

Effects of different irrigation regimes in late summer on avocado fruit development and ripening

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Summary

We studied the effect of changes in regular irrigation scheduling during August - October on the behavior of avocado fruit pre- and post- harvest. These trials were conducted in 1974-75 in the Kibbutz Mrtzer orchard. The behavior of the Ettinger cultivar was studied and observations were conducted on the reaction to the treatments of the Fuerte and Hass cultivars.

The orchard was sprinkler irrigated in the standard manner according to the Field Service recommendations once every two weeks setting the quantity of applied water by multiplying the evaporation registered by a standard evaporation pan by the coefficient of 0.7. In tests that began at the beginning and mid August we reduced the applied water (irrigation once in 4 weeks with a coefficient of 0.4). We increased the amount of water applied (irrigation once a week with a coefficient of 0.8-0.9). Fruit were sampled several times at the beginning of the harvest season and a detailed observation was conducted on the softening process. A clear influence of the effect of deficit irrigation was found only in 1974. Decreased irrigation had a certain decrease in fruit and seed size. Tendency to advance fruit maturity was also observed in the water deficit treatment, as manifested by the rapid shrinkage of the seed coat.

No significant effect was found by the various irrigation regimes on the the ripening rate of the picked fruit, even though the trees and the fruit demonstrated severe symptoms of water shortage.

The research findings do not confirm the hypothesis that deficit irrigation in the orchard is responsible for the rapid softening of Ettinger fruit during the month of October. The findings hint to the possibility of reduction of water application in avocado orchard during the autumn.