

Effects of Mulching and Calcium Application on Growth , Yield & Blossom End Rot Disorder of Watermelon Cv.Charleston Gray

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Watermelon cv . Charleston gray is one of most important cultivars which is grown in Iran. It has some good quantitative and qualitative characteristics but unfortunately is sensitive to blossom end rot. To solve this problem, this experiment was conducted in factorial randomized complet block design with four replications in Research Station and Laboratories of Department of Horticulture, College of Agriculture, the University of Tehran, during years 1997 & 1998. In this experiment black polyethylene was used as a mulch and calcium nitrate was sprayed at concentrations of 0, 4 & 6 gr/l. In 1998, calcium chloride was sprayed at concentrations of 0, 15 & 30 gr/l in addition of previous treatments.

Results indicated that black polyethylene mulch could increase the yield by 85% average of two years due to prevention of weeds growth and keeping soil moisture for longer time. Fresh weight foliage, number and average of fruits per plant and earliness were also significantly affected by black polyethylene mulch. Mulch also reduced the number and weight of affected fruits by blossom end rot about 17% (average of two years) and 39% (average of two years) respectively. Calcium spraying in the form of either calcium nitrate or calcium chloride during both years had no significant effect on evaluated characteristics as well as blossom end rot.

increased with increasing level of applied nitrogen and reached its highest level with application of 250 kg/h nitrogen. The level of nitrate was always higher in fruits harvested in the morning compared to those harvested in the afternoon. The level of nitrate reached its toxicity threshold in treatments of 200 and 250 kg/h nitrogen when harvested in the morning but for afternoon harvest it reached toxicity threshold when 250 kg/h nitrogen was applied. It can be concluded that nitrogen can be applied at 200 kg/h if it is supposed to be harvested in afternoon but only 150 kg/h nitrogen can be recommended if it is supposed to be harvested in the morning.