

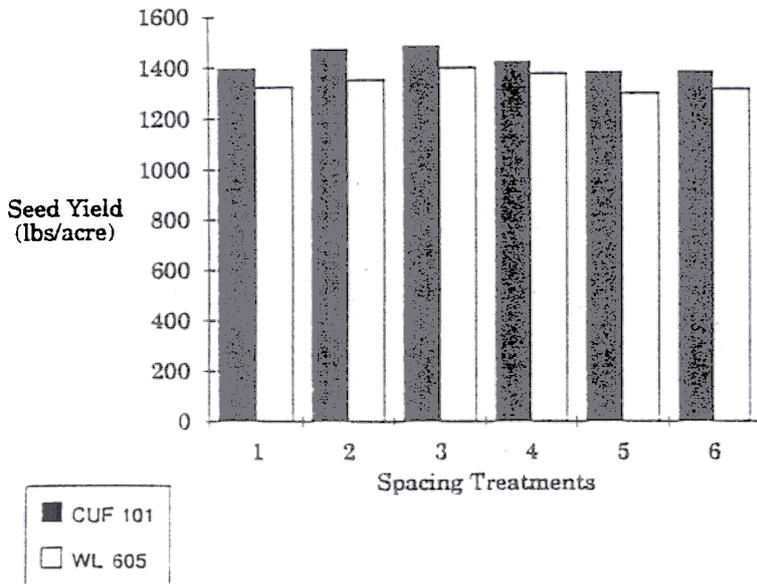
## Second Year Results Summary

In 1991, the portion of the field planted to CUF 101 yielded an average of 1422 lbs./ac. The WL 605 section yielded 1270 lbs./ac. This year, there were no significant differences in yield between any of the treatments.

The trial area was irrigated only once in the spring (5/25/91), and no differences between treatments were observed in bloom or maturation. Since the trial is located over a shallow water table, differences in water use efficiency are difficult to detect once roots tap into the subsurface water supply. All treatments remained green and lush throughout the summer. This condition is not optimum for pollination by honey bees, but since leafcutter bees were used to pollinate in 1991, high yields were obtained despite the growing conditions. I believe the more aggressive pollination by the leafcutter bees overcame any differences due to spacing that might have been observed with honey bees.

There was low pest pressure this season, especially early in the year. High lygus pressure is thought to have a more negative impact on the solid plantings compared to the spaced plantings since pesticide coverage would be less in dense foliage. In thicker stands, under high pest pressure, more stripping might have been observed.

1991 Plant Spacing Trial



## SELECTION FOR POLLEN COLLECTION IN HONEY BEES

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Alfalfa crop systems present difficulties for beekeepers and seed producers. Colonies dwindle in population during the time they are in alfalfa due to decreased brood rearing and lack of stored pollen. The lack of stored pollen may be a result of the "dislike" of worker honey bees for the alfalfa flowers which results in the reduced efficiency of honey bees as alfalfa pollinators. We designed an experiment to determine if strains of honey bees that were selected for the quantity of pollen they store in the comb show differences in stored pollen and brood quantity when used for alfalfa pollination.

Two way selection was applied for high and low stores of pollen in colonies of honey bees. Previous studies have demonstrated that workers from strains of bees selected for high and low pollen stores show high and low tendencies to collect pollen. Daughter queens were raised from queen mothers of generation two of each of the high and low strains and were allowed to mate naturally in commercial queen production apiaries. These test queens were then introduced into commercial hives May 10, 1991. Colonies were moved into the alfalfa in early June and evaluated for quantities of stored pollen and brood on July 18. High strain colonies had 24% more brood and 143% more stored pollen than lows. These results were statistically significant.

From these results, we conclude that commercially produced high and low pollen hoarding strains of bees differ with respect to pollen collecting and brood production. Next we need to test the high strain bees against unselected commercial stock to see if they are indeed better than what is commercially available and we need to determine if more pollen collecting results in more alfalfa seed.

### COST SHEET UPDATE

The "current" alfalfa seed production cost sheet is 6 years old. I need 5 growers who would be willing to meet with me once or twice to help update information regarding cultural practices, equipment needs, and timing of operations. Please call me if you are able to help out (209) 488-3285.