

## **EFFECTS OF THE IRRIGATION FREQUENCY ON THE WATER STATUS AND YIELDS OF HASS AVOCADO IN SANDY LOAM SOIL**

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Orchards in fine-textured soils, having air capacity below 20%, are seriously affected by root asphyxiation. In addition, low frequencies of irrigation in sandy soils could provoke water deficiency causing water stress in plants. In this study, irrigation frequencies in Hass avocado trees were contrasted and their effects on soil aeration, plant water status and yield were evaluated. This was carried out in order to establish an irrigation threshold that allows improving soil aeration without causing water stress in the plants. The experiment was carried out between years 2004 and 2007. Trees used in this work were planted in year 2000 at 6 x 4 m and grafted on Mexicola rootstock. Treatments were established with different levels (5%, 30%, and 60%) of soil moisture deficit before a new irrigation. Irrigation was applied through microsprinklers, using the same volume of water in all the treatments. In sandy loam soil, results showed that decreases of up to 60% of the available soil moisture (ASM) did not affect the water status and yield before a new irrigation. Depending on the year, yields vary between 40 and 50 kg tree<sup>-1</sup>.

Regarding the treatment with 60% (ASM), the stem water potential (SWP) approximately reached -0.6 MPa while the stomatal conductance 0.35 cm s<sup>-1</sup>. SWP never exceeded -1.0 MPa. During the second season, the 60% treatment significantly obtained fruit with a better size because of lower number of fruits per tree.