count for the sudden condition of the pollen that usually resulted.

To apply the results of the investigation to hybridizing in the field, fresh male flowers were collected at 8 A.M., stored at 26°C and 70% RH until 4 P.M., and then placed in a portable constant temperature-humidity chamber set for the storage condition. The chamber was a 20-liter (5-gallon) thermos jug with an aqueous solution of 32% sulphuric acid in a well at the bottom. Pollen from these male flowers were in excellent condition for hybridizing. Pod set averaged 67% with 2.1 seeds per pod on days of low air movement. Pod set dropped to 0% on windy days.

LITERATURE CITED

AN INEXPENSIVE MULTIPLE-STIRRING APPARATUS
Jack C. Shannon

The need for an apparatus capable of extended simultaneous stirring of solutions in several test tubes prompted the construction of a multiple-stirring apparatus. We routinely use this stirrer in the solution of starch in 90% dimethylsulfoxide. This apparatus has been useful in this laboratory and could have many other applications.

MATERIALS
1 - GT 21 Motor Controller and variable speed high torque motor (Gerald K. Heller Co., Las Vegas, Nevada).
20 - Size 5 one-hole rubber stoppers
15 - Size 2-hole rubber stoppers
20 - Stainless steel rods 0.5 cm x 8 cm
2 - Aluminum plates 9.5 cm x 75 cm x 0.4 cm
2 - Wooden 3-step pulleys
1 - Piece of Tygon tubing approximately 160 cm long by 4 mm in diameter
4 - Bolts 5.5 cm long
4 - Spacers 5.5 cm long cut from brass tubing 1.27 cm O.D. with a wall thickness of 0.32 cm
40 - Steel washers

The stainless steel rods were inserted through the one-hole stoppers. The belt grooves were cut in the driving stoppers and belt guides with a round wood rasp. The stirrer (Fig. 1) was constructed as follows: Fifteen driving stoppers (a) were positioned between the two aluminum plates (b). The long end (4 cm) of each stainless steel rod was inserted through a hole (0.6 cm in diameter) in the lower plate and the short end (1.3 cm) was placed through a similar hole in the upper plate. Two steel washers, between the driving stoppers and the lower plate, reduced friction and wear of the rubber. Five grooved stoppers positioned on the return portion of the belt serve as belt guides. A two-hole stopper (c) was placed on the lower end of each stainless steel rod. A wooden three-step pulley (d) was placed at each end. The shaft of the driving pulley was connected to the motor (e). These pulleys were used because they were available in the laboratory but similar pulleys would be satisfactory.

The apparatus is held together by bolts threaded through the brass spacers (f) at each corner. Two rods (g) 1.27 cm x 15.0 cm long were bolted to the upper aluminum plate. These are used for mounting the apparatus to a Flexaframe support.

The most satisfactory driving belt was made from small, thick-walled tygon tubing. The tubing was threaded between every two driving stoppers (Fig. 1). The two ends of the tubing belt were tied together.

One end of a stirring rod is inserted in the second hole of the two-hole stopper. The other end is positioned in the test tube. Since the driving rod and stirring rod are connected through a two-hole stopper, the stirring rod rotates in the tube when the motor is operating. The radius of rotation may be increased or decreased by changing the size of the two-hole stoppers. During extended stirring glass rods will scratch glass tubes, consequently stirring rods made from 0.635 cm teflon are used when stirring in glass tubes.

The only major expenditure for this stirrer is the variable speed, high torque motor. This motor can be connected and disconnected as needed for other operations in the laboratory.