EFFECT OF RADIATION AND GIBBERELLIC ACID ON THE GROWTH AND FLOWERING OF GLADIOLUS CORMS

By

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Apprroval Sheet

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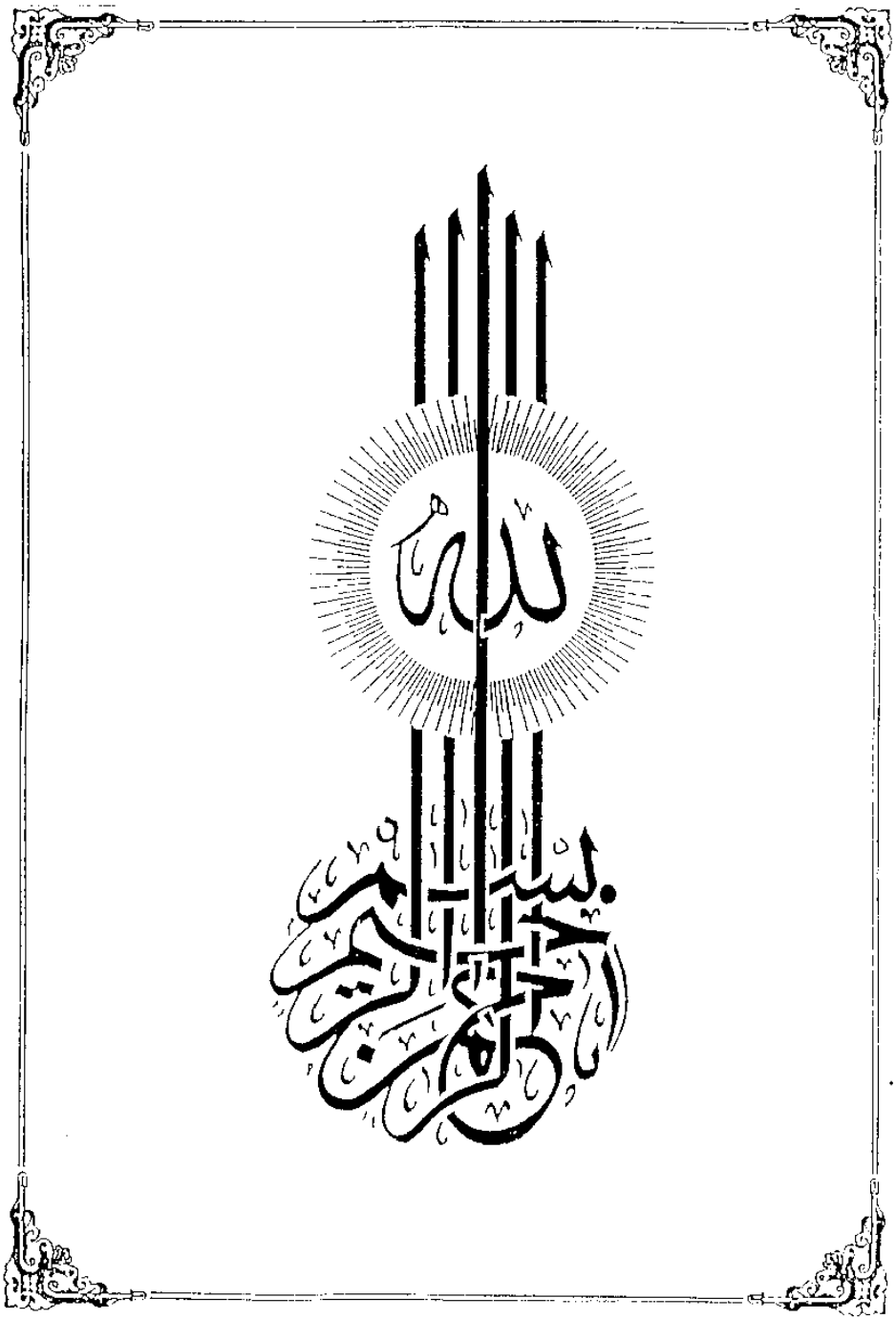

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Abstract

This work aimed to study the effect of radiation and gibberellic acid, individually or combined, on growth and flowering of gladiolus corms. There was two experiments with two varieties of gladiolus (Peter Pears and Mascagni).

The first experiment was dealing with the effect of gamma radiation and/or gibberellic acid on imported corms. It included 5 doses of gamma rays (Co-60) in combination with 5 concentrations of GA_3. A split plot design with 3

replicates was adopted. Gamma ray treatments were assigned as main plots, whereas GA_3 treatments were distributed as sub-plots. Results indicated that irradiating gladiolus corms before planting with low gamma ray doses (5 & 10 Gy for var. Peter Pears and at 10 & 20 Gy for var. Mascagni) stimulated corm sprouting and plant growth, accelerated flowering and improved flower quality and nutritional status of plants. Also, GA_3 at 100 - 200 ppm for var. Peter Pears and 200 - 400 ppm for var. Mascagni had a benefical effect on the studied parameters. Moreover, combination between irradiation and GA_3 was more effective than single treatments on plant growth, flowering and nutritional status. Accumulative and/or synergetic effect of the studied factors were mostly positive and more beneficial.

The second experiment was dealing with the effect of gamma radiation or gibberellic acid (individually) on virgin corms (newly dug) of gladiolus. It included 5 doses of gamma rays or 5 concentrations of GA_3. A complete randomized block design, with 3 replicates, was adopted. Results indicated that response of sprouting to gamma rays or GA_3 treatments depended on the variety used, where var. Peter Pears responded to irradiation more than var. Mascagni. Whereas, the reverse was noticed with GA_3. Peter Pears variety required higher doses of radiation and lower levels of GA_3 than Mascagni variety to achieve the best results.

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