Effects of Different Nitrogen Rate Applications during Sowing to Pumpkin (*Cucurbita pepo* L.) Growth, Yield, Evapotranspiration and Water Use Efficiency

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ABSTRACT

In this study, effects of different nitrogen applications during sowing to pumpkin growth, yield, evapotranspiration and water use efficiency were investigated under irrigated agriculture in Kayseri province of Middle Anatolian Region of Turkey. The study, designed in completely randomized block-plots with 4 replications, was conducted in the experimental area of Erciyes University Agricultural Research and Training Center. Develi pumpkin population (*Cucurbita pepo* L.), commonly grown in rainfed agriculture in the region, was used. The treatments were N0, N20, N40, N60, N80 and N100 that consisted of applications of 0%, 20%, 40%, 60%, 80% and 100% of pumpkin nitrogen need, respectively. The rest of nitrogen amounts were applied by fertigation in 5 consecutive irrigations and all treatment were received the same amount of nitrogen. Soil moisture of the treatments were monitored by neutron meter. Depleted water from root zone was applied by drip irrigation system. The highest total leaf area was determined in N100 while the highest total chlorophyll amounts were determined in N80 and N100. Nitrogen applications big than 80% during sowing increased water use efficiency, fruit diameter, fruit yield, seed yield per fruit and seed yield, significantly. Seed yield in N100 was found 139.6% higher than seed yield in N0. The least nitrogen rate during sowing for Develi pumpkin population was offered as 100 kg per ha under controlled irrigation conditions.

Keywords: Nitrogen rates during sowing, Develi pumpkin population, plant growth, water consumption

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