

Determining the salt (NaCl) tolerant of pistachio rootstocks with respect to respiration rate fluctuation

A. Mohammad Khani¹ and H. Lesani²

1. Isfahan Agriculture Research Center, Isfahan.

2. Dept. of Horticulture, College of Agriculture, Tehran University, Karaj.

In a greenhouse experiment, the seeds of pistachio rootstocks including Badami, Qazvini, Sarakhs and *P. mutica*, were germinated in a incubator. The seedlings were then transfered into plastic vase. The medium culture consist perlite + sand in equal population and seedling were irrigated with half strength of Hoagland solution containing NaCl from 0 to 60 mm throughout the experiment which lasted 85 days. The effect of NaCl on growth and respiration rate of leaf segments was determined and the following results obtained.

Dry weight of leaf, stem and root, as well as stem length, leaf number and damaged leaves of all treatments were determined and their data showed that the cultivars Badami and Qazvini were more salt tolerant than Sarakhs and *P. mutica*.

Respiration rate of leaf segments was measured by Manometric method.

Irrigated plants with water containing sodium chloride showed lower respiration rate compared to control plants. Treatment of the segments of the control plants (irrigated with water not containing NaCl) with NaCl showed higher respiration rate than control segments. The results of these experiments showed an interesting correlation between respiration rate of tissue and the degree of salt tolerance of studied rootstock, which was in the same line with other methods of salt tolerant determination. Pre treatment of rootstocks with NaCl had no effect on the salt hardening.