

# **Investigation of the physiological processes in the avocado tree and fruit and their adequacy as a measurement for irrigation control**

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## **Summary and conclusions**

In an experiment that was conducted during two seasons (1963-1964, dates were in the Hebrew calendar and may not reflect the exact years) the sensitivity of various plant parameters in avocado to changes in soil moisture content.

The daily shrinking of the trunk was found to be a very sensitive indicator of soil water tension and the water status in the tree during all the measurements throughout all the sampling dates. The methodology of measurement is applicable to field measurements. The equipment used, a dendrometer, is simple, inexpensive, portable and easy to use. It is necessary, we believe, to test the efficacy of this indicator in a large scale irrigation trial which includes yield.

The rate of trunk growth is sensitive to the irrigation regime, and was most rapid in trees that were irrigated frequently. The sensitivity of this indicator is not fixed, probably because the growth is influenced by many other parameters, and therefore this indicator will not be practical for indicating irrigation requirement.

The growth of the fruit circumference and fruit drop were not influenced by the differences in the irrigation regime during the two months of the experiment, and the short duration of the experiment does not allow to draw significant conclusions.

Materials utilized in other crops for estimating the level of stomatal aperture using the infiltration method, were disappointing when applied to the avocado. Other materials were also tested but with no success.