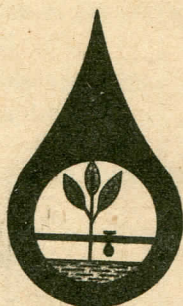


**PROCEEDINGS OF THE SYMPOSIUM ON DRIP IRRIGATION IN
HORTICULTURE WITH FOREIGN EXPERTS PARTICIPATING**

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WATER STRESS UNDER DRIP IRRIGATION CONDITION

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In the case of the drip irrigation system, the question arises whether this system can eliminate the water stress in the plants. This is due to the fact that point irrigation wets a limited part of the soil and consequently only part of the root system receives water.

Experiments with the measurements of the leaf water potential were carried out, in the Pomology Orchard at Skierniewice, on dwarf apple trees cv. Double Red McIntosh. The leaf water potentials were determined by using a pressure chamber. Soil moisture was measured by tensiometers installed at a depth of 20-25 cm and in a distance from emitters of about 20 cm.

In experiments carried out on apple trees under the condition of soil humidity at field capacity, the influences of interstocks on leaf water potential were not found. There were only differences according to the soil water potential and atmospheric evaporative demand. Similar results were found under conditions of the different level of the water stress in the soil.

The measurements of the leaf water potential in irrigated and nonirrigated trees indicated that the leaf water potential in irrigated trees was lower, by about some atmospheres, than in nonirrigated ones. These differences were closely related to the differences of the water potential in the soil.

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