# USE OF *AZOLLA* AS A BIOFERTILIZER TO REDUCE THE DEPENDANCE ON THE CHEMICAL FERTILIZERS

By

MOHAMED EL-SAYED MAHMOUD NOUR-ELDIN

B.Sc. Agric. (Biochemistry), 1980
Ain Shams University

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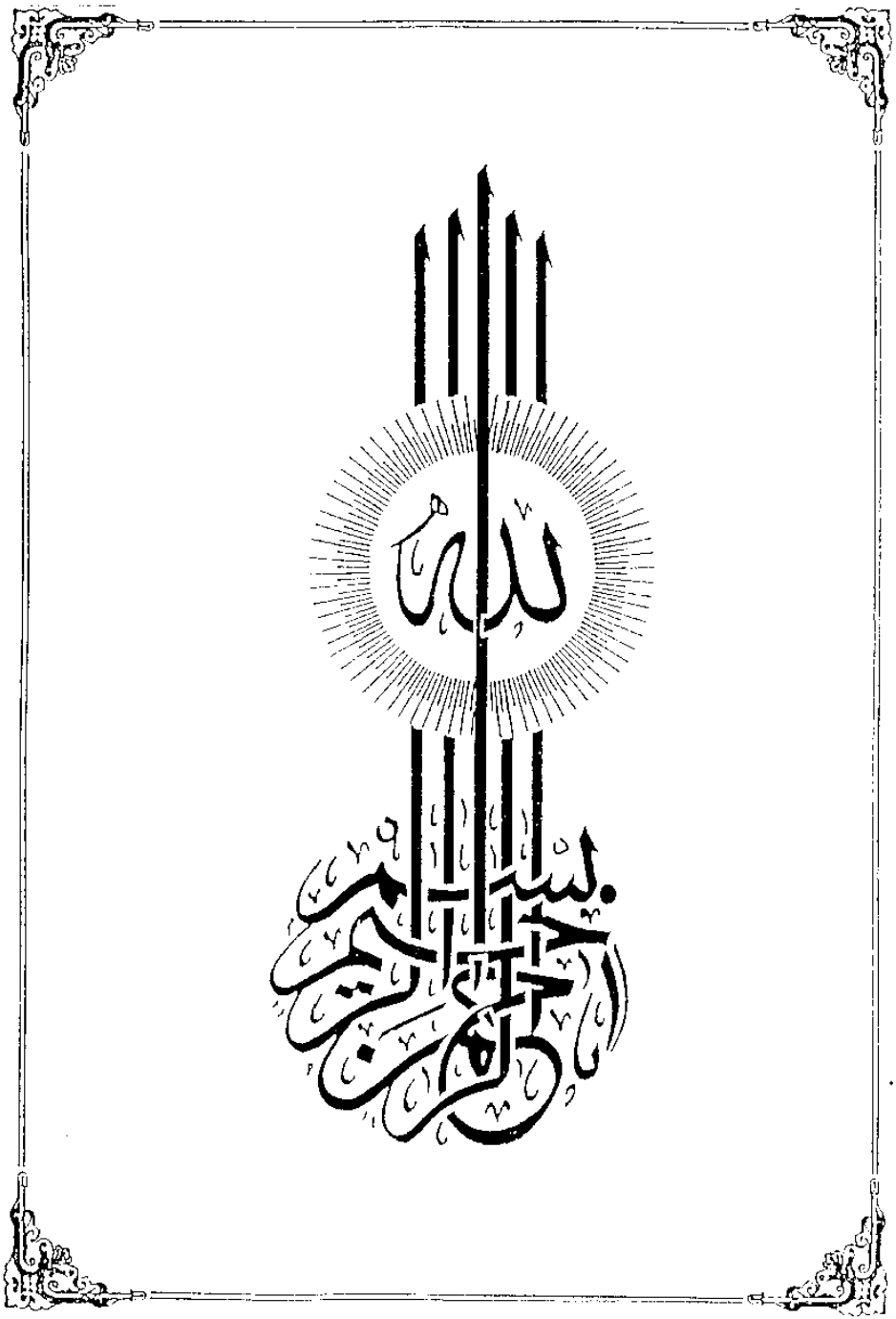

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Under supervision of:

**Prof. Dr. Z.A. El-Hadidy**
Prof. of Agric. Biochemistry, Fac. Agric., Ain Shams Univ.

**Prof. Dr. Y.Z. Ishac**
Prof. of Agric. Microbiol., Fac. Agric., Ain Shams Univ.

**Approval sheet**

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**Ain Shams University**

his thesis for M.Sc. Degree has been approved by:

**rof. Dr. Y. Ghaly** .....
Prof. of Agric. Biochemistry, Fac. Agric., Cairo Univ.

**rof. Dr. M.A. El-Borollosy** .....
Prof. of Agric. Microbiology, Fac. Agric., Ain Shams Univ.

**rof. Dr. Y.Z. Ishac** .....
Prof. of Agric. Microbiology, and director of the Unit. of Biofertilizers, Fac. Agric., Ain Shams Univ.

**rof. Dr. Z.A. El-Hadidy** .....
Prof. of Agric. Biochemistry and Director of Central Laboratory, Fac. Agric., Ain Shams Univ.

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## ABSTRACT

Two pot experiments were carried out in two successive seasons (1992 and 1993) to study the impacts of incorporating *Azolla pinnata* and (or) addition of urea in different doses on growth and yield of rice plants. For achieving such target, plant growth, total nitrogen, phosphorus, potassium, ash, total hydrolysable carbohydrates and soluble sugars were traced in plant shoots after 60 and 120 days of transplanting. Grain and straw yields were determined at the end of experiments (120 days after transplanting) as well as grain quality (their content of total hydrolysable carbohydrates, total soluble sugars, reducing and non-reducing sugars, starch, protein and protein fractions namely albumin, globulin, prolamins and glutelline and chemical composition of straw.

Enzymatic activities (phosphorylase and amylases) were estimated in plant leaves during different plant growth stages.

The obtained results generally indicate that incorporation of *Azolla* separately or in a combination with urea significantly improved the growth of rice plants and increased straw and grain yields. All other tested parameters almostly showed a response to such application. Supplementing urea as a sole nitrogenous fertilizer, in most cases, gave less responses.

**Key Words:** *Azolla*, Biofertilizers, Amylases, Phosphorylase.

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