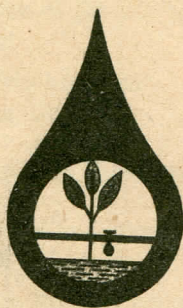


**PROCEEDINGS OF THE SYMPOSIUM ON DRIP IRRIGATION IN
HORTICULTURE WITH FOREIGN EXPERTS PARTICIPATING**

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EFFECTS OF SOIL WATER CONTENT ON LEAF ABSCISIC ACID, WATER POTENTIAL, DIFFUSIVE RESISTANCE, FRUIT AND SHOOT GROWTH IN DRIP IRRIGATED AND NON-IRRIGATED PEACH TREES

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Water potential, diffusive resistance and abscisic acid were measured frequently from May to October in leaves from irrigated and non-irrigated peach trees. Also data were taken from sunrise to sunset on June 20, July 31, August 14 and September 8. Fruit and shoot growth velocity were observed weekly from April to July. Soil moisture was measured weekly with a neutron probe at different depths and at different distances from the trees.

Leaf water potential, before sunrise, was correlated to the soil moisture and reflected trees water status. Fruit growth velocity started to decrease when leaf water potential, early in the morning, reached values about -7 bars.

Leaf water potential values taken during the afternoon were dependent from the interaction of several factors including soil moisture, climate conditions and stomatal resistance.

Stomata, were insensitive to mild water stress since they started to increase diffusive resistance, when, leaf water potential, before sunrise, was about -11 bars. Leaves from well irrigated trees showed low stomatal resistance during the whole season.

ABA concentration in leaves from irrigated trees ranged from 30 to 80 ng/g fresh weight during the entire season. In stressed trees ABA concentration increased sharply after midsummer and was associated with an increase in leaf diffusive resistance, and a decrease in leaf water potential.

Diurnal fluctuations in leaf water potential were associated with changes in soil moisture, temperature, relative humidity, light intensity and stomatal resistance.

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