

## APICULTURE AND SOCIAL INSECTS

### **Colony Performance of Selected Honey Bee (Hymenoptera: Apidae) Strains Used for Alfalfa Pollination**

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**ABSTRACT** High and low pollen-hoarding strains of honey bees were selected based on quantity of pollen stored in combs. Performance of strains in commercial alfalfa seed pollination is reported. After 3 generations of selection, colonies with instrumentally inseminated high-strain queens stored significantly more pollen (2.4-fold) than low-strain colonies. Similarly, colonies from naturally mated, outcrossed high strain queens stored more pollen (2.4-fold) than outcrossed low strain colonies. Selection did not change preferences for sources of pollen. After 4 generations of selection, colonies with naturally mated high strain queens outcrossed with commercial drones stored significantly more pollen (1.4-fold) than commercial colonies. Rates of queen acceptance (54% and 61%) and overwintering survival (61%) in commercially managed colonies were surprisingly low, indicating 37% queen survival over a 10 month period. Overwintered outcrossed high strain colonies were more populous than commercial colonies at the beginning of almond bloom.

**KEY WORDS** Apis mellifera, selection, pollen-hoarding

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