FIRST GENERATION CROSSES BETWEEN TWO ALFALFA SPECIES.¹

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This paper deals with the amount of growth made by certain hybrids between the two species of alfalfa, Medicago sativa and M. falcata, in comparison with the parent forms, and also with the amount of winter injury and winterkilling sustained by these hybrids. The experiment as planned also concerned itself with the amount of cross-fertilization occurring among normally pollinated alfalfa plants, as reported in a previous paper (4).²

Experimental Work.

The F₁ plants were started in flats in the greenhouse in January, 1918, the seed having previously been treated with sulfuric acid. The plants were transplanted once and very early in the spring were set out of doors in flats. They were protected from severe freezing by cloth. The seedling plants were transplanted to the field during the first week of May.

The soil of the field was a rich, black loam, well drained and in excellent tilth. The plants were set with a hand planter 30 inches apart each way. The progeny of each pistillate parent plant generally comprised 84 or 105 numbers, when the stand was complete. The seedlings planted from the pistillate sativa parent and from the pistillate falcata parent were 2,316 and 2,034, respectively. A very good stand resulted, tho some blank hills were later in evidence.

The F₁ hybrids from typical plants of the two species of Medicago, such as the parent plants used in this experiment, can be told without hesitancy at time of blooming. The strongly variegated flower color has been described by Westgate (5). The hybrids showed much variation in flower color, but generally only a casual examination was necessary to reveal the characteristic flower color of the hybrid. Notes were taken the first season, 1918, upon each plant as to its

¹ Contribution from the North Dakota Agricultural Experiment Station, Agricultural College, N. Dak. Approved by the Director. Presented at the twelfth annual meeting of the American Society of Agronomy, Chicago, Ill., November 10, 1919.
² Reference is to “Literature cited,” p. 143.