

Raphael A. (Raffi) Stern, Prof. of Pomology and Subtropical Fruit Trees, MIGAL-Galilee Research Institute and Department of Biotechnology, Faculty of Sciences, Tel-Hai College, Upper Galilee, Israel

Title of presentation: The use of bumblebees to augment avocado pollination

Abstract: Pollination is limiting for avocado production. We examined whether adding bumblebees (BBs; ca. 10 hives/ha) to conventional honeybees (HB; 5 hives/ha) would improve 'Hass' avocado pollination and yields. Trials conducted between 2017 to 2021 in avocado orchards in Israel, with 'Hass' as the main cultivar and 'Ettinger' serving as a pollinizer showed a considerable increase in 'Hass' yield in rows adjacent to (up to 80 m from) the BB hives vs. distant rows (=controls). Pollination rates and the number of germinating pollen grains per stigma decreased with distance from the hives, and correlated to the negative gradient in yield. (Taken together, our data suggest that adding BB hives to 'Hass' avocado orchards, at ca. 10 hives/ha resulting in 0.5–1.0 BB visits/tree per min, increases pollination and, accordingly, total yield).

Bio: Dr. Stern conducts research programs aimed to improve yield and fruit quality of subtropical (avocado, mango and litchi) and Deciduous (apple, pear, peach, plum, apricot and cherry) orchards. His areas of specialization are reproductive biology – pollination and fertilization, fruit development and abscission, crop load and management, high-density orchard planting systems including rootstocks examination and/or growth retardants, and the potential use of PGRs to control the above processes.

https://www.mop-zafon.org.il/sites/default/files/uploads/cv/pdf/CV_mop_1.pdf

