Effect of irrigation intervals on growth and yield of Pepper (Capsicum annuum L.)


Abstract:

The aim of this study is to estimate the effect of irrigation intervals on the yield and the quality of Pepper under Assiut conditions. Three irrigation intervals (every 7 (IR7), 14 (IR14) and 21 (IR21) days) and three Pepper genotypes (Omega F1, Pical F1 and 1515 F1) were used. Our results showed that irrigating pepper plants every week (IR7) significantly gave the highest ascorbic acid content of pepper fruits, total fruits number per plot, average fruit weight, early fruit yield per feddan, and pepper total yield in both seasons. Also, highest value of soil field capacity was found in samples collected from the IR7 treatment. On the other hand, plants irrigated every 21 days (IR21) had the highest values of percentage of whole plant dry weight and proline content. In both seasons, Omega F1 every significantly gave the highest values of total fruit fresh yield, percentage of whole plant dry weight, and fruit vitamin C content in the second season. Bell pepper 1515 F1 significantly produced the highest values of average fruit weight in both seasons. Interestingly, under deficit irrigation Omega F1 genotype (considered as a drought tolerant genotype) which produced the highest total fruit yield, produced lower leaf proline content than 1515 F1 genotype which is more sensitive to water deficit treatments. We conclude that plant response to water deficit depends on the plant genotype, and not on the proline content.

Keywords:

Drought, Genotypes, Irrigation, Proline, Intervals

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