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EFFECT OF GIBBERELLIC ACID AND ZINC SULFATE ON THE QUALITY AND QUANTITY (*GLADIOLUS GRANDIFLORUS*) IN ISFAHAN

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ABSTRACT

Given that *Gladiolus grandiflorus,* Ornamental and cut flowers And it can be used in various *cere*monies, So having good green color with Long and thick branches One of The merits of the flower, As a result of such flowers, Of marketable appropriate. In this study, Effect of gibberellic acid and zinc sulfate on the quality and quantity Gladiolus, in a factorial randomized complete block design was studied. Results showed that 100 mg of gibberellic acid With 200 grams of zinc sulfate Thereby increasing the diameter of the flower, Durability flower, Diameter flower As well as 100 grams of zinc sulfate Along with 100 mg of gibberellic acid The shelf life after harvest And 100 g of zinc sulfate With 50 mg/ Liter gibberellic acid Thereby increasing the height of the stems of the flower production And number of florets In the (*Gladiolus grandiflorus*). As well as 200 grams per liter of zinc sulfate Along with 50 mg/ Liter of gibberellic acid the highest percentage of chlorophyll in the leaves were produced. Therefore, based on results from 100 to 200 grams of zinc sulfate With 50 to 100 mg of gibberellic acid, uantitative and qualitative characteristics of the plant increases.

Keywords: Zinc sulfate, *Gladiolus grandiflorus,* Gibberellic acid quantitative and qualitative characteristics

INTRODUCTION

Today, the industry is growing cut flower growers tend to produce. Gladiolus consumption is high due to the variety of colors and vase life mourning ceremony and celebration is expanding (Zadnur et al.,(2011), Gladiolus with Gladiolus grandiflorus belonging to the family of Iris (Iridaseae) of the most important cut flowers and bulbs in the world. Hassanpour Asil research and Hoseyni (2012) on the shelf life of cut flowers Gladiolus carried out a number of treatments found that the impact on shelf life, water absorption, chlorophyll, solids petals, and percent opened floret, floret diameter and fresh weight of flowers is more effective and cause lasting. Ahmad Pur and zarghami (2009) in a study to determine the effects of gibberellic acid on the growth and flowering varieties of bulbs in Jiroft, a test carried out, the results of the combined analysis of variances showed that GA3 on germination percentage, shoot length flowering, flower diameter and flower number leaf at 1% and 5% level was significant. In a study in 2013 to determine the optimal concentration of benzaldehyde and gibberellic acid (GA3) to break dormancy Gladiolus corms in relation to the storage period and the effect of gibberellic acid on the growth and development of gladiolus corms were evaluated. The results showed that GA3 at 100 ppm was treated dormancy. Corm treated with 75 ppm GA3 and stored for 90 days maximum spike (56.9%) were produced. Corm treated with 75 ppm GA3 and stored for 90 days maximum spike (56.9%) were produced.

Corm also treated with 100 ppm GA3 and stored for 90 days, the heaviest (21.50 grams and 18.82 grams, respectively) and the largest (4.46 cm and 4.17 cm), corms produce he (Khan et al., 2013). GA3, NAA and BA at different concentrations significantly increased the average length of spike, florets and ears were on the treatment plant will increase nearly as much leaf surface of the product during the the growth period. Increased leaf area resulting in increased synthesis of absorption, may contribute to an increase in length is by this treatment. Increase during spike elongation by GA3 due to the node as a result of increased cell division and cell elongation in the apical meristem. GA3 growth and photosynthesis increases metabolic activity caused more transport and use of the products of photosynthesis and thereby to increase the length. Fakhraee Lahiji and colleagues (2009) the effect of spraying different concentrations of zinc to produce more flower bulbs and

corms are examined. The results showed that different concentrations of zinc on the corm production has been affected. However, with the increasing concentration of zinc sulfate in a plant bulb weight (25.62 g) and the blind (2.24) and the diameter of the blind (3.56) was significant at the 5% level. Abundant limestone and phosphate fertilizers than required in the past, absorbable form of iron and zinc in the soil, reduce, the use of chelated iron and zinc in soils is effective (Atighehchi, 1983). Among the micronutrients, the greatest impact on growth and the number of bulbs is Kvrmhay (Sharow et al., 1977). Zinc increased 0.2 percent during the spraying floret, florets, plant height and leaf number is (Parabat, K., 2001).

