EFFECT OF SOME AGRICULTURAL TREATMENTS OF PRODUCTIVITY AND QUALITY OF ONION.

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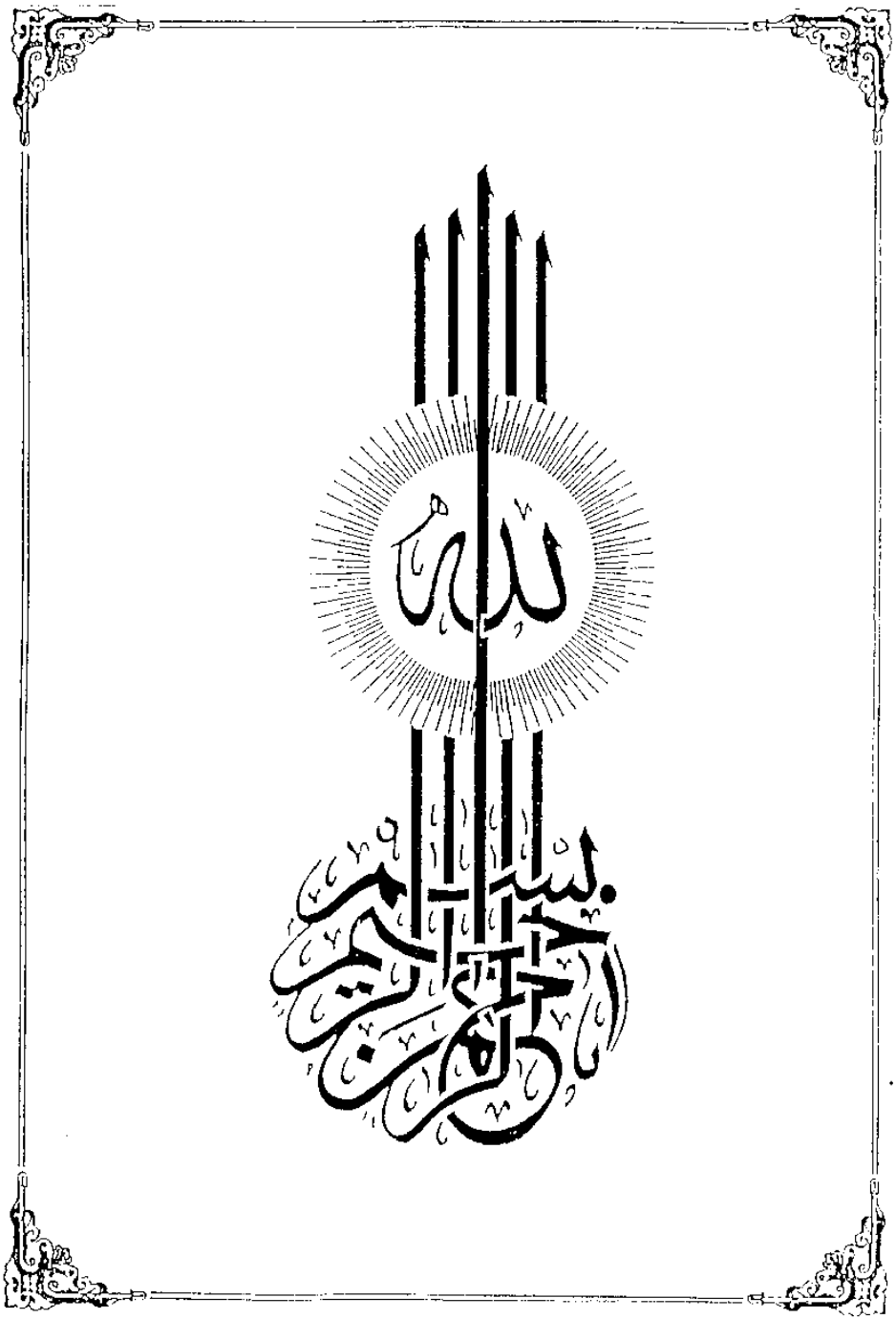

APPROVAL SHEET

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ABSTRACT

Asmaa Reda Mahmoud. (Effect of some agricultural treatments on prod uctivity and quality of onion), unpublished Ph.D. Ain Shams University, Faculty of Agriculture, Department of Horticulture, 1999.

Two field experiments were carried out at the experimental farm station of National Research Central, Shalakan, to investigate the effect of some agricultural treatments, i.e. irrigation, sulphur and potassium on vegetative growth features, yield and its quality of onion. The important obtained results are as following:

1. The best growth parameter of onion plant as expressed by number and area of tubar blades, fresh and dry weight of whole plant and its different organs resulted from that plants which received the irrigation water after depletion of 60% of available soil moisture. Also the highest values of chlorophylls and net assimilation rate were obtained with irrigation of 45-60% depleted water.

2. The bulb yield of exportable and local marketable yield of onion resulted with that plants irrigated after depletion 45-65% of the available soil moisture. Also that plants gave onion bulbs which has more nutritional values, i.e. N, P, K, S, and total carbohydrates.

3. Addition of sulphur for the soil of onion plant by rate of 450 kg/fed. gained the best values of plant growth as well as total marketable yield. The obtained results revealed that there was no significant difference within addition 300 or 450 kg S fed. consequently, it could be stated that the beneficial and economical rate of S for onion plant is 300 kg fed.

4. The interaction of irrigation x S addition had no significant effect on most growth characters and total bulb yield and its different components.

Potassium fertilizer had significant effect on all plant vegetative growth.

The total onion bulb yield and its components were increased by increasing k addition up to 300 kg fed and caused a reduction in weight of double, bolting as well as cull bulbs compared to control treatment. Adding potassium decreased the weight loss percentage of onion bulb during storage period.

Key words:

Growth characteristics, yield of onion bulbs, physical and chemical components, available soil moisture (ASM), volatile components, sulphur, storage ability, potassium sulphate, yield, bulb quality.

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