The Physiological Parameters to Compare for Drought Between Early Stage In Pot and Mature Stage In Field for Melons

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Abstract

Melon research was carried out in order to investigate the relationships of drought responses between young and mature plants. These relationships will be useful to shorten the drought breeding process and it will not be necessary to grow the melon plant until the mature stage. Therefore time, labor and money can be saved in the drought breeding programs. Twenty-nine days old plants grown in pot and 113 days old plants grown in field under the drought stress were compared for some physiological parameters. The number of melon genotypes was 29 for both the pot and field experiments. The parameters investigated were stomatal conductance, membrane injury, leaf water potential, leaf osmotic potential, leaf temperature, leaf Ca and K concentrations. The main results of the melon research were: 1) The data relative to control showed definitely higher relationships than the data in absolute under the drought, 2) The most important relationships between young and mature tomato plants that can be used to shorten screening/breeding process were stomatal conductance, leaf temperature, leaf osmotic potential, membrane injury, and leaf Ca concentration, respectively.

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