Train et al (2009) Effect of GA, BA and sucrose on postharvest physiology, cell membrane stability and shelf life of cut flowers and bulbs using 50 mg of each solution were studied. The results showed the highest cell membrane stability index in cut flower spikes, 6 days of treatment with gibberellic acid and BA respectively. Brdydh Gladiolus flowers treated with 50 mg twice gibberellic acid and sucrose increase and improve the quality of life of potted flowers and more flowers in clusters at a time indicated. Hassanpour Asil and Hassani (2008) study the effects of different chemical compounds to increase the shelf life of cut flowers and bulbs were evaluated. In this study, the combination of citric acid, citrate 8-hydroxy quinoline and GA (50, 100 and 150 mg per liter), aluminum sulfate and distilled water as a control. Results showed that sucrose + acid treatment Citric + gibberellic acid 150 mg per liter increase in chlorophyll had the greatest impact and improve the shelf life of gladiolus.

MATERIALS AND METHODS

To evaluate the effect of zinc and hormone gibberellic acid on quantity Flower bulbs, three levels of the hormone gibberellic acid (50, 100 and 150 mg) and foliar (100, 200 and 300 mg l) and control on flower bulbs Supreme Rose is examined. This experiment with three replications in a factorial randomized complete block design, based in the Isfahan in 2015 was conducted in the greenhouse. For this experiment, 30 pots with a diameter of 25 cm and then a uniform soil for all pots will be ready. First produced corms that are almost the same size in diameter and 8 cm in depth were planted in pots. Then tap water pots were watered on a date. In this study, plant height in the final stage, flowering stem diameter, number of corm production plant chlorophyll content

measurements and by application Mstatc statistical analysis and comparison of means by Duncan will be evaluated.

RESULTS AND DISCUSSION

Table 1: Average Square of the main effects and interactions gibberellic acid and sulfate on the characteristics bulbs

number of production projects	Chlorophyll	Diameter	Plant height	Degree of freedom	Sources of changes
0/148	0/008	0/259	2/704	2	**Repeat**
0/259**n.s**	0/002**n.s**	2/37**	608/481**	2	**Factor A**
1/259	0/003	0/204	10/648	4	**Error**
1/593**	0/039**	0/593**n.s**	177/926**	2	**Factor B**
0/204**n.s**	0/000**n.s**	0/037**n.s**	4/704 **n.s**	4	**The interaction A × B**
0/333	0/002	0/278	3/389	12	**Error**

