GROWTH RESPONSE OF *HYOSCYAMUS MUTICUS* L. TO TEMPERATURE HARDENING IN RELATION TO ALKALOIDAL PATTERN

BY

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Approval Sheet

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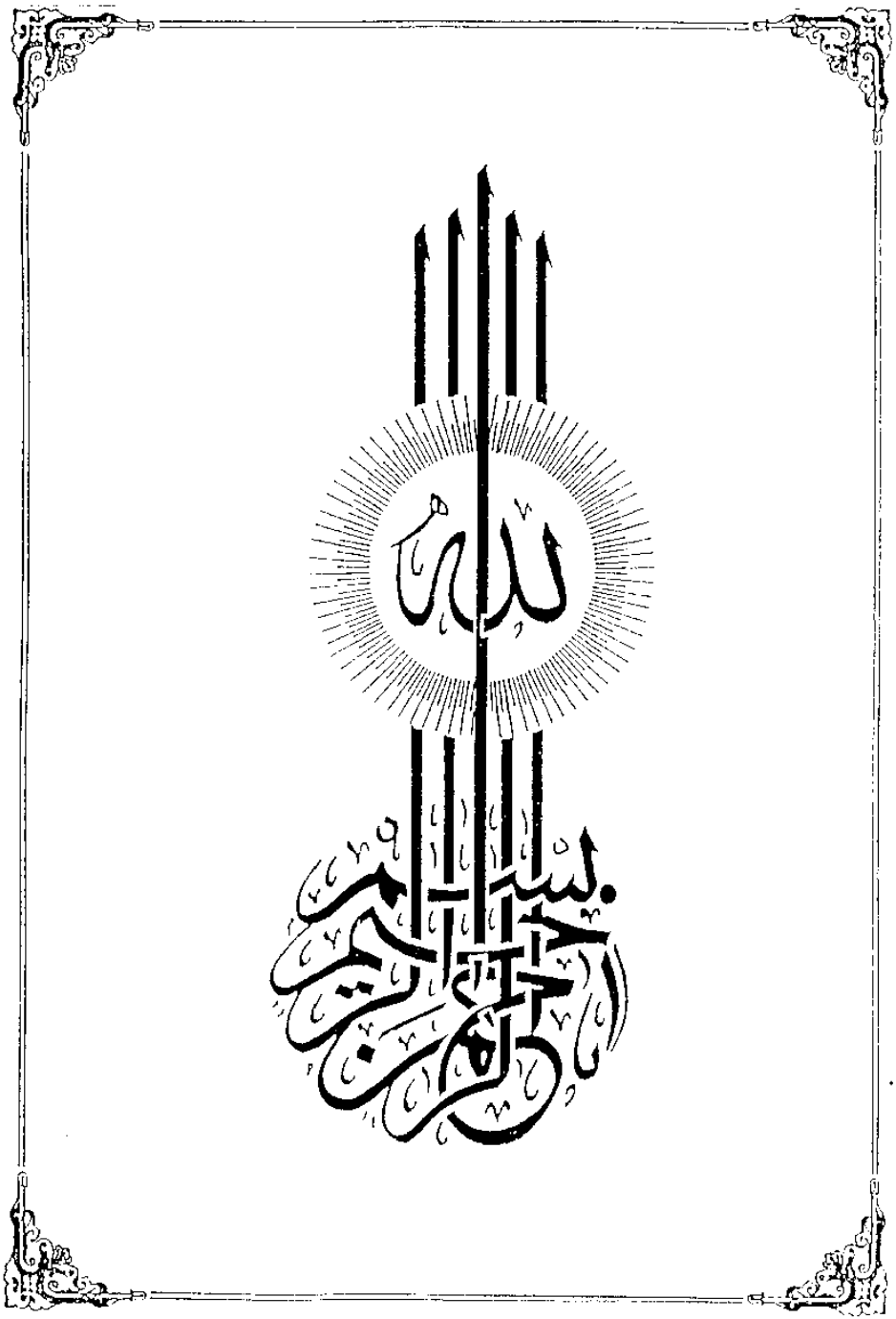

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ABSTRACT

This study was carried out to clear the effect of temperature hardening and amino acid treatments on the growth and alkaloidal pattern of Hyoscyamus muticus L.

For this target, two pot experiments were conducted in the seasons 1987/88 and 1988/89 at the Experimental Farm of the National Research Centre, Dokki, Giza, Egypt. The obtained result could be summarized in the following:

1. Response to heat-hardening treatments:

Seeds were exposed to heat at 40°C or 50°C for 10, 20 and 40 minutes in addition to the control treatment that took place at room temperature (ranging from 25 to 28°C the results of that experiment can be shown in the following:

1. The highest values of fresh and dry weight of the plant organs were obtained at the treatments either at 40°C for 40 minutes or 50°C for 10 minutes.

2. The highest values of total alkaloid, total nitrogen and photosynthetic pigments were obtained with the same mentioned treatments.

2. Effect of amino acids application:

Three amino acids (ornithine, proline and cysteine) were applied as foliar spray on henbane plants of 3 monthes age in the concentrations of 10, 50 and 100 mg/l. in addition to the control treatment. These treatments were repeated for another time after one week. The results of these experiment could be sumarized in the following:

1. The highest values of vegetative growth measurements were obtained at the treatment 50 mg/l. ornithine and 100 mg/l. either proline or cysteine.

2. The highest total alkaloid, total nitrogen and photosynthetic pigments were obtained with the same treatments.

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