PHYSIOLOGICAL AND HORMONAL STUDIES ON THE GROWTH AND FLOWERING OF GERBERA PLANTS

BY

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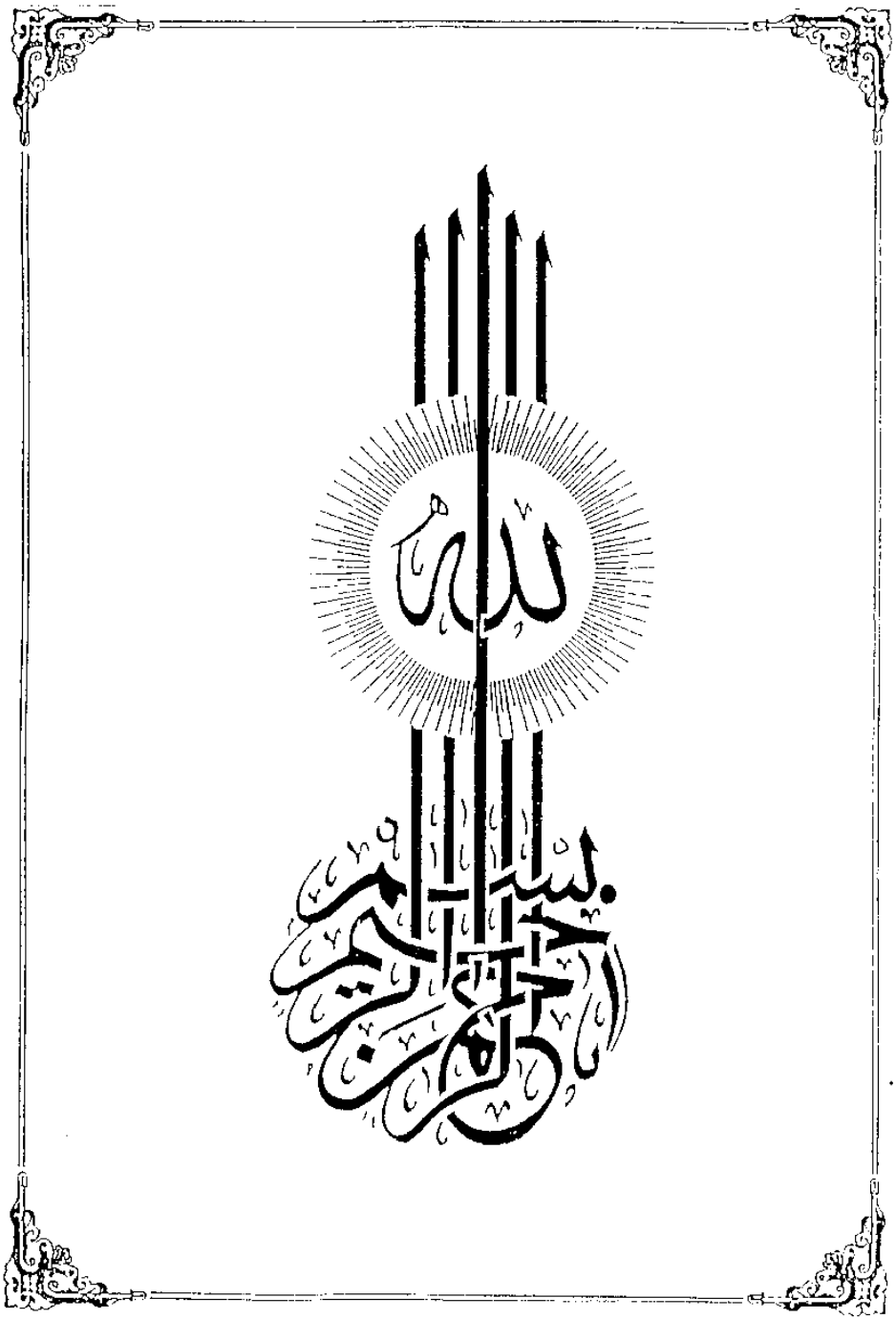

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ABSTRACT

Gerbera jamesonii, is a perennial herb grown for its beautiful shape,, wide range of colors and lasting for a long time in vases. The main goal of this investigation is to study the effect of spraying the plants with gibberellic acid, and kinetin at different concentrations and their combination, besides to study the effect of light treatments in a separate experiment for certain hours, as an attempt to improve the flowering qualities of the plants and to alter the time of flowering and prolong the flowering period. Two experiments were carried out to reach the main purposes of this work.

First Experiment:

This experiment disclosed the effect of the growth regulators GA_3 at the rates of 100,200 and 400 ppm. and kinetin at the rates

of 25,50 and 100 ppm. and the combination between these treatments in addition to the control on Gerbera jamesonii plants. The results indicate that there were earlier flowering and prolonged flowering period with the combined treatment between GA_3 at the rate of 200 ppm. and kinetin at the rate of 25 ppm. Also significant increases were obtained in number of side shoots,, and leaves, leaf area, fresh and dry weight of leaves and flowers, number of flowers/plant, diameter of flower head, length and thickness of flower stalk, nitrogen percent, total Carbohydrate percent, RNA, DNA and total indoles contents. While, this treatment resulted a decrease in the plant contents of total phenols.

Second Experiment:

The experiment was designed to study the effect of additional light treatments for 2 and 4 hours daily on the growth and flowering of gerbera plants. The results indicate that there were significant increases in number of side shoots and leaves, leaf area and fresh and dry weight of leaves and flowers, flower stalk length, diameter of flower head, nitrogen percent, total carbohydrate percent, RNA, DNA and total indoles content for the additional light for 4 hours daily. While, it decreased the plant content of total phenols. On the other hand, the additional light treatments did not affect the time from planting to flowering, flowering period and the number of flowers/ plant, or thickness of flower stalk. From this investigation it is clear that the combined treatment between GA_3 at the rate of 200 ppm. and kinetin at the rate of 25 ppm. gave the earliest flowering and prolonged the flowering period with high qualities of gerbera flowers.

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