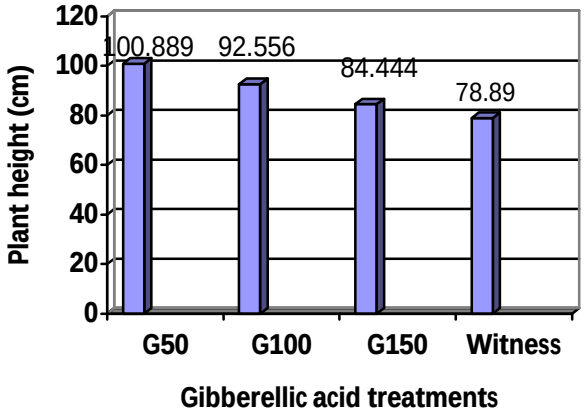

Figure 1: compares the different gibberellic acid treatment plant bulbs

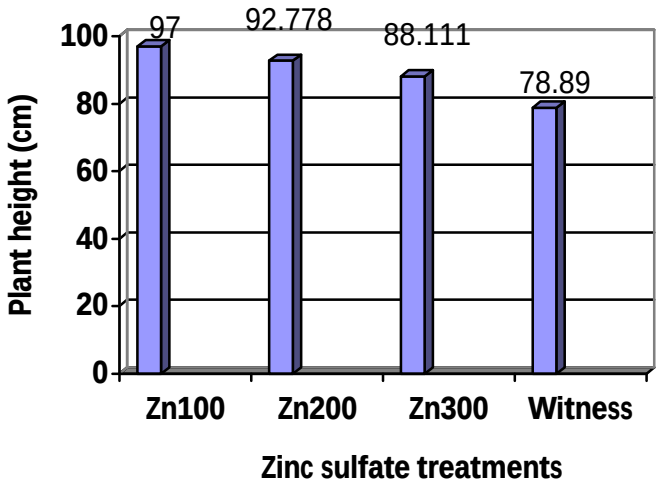

Figure 2: Compare different treatments with the use of zinc sulfate plant bulbs

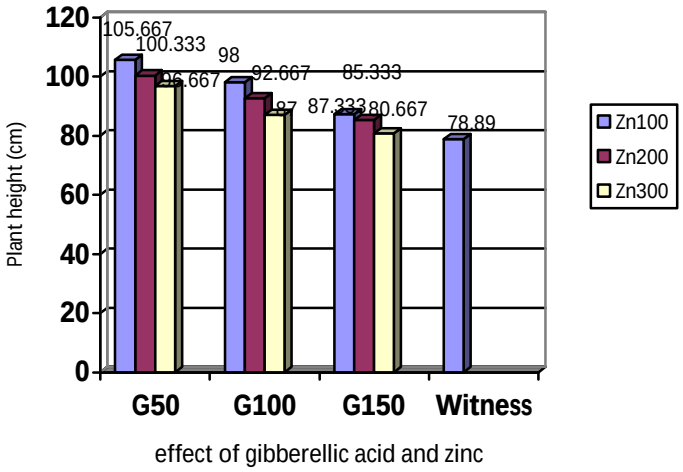

Figure 3: Compare the effect of gibberellic acid and zinc sulfate to plant bulbs

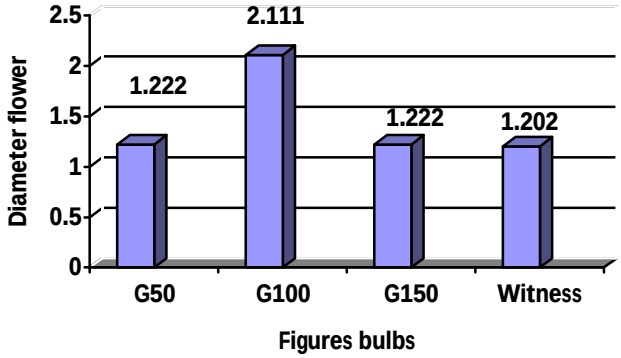

Figure 4: compares the treatment of various diameter flowering bulbs gibberellic acid

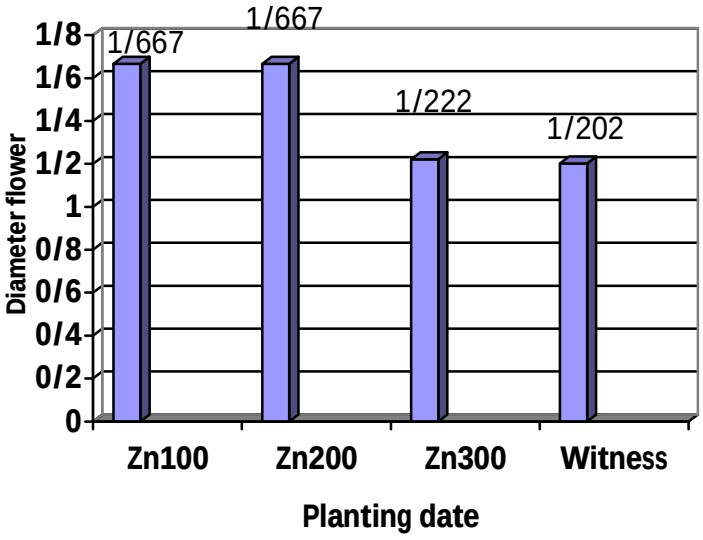

Figure 5: compares the diameter of flowering bulbs in different treatments Zinc

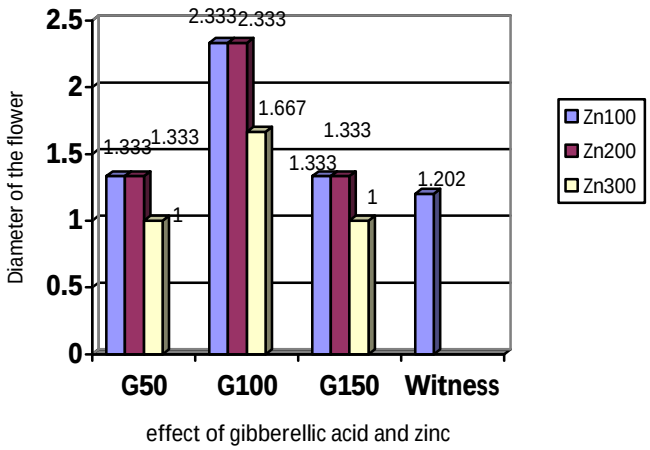

Figure 6: compares the effect of gibberellic acid and sulfate on the diameter of flowering bulbs

