WITH most self-incompatible plants, controlled crossing on a large scale can be easily accomplished by growing the selected individuals in isolation, but with self-compatible plants the problem of outcrossing is more complex. In the case of white clover, *Trifolium repens*, a self-compatible plant was observed to produce only 19% outcrossed progeny following "natural crossing" by bees (4), and it was concluded that the amount of crossing obtained under field conditions with clones of this type probably would not be adequate for most practical breeding purposes. Instead it would seem to be necessary with self-compatible lines to eliminate the *Sf* gene by controlled matings before attempting to combine them on an extensive scale.

From genetic studies (2) of this character, however, it was concluded that the gene may be very useful in facilitating inbreeding. It was also recognized that the ultimate method of its utilization would depend on several behavior factors, none of which was completely understood. Recently, some of these factors have been studied more in detail, and since no further work along this line is contemplated for the present, the principal results are summarized here.

**MATERIALS AND METHODS**

All self-compatible plants used in these studies were derived from the original cross which was used to investigate the inheritance of the *Sf* gene (2). The unrelated, self-incompatible plants used in certain crosses were selected from open-pollinated seed lots which had been grown from a number of different sources in order to make first selections based on several important agronomic characters.

The methods used for testing self- and cross-compatibility in both greenhouse and field were the same as those used earlier (1, 2).

**EXPERIMENTAL RESULTS**

The studies were made in an attempt to answer several specific questions, and the results presented accordingly.