

Several interesting growth patterns have been observed in some of the dissected embryos. One produced 10-12 plumule-like green projections on a sphere of undifferentiated tissue. Another produced a near-normal epicotyl that grew into the medium and maintained its green color for a time.

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3. Corn x Tripsacum hybrids.

The relationship of corn and Tripsacum has long been recognized. Forty-six European varieties and 82 corn belt inbred lines of corn were crossed with a clone of Tripsacum dactyloides having $2n=36$ chromosomes. Corn was used as a female parent and two ears of each line were pollinated with Tripsacum pollen by the method outlined by Mangelsdorf and Reeves (1939). Immature embryos were excised under sterile conditions 12 to 28 days after pollination and were grown in nutrient media (White, 1943) in small 3 1/2" vials. Best growth was observed in embryos cultured 18 to 20 days after pollination; however, younger and older embryos failed to grow in vitro.

In general, Tripsacum crosses with open-pollinated European corns were more successful than when corn belt inbred lines were used. Fifteen of the 46 European varieties produced viable embryos when crossed with Tripsacum. Of the 82 corn belt inbred lines, only 12 were able to hybridize with Tripsacum. Reciprocal crosses using Tripsacum as female parent were also attempted, but in almost all cases, plants produced from the embryos are like Tripsacum and are probably apomictic. Further studies on the chromosomal relationships in the hybrids are in progress.

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4. Location of brachytic-2 dwarf.

Mung(unpublished) found the possible location of brachytic-2 as chromosomes 1, 3 or 6. An attempt was made to locate this gene, with A-B translocations, on the above mentioned chromosomes. Dwarf type plants occurred in the F_1 cross ($br_2/br_2 \times TB-1a$)(break in 1L .2). but because of the reduced vigor of the hypoploid individuals it was impossible to classify the plants as dwarf or normal. Therefore, the F_1 hypoploid plants were backcrossed to the following three genotypes: Br_2/Br_2 ; Br_2/br_2 ; br_2/br_2 . The data for the backcross progeny, presented in table 1, indicate that brachytic-2 is located in the long arm of chromosome 1.