

## **EFFECT OF GIBBERELIC ACID AND NANO IRON FERTILIZER TREATMENTS ON FLOWER BUD AND FLOWER BRANCH FORMATION IN ROSE CUT FLOWERS "FULL HOUSE CV."**

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**INTRODUCTION:** Rose (*Rosa hybrida*) belonging to the Rosaceae family and is one of the most popular flowers that used in pot and as cut flower around the world. Most of the world's exports of cut flowers related cut flowers roses. Gibberellins, especially gibberellic acid (GA3) plays an important role in the growth and development of plants (Dhiman, 2001). The use of GA3 for boosting the growth and vigor of various horticultural plants is very old known and well documented (Gul et al., 2006). GA3 improves yield and quality of ornamental plants via plant growth incitation and stem elongation (Fathipour and Esmaellpour, 2000). Iron is one of the necessary nutrients for the growth and reproduction of plants and is essential for their survival. This nutrient has an important role in photosynthesis process, respiration, absorption and production of Nitrogen, and production and development of chloroplast in plants. The role of Iron in photosynthesis and respiration process is due to the fact that Iron takes an active part in oxidation and reclamation reactions in chloroplast and mitochondrion. On the other hand, Iron has a substantial role in the production of chlorophyll (Marschner, 1995). Therefore in this investigation, the effect of gibberellic acid and nano iron fertilizer treatments were studied in order to find a strategy to increase the number of flower branches on rose cultivar full house.

**MATERIAL AND METHODS:** The experiment was carried out from June to October in 2013 in a greenhouse in Isfahan in the form of factorial 3\*3 with a completely randomized design in 3 replication. The treatments were gibberellic acid in 3 levels (0, 80, 120 mg L<sup>-1</sup>) and nano iron fertilizer in 3 levels (0, 1000, 1500 mg L<sup>-1</sup>) which were applied by foliar spray.

**RESULTS AND DISCUSSION:** The obtained results based on ANOVA variance analysis chart show that the effect of gibberellic acid on features of number of flower branch in bush and the number of flower bud in bush was significant at the statistic ( $P < 0.001$ ) and the effect of nano iron fertilizer on the feature of number of flower branch and number of flower bud was significant at the statistical ( $P < 0.05$ ) and ( $P < 0.01$ ) respectively. Furthermore, the interactive effect of gibberellic acid  $\times$  nano iron fertilizer was not significant on both features. The results from the comparison of means revealed that gibberellic acid 120 ppm treatment had the highest effect on both features and there was a significant difference between this treatment and the control treatment. This is in line with the results obtained by Hashemabadi and Zarchini (2010). who investigated the effect of gibberellic acid on the qualitative features of Rosa cultivar Poison. In addition, other researches have shown that gibberellic acid is one of the plant hormones which has an important role in plant metabolism. The application of gibberellic acid causes the plant to grow (Kumar et al. 2003).

**Keywords:** gibberellic acid, nano iron, rosa hybrida.



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