

Effect of Nitrogen Level on Growth, Yield and Nitrate Accumulation in Cucumber (*Cucumis sativus* L.)

A. KASHI and S. M. GHAYOOR BAGHBANI

Professor, Department of Horticulture, College of Agriculture, University of Tehran, Karaj, Iran and Former Graduate Student of Azad Islamic University

Application of high level of chemical fertilizer and in particular nitrogen has created lots of problems for human health and environment. Therefore, it is necessary to determine required level of nitrogen fertilizer which do not cause nitrate accumulation in horticultural products, particularly in vegetable crops. To do this, different levels of nitrogen in the form of urea (0, 50, 100, 150, 200, & 250 kg/pure nitrogen per hectare) were applied to find their effects on growth, yield and nitrate accumulation in cucumber cv. Daminus. This experiment was carried out in Agricultural Research Station of Mashhad in Complete Randomized Block Design with four replications. To evaluate the effect of nitrogen level on growth and yield, several plant and fruit characteristics consisting of number of male and female flowers, length and weight of plants, number and weight of fruits, dry matter percentage of fruits and plant and eventually yield of first and second grade fruits were recorded. Nitrate amount in fruits were measured for every harvest of morning and afternoon using sulfo salicylic acid and Spectrophoto - meter methods.

Results showed that the number of female flowers increased with increasing the level of nitrogen. this increment was correlated with the increasing of length of plant positively. Nitrogen application at levels of 150 - 250 kg/h showed higher total yield production which were significantly different from the other the levels. Nitrate amount in fruit tissues was