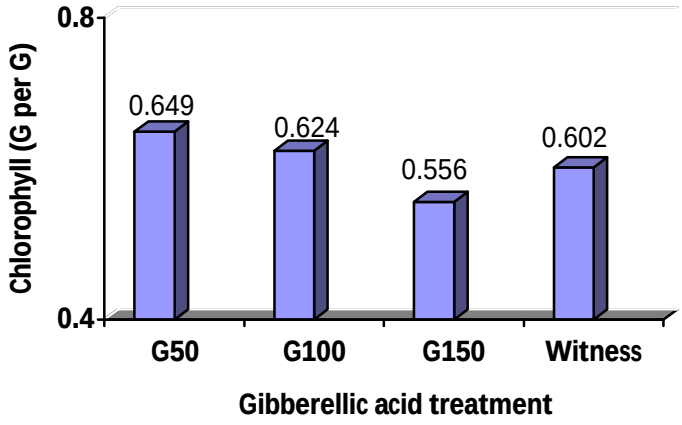

Figure 7: Comparison of chlorophyll bulbs in the treatment of gibberellic acid

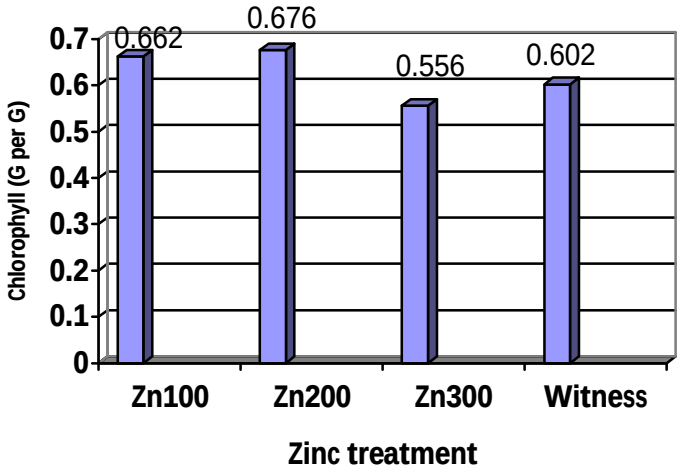

Figure 8: Comparison of chlorophyll bulbs in different treatments Zinc

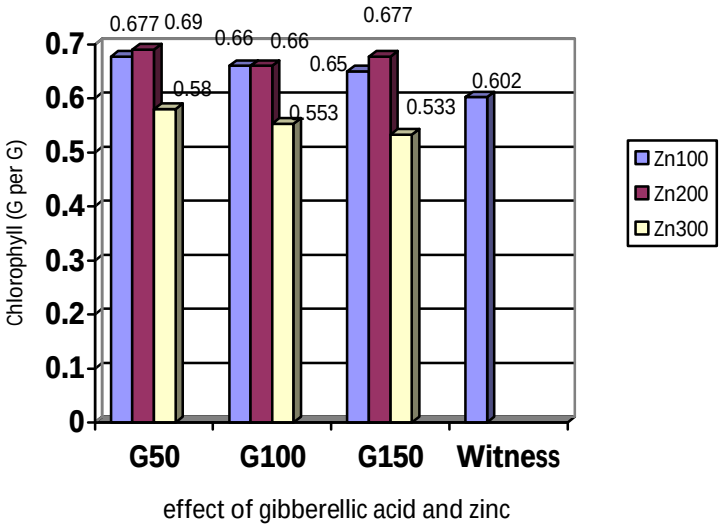

Figure 9: Compare the effect of gibberellic acid and zinc sulphate on chlorophyll bulbs

