

**AVAILABILITY OF SOME NUTRIENT ELEMENTS IN FLOODED RICE
SOILS FERTILIZED WITH ORGANIC AND MINERAL NITROGEN
FERTILIZERS.**

ABSTRACT

Two experiments (one in the green house as a pot, 2003 and the other as field 2004) were conducted using rice cultivars Sakha 101 rice variety during the summer season 2003 in the green house and 2004 at the Rice Research and Training Center Kafr El-Sheikh to study the effect of rice straw management practice (rice straw as a raw material and as a compost on: 1) Rice yield and its attributes, 2) Nutrients uptake, 3) Nutrients availability, 4) Soil organic matter and soil fertility status, 5) reduce the pollution and 6) reduce the expensive inorganic N fertilizer input and 7) Agronomic efficiency.

From this data we can concluded that:

1. The reaction and availability of fertilizers applied have to be considered with respect to economic production and environmental impact. The goal must be to sustain or increase soil fertility and to minimize environmental pollution.
- 2-Thus careful matching of fertilizer nitrogen and organic fertilizer application to crop needs can reduce nitrate leaching. The more efficient technology to reduce environmental pollution is using organic fertilizer which can instead of burning beside mineral fertilizer.
- 3- Integration of chemical fertilizer with organic fertilizer (crop residues such as rice straw as a raw material or compost rice straw) improved the yield especially when rice straw as a raw material with FYM as an activator added 3 weeks before transplanting.
- 4-Effective substitution of the recommended N dose of rice could be done up by compost which affect the bad environmental impact such as different forms of nitrogen and nitrate hazard beside the positive economic effect to reduce the expensive inorganic N fertilizer input of mineral nitrogen addition.
- 5-Combined application of rice straw and nitrogen had better build up of soil organic matter and supply valuable quantities of plant nutrients, which can help to meet crop fertilizer requirements and maintain soil fertility. Further studies might be needed especially microbial studies.

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