

Reproductive parameters of birdsfoot trefoil.

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Low seed set per pod in birdsfoot trefoil is the major problem to obtaining an economic seed yield. The ovary contains a rather large but varying number of 22 to 50 ovules. However the mere presence of pollen on the stigma does not insure fertilization and seed development in cross pollination, the number of fertilized ovules per ovary varies greatly. Usually 10-19 fertilized ovules and developing seeds are observed per pod. The failure of fertilization of the ovules might be attributable to pollen and pistil characteristics. The object of this research was to investigate the relationship of certain pollen and pistil characteristics which may affect seed yield in birdsfoot trefoil. Two populations of birdsfoot trefoil had been selected by recurrent selection for producing long or short pods. Fifteen genotypes were selected from long and short pod producing populations and MU-81. These 15 genotypes were analyzed for pollen grain size, pollen germination rate, pollen tube length and width, style and pistil length, diameter of stigma, diameter of stigmatic canal, diameter of style, the length from stigma to stylar canal, and ovule number per ovary. Genotypes of the long and short populations were then crossed using MU-81 as the paternal parent to determine the effect of successive pollinations to the sequence of fertilization of ovules and the effect of flower age to ovule maturity.