YIELD AND QUALITY RESPONSE OF CERTAIN FLAX VARIETIES TO NITROGEN FERTILIZATION AND PLANT DENSITY

BY

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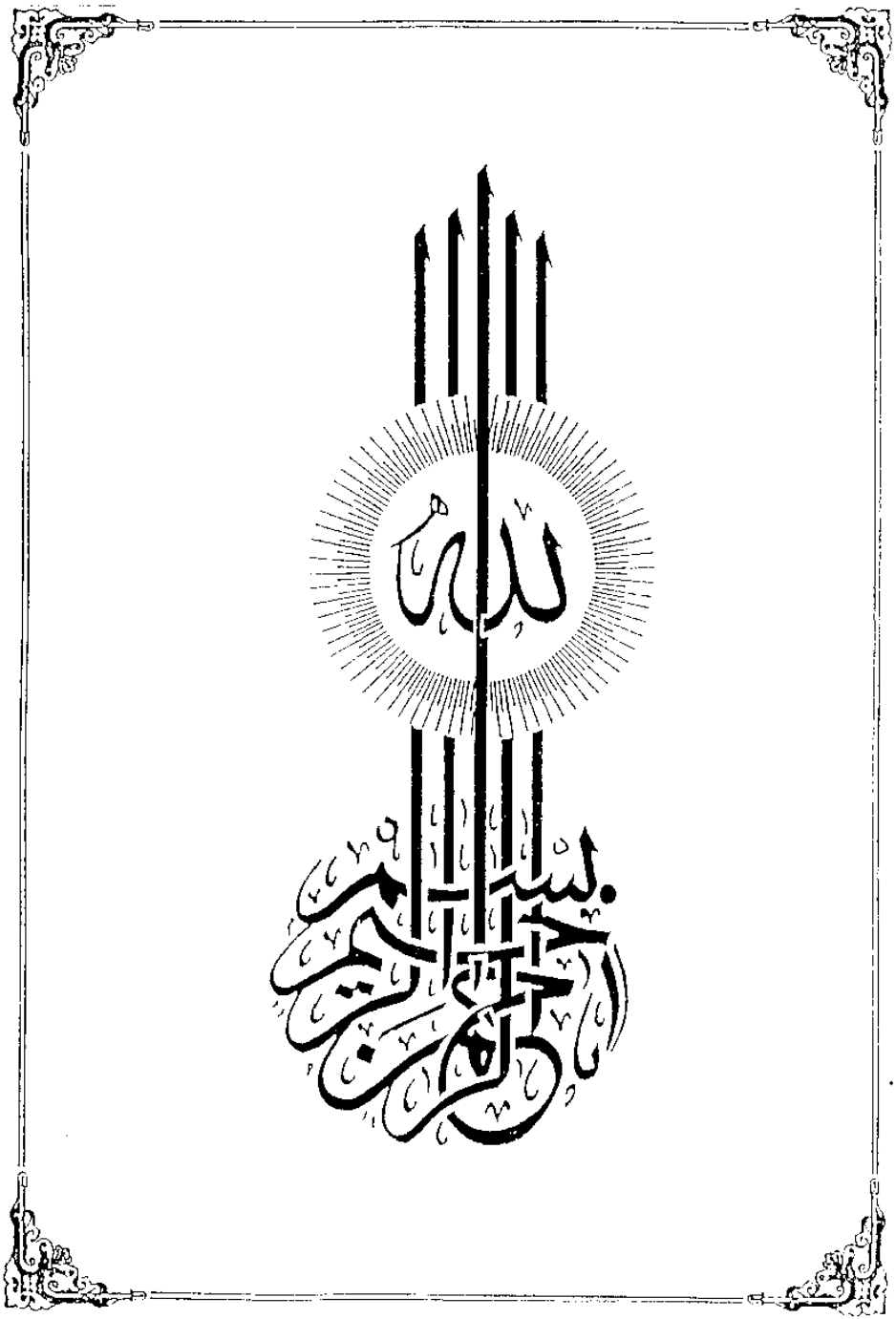

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ABSTRACT

The response of two flax varieties i.e Giza "7" and Giza "8" to three levels of nitrogen fertilization i.e (45 ,60, and 75 kg N/fed) and three seeding rates i.e(40, 50 and 60kg / fed) was studied .

Data on growth , growth analysis , yield of fiber ,and oil and their Properties were obtained . The main findings may be summarized as follows :-

1- Leaves area / plant ., total and technical length of Giza "8" exceeded significantly those of Giza "7" at different stages of growth . On the other hand , NAR , RGR and CGR of Giza "7" were higher than those of Giza 8" .
2- Flax cultivar exhibited significant differences in fiber yield, fiber fineness and fiber percentage where Giza "7" showed higher values than that of Giza "8".
3- Fiber yield / plant and / fed ., fiber fineness and fiber percentage increased with increase in seed rate up to 60 kg / fed . Opposit results were obtained with regard to number of capsules / plant , oil percentage , acid value and refractive index .
4- Growth characters recorded were gradually increased as nitrogen fertilizer increased from 45 to75kg N/fed. Fiber yield and oil yield were also increased .
5- The interaction between factors studied on yield and yield attributes was shown whenever significant effect was obtained .

KEY WORDS :

Linum usitatissimum L .- Flax - Varieties - Nitrogen fertilizer - Plant density-Growth analysis- Oil and fiber Properties - Seed and fiber yield .

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INTRODUCTION

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Flax (Linum usitatissimum L.) is considered the most important fiber crop other than cotton which can be grown in Egypt . It plays an important role in Egyptian national economy due to export as well as local industry . It is grown in Egypt and some other countries as a dual purpose crop for its seed and fiber . Flax plants could serve different and important functions . Fibers from the stems are used to manufacture lines , making cloth , ropes , and twines . Linseed oil is especially valued for its excellent drying quality . Linseed oil is still used as the base of many high quality paints , although it has been replaced by modern synthetic compounds in some products. In addition , straw is used to some extent in up holstery , insulation wall board and paper production .

Flax varieties may differ considerably in their growth habitate , i.e branching , stem diameter and fruiting zone . Their response to cultural practices is expected to give their higher production for fiber or / and oil . Nitrogen fertilization and seeding rate are among the factor affecting flax yield and quality. This is more obvious for the new released varieties , i.e. Giza "7" and Giza "8" .

However , the main objectives of the present investigation were to study yield and quality response of two flax varieties namely Giza "7" and Giza "8" to nitrogen fertilization and plant density in order to find out the optimum seeding rate and nitrogen fertilizer level for higher fiber and seed production . Due consideration were given to fiber technical properties response to such agronomic practices.

REVIEW OF LITERTURE