

The healthiest and most normal plants frequently show the highest degree of self-sterility. This condition is explained on the basis of chemical substances in the styler tissue which prevents pollen tube growth. A single Mendelian factor SF will produce self-fertility and can be readily transferred from self-fertile races to self-sterile races.

THE INHERITANCE AND UTILIZATION OF MALE STERILITY IN SUGAR BEETS

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Male sterility in beets is brought about by pollen abortion. Completely male sterile plants may develop normal female flower portions although their pollen is aborted. This character is presumably inherited by complementary factors. Male steriles can be crossed with certain known complements bearing normal flowers and the result is complete male sterility in the hybrids. Therefore, one may speak of the character as being dominant and in this sense it differs from most male sterility reported in other plants.

Male sterility in corn and sorghum is recessive and perhaps of little use in a breeding program. The dominant nature of male sterility in beets makes it of considerable practical interest in connection with hybrid vigor. By using male sterile plants complete hybridization is assured with possibilities of the well known increase in growth known as hybrid vigor.

THE COMPARATIVE RATE OF BOLTING IN VARIOUS CROSSES BETWEEN ANNUAL AND BIENNIAL STRAINS OF BEETS

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This paper presents data on the comparative rate of bolting or seed-stalk development of F_1 , F_2 and backcross progenies derived from crosses of Munerati's annual strain with various biennial selections. The annual parental strain has a higher average rate of seedstalk development than F_1 , F_2 or backcross progenies. Backcrosses in all combinations tested were slowest in rate of bolting.

In several crosses it was evident that the F_2 rate is somewhat lower than the rate of bolting of F_1 plants. A tentative explanation for these results is based on the combined effects of the annual factor B and the probable action of several independent modifying factors.

ABSTRACTS OF RUSSIAN PAPERS

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Abstracts read by title.