or 10 kernels on the cob, and the others only 3 or 4 kernels.

No conclusions are offered concerning these experiments. It is proposed to repeat the experiments in 1909, also to plant the corn obtained in d¹, d², d³, and d⁴, and note results.