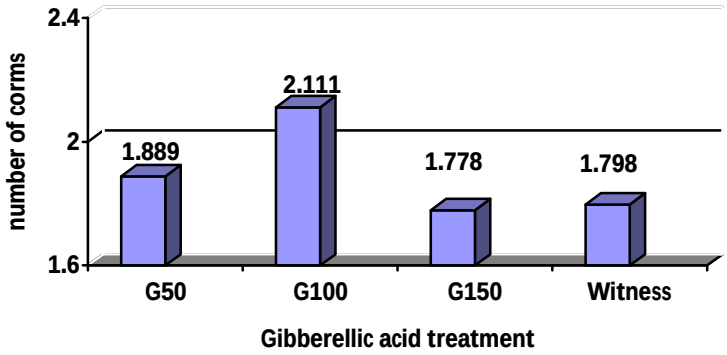

Figure 10: Comparison of Gladiolus corms in the treatment of gibberellic acid

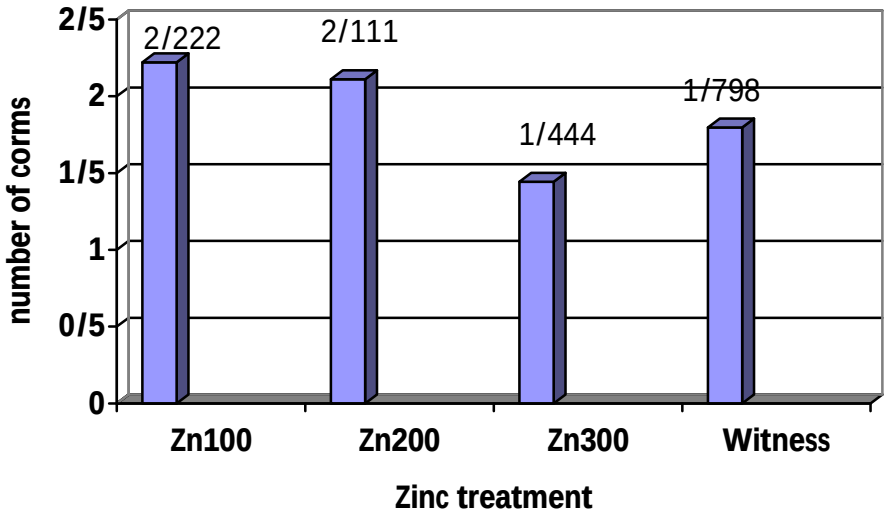

Figure 11: Comparison of different treatments Gladiolus corms Zinc

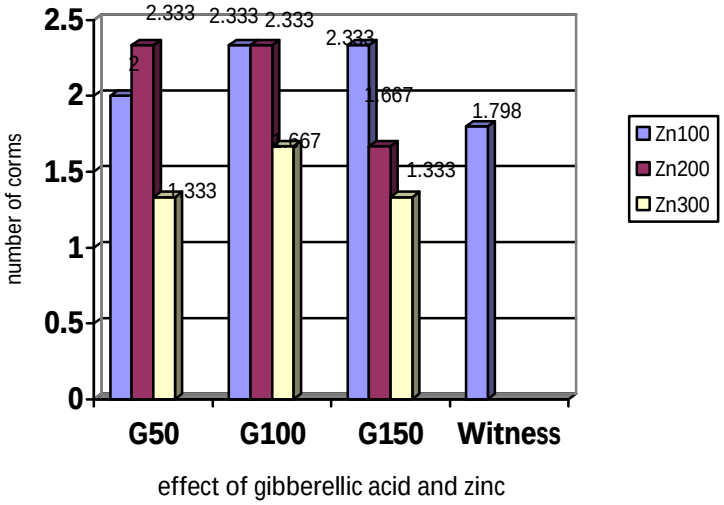

Figure 12: compares the effect of gibberellic acid and zinc sulphate on the number of Gladiolus corms

CONCLUSION

Given that the purpose of cultivating plants harvested bulbs with flower stems Blndtrdaray bigger, more and more durable, so based on data obtained in this study Vsvlfat hormone gibberellic acid on the quality and physiological characteristics flower bulbs are effective in Isfahan. In this study, the aim of increasing the length of inflorescence and floret diameter and chlorophyll attention is so application of gibberellic acid combined with 100 mg 200 grams of zinc increased flower size, flower stem diameter and 100 g zinc and 50 mg of gibberellic acid increases the height and number of florets in the flower bulbs. Therefore, based on results from 100 to 200 grams of zinc with 50 to 100 mg of gibberellic acid plant will increase the quantity. If the goal is the production process using 100 grams of zinc and 100 ppm gibberellic acid showed the best results and highest corm produced.

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