

THE EFFECTIVENESS OF THE WESTERN BUMBLEBEE IN POLLINATING HASS AVOCADO TREES

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R. McNeil¹ and W. Pidduck¹

¹ Cal Poly State University. Horticulture and Crop Science Department. San Luis Obispo, CA, USA 93407. E-mail: rmcneil@calpoly.edu

There has been recent interest in the use of alternative pollinators for the Hass avocado in California. Eight bumblebee hives were placed in the middle of a .86 hectare (2.125 acres) block of 2-year old Hass avocado trees during bloom in May. Numbers of three types of pollinating insects (bumblebees, honeybees, and syrphid flies) visiting blossoms were surveyed for three weeks. The number of fruit set on each tree was counted in the next winter. Percentages of insect pollinators visiting blossoms were 9.8% for bumblebees, 10.1% for honeybees, and 80.1% for syrphid flies. Fruit numbers per tree were greater in four out of six rows within 16.46 meters (54 feet) of the bumblebee hives than they were for trees in rows further from the hives. This was statistically significant for three of these rows. This study demonstrated that the western bumblebee (*Bombus occidentalis*) will pollinate Hass avocado flowers and thereby increase fruit numbers per tree. A hive spacing of 32.92 meters (108 feet) is recommended for young trees.