Response of cut rose flower (*Rosa hybrida*) to biofertilizer application in hydroponic system

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Abstract

Rose flower (*Rosa hybrida*) is appreciated for its beauty, fragrance and long period of flowering. To study the response of cut rose flower to bio-fertilizers, a factorial experiment was performed, with completely randomized design and four replications, in hydroponic greenhouse of Alandasht, Astane Ghods Garden, Mashhad, Iran, during 2009-2010. The first factor was six cultivars of rose flower including: Red ferover, Classic cezaanna, Rock feller, Rimini, Maroussia and Orange juice. The second factor was three biological fertilizers including biofarm, nitrajin and nitroxin and a no-inoculated treatment (control). In this experiment, traits such as leaf area, number of nodes, number of branches, first flowering occurrence, vase life and percentage of nitrogen, potassium and calcium were measured in each treatment and the means were compared by Duncan Multiple Range Test. Results showed that the effect of cultivar and compound effect of cultivar and fertilizer for number of nodes, number of branches, first flowering date, vase life, leaf area and nitrogen, potassium and calcium concentration were significant ($P<0.05$). The effect of bio-fertilizer treatments on leaf area and concentration of nutrients was significant ($P<0.05$). The highest concentration of nutrients was observed in Red ferover cultivar. Interaction effect of cultivar and bio-fertilizer treatments showed that in the Red ferover, Classic cezaanna and Maroussia cultivars, the fertilizer treatments increased nitrogen concentration in the leaves. The biofarm and nitroxin fertilizers increased leaf calcium concentration in Red ferover and Rimini cultivars significantly ($P<0.05$). The nitrajin and nitroxin treatments reduced calcium concentration, as compared to control, in the Rock feller cultivar.

Keywords: Bio-fertilizers, Rose cultivars, Nutrients concentration.

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