

Effect of spraying nutritional solution “PRO.SOL” and chelated Iron on growth and flowering of Gazania plant *Gazania splendens* L.

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Abstract

The experiment was premeditated to investigate the effect of supplying nutrients into plants vegetative system and study the improving response on plant growth and flowering. *Gazania* was selected as locally important ornamental plant.

The research was conducted at the Faculty of Agriculture Nursery, University of Kufa, Najaf Governorate, during the growing season 2010-2011 to study the effect of spraying nutritional solution “PRO.SOL” and chelated Iron on vegetative and floral growth parameters in *Gazania* plant. The experiment was designed utilizing Randomized Complete Block Design (R.C.B.D) in three replicates with two factors; the first was using three concentration levels of nutritional solution PRO.SOL (0.00, 5.00 and 10.00 mg. Liter⁻¹). The second factor was four concentration levels of chelated Iron (0.00, 30.00, 60.00 and 90.00 Mg. Liter⁻¹). The interaction between the two factors was also analyzed. The means were compared using L.S.D test at probability level 0.05.

The results showed that spraying PRO.SOL at concentration 10.00 mg. Liter⁻¹ or chelated Iron concentration level 90.00 mg.Liter⁻¹ improved growth parameters. There was significant increase in; number of total leaves per plant, shoot dry weight, leaves total chlorophyll content, number of offshoots, number and length of primary roots, length of the peduncle, number of flowers, petals and flower dry weight. Meanwhile leaf contents of carbohydrates and phosphorus percentage and Iron leaf content increased significantly in comparison with the control treatment (unsprayed plants) which gave the least values. The interaction results showed that spraying with nutritional solution PRO.SOL at concentration level 10.00 ml. L.⁻¹ with 90 mg. L.⁻¹ chelated Iron had a significant increase in all studied growth parameters; number of total leaves in plant, shoot dry weight, leaves total chlorophyll content, number of offshoots, number, length of primary roots, length of the peduncle and flower dry weight, i.e. the number of flowers and petals gave 8.33 flower and 18.67 petals compared with the control treatment (sprayed with distilled water) which gave 3.33 flower and 13.00 petals. Meanwhile leaf contents of carbohydrates, phosphorus percentage and Iron leaf content increased significantly in comparison with the unsprayed plants which gave the least values.

Results of the experiment may be concluded that spraying nutritional solution PRO.SOL with concentration level 10 ml.l⁻¹ and chelated iron with concentration level 90 mg.l⁻¹ improved significantly the growth and flowering characteristics of *Gazania* plant.