

## ABSTRACT

Two field experiments were laid out at El-Sirw Agricultural Research Station , (ARC) , Damietta Governorate , Egypt during two rice successive seasons of 2002 and 2003, to study the effect of four farmyard manure treatments i.e. 0 , 5 , 10 and 15 tons/fed and five nitrogen fertilizer levels namely 0 , 20 , 40 , 60 and 80 kg N/fed on yield , yield components , as well as technological and chemical characters of Giza 178 rice cultivar. Each of both field experiments was laid out in a split plot design with four replications. The main plots were devoted to the aforementioned farmyard manure levels and sub-plots were subjected to the previously mentioned nitrogen fertilizer levels.

The obtained results showed that farmyard manure at the level of 10 tons/fed produced the highest values of leaf area index , flag leaf area , plant height , panicle length , number of panicles / m<sup>2</sup>, panicle grain weigh , 1000 grain weight , number of filled grains / panicle , grain yield , straw yield , harvest index , as well as hulling , milling , head rice , broken rice , amylose and protein percentage. It also gave the highest grain yield / fed i.e. 2.235 and 2.708 tons/fed compared with other farmyard manure levels in 2002 and 2003 seasons, respectively.

The observed data showed that the application of nitrogen fertilizer at the level of 40 kg N/fed gave the highest values of leaf area index , flag leaf area , plant height , panicle length , , number of panicles / m<sup>2</sup>, panicle grain weight , 1000 grain weight , number of filled grains / panicle , grain yield , straw yield , harvest index , hulling , milling , head rice , broken rice , amylose and protein percentage in both seasons . Nitrogen fertilizer at the level of 40 kg N/fed gave the highest grain yield/fed ( 2.251 and 2.749 tons/fed ), compared with the other nitrogen levels in 2002 and 2003 seasons, respectively.

The interaction between farmyard manure and nitrogen levels was significant in all studied traits in both seasons . The statistical analysis proved that the application of farmyard manure at the level of 10 tons/fed in combination with 40 kg N/fed produced the highest values of all tested characters.

Generally, it could be recommended that the application of farmyard manure at the rate of 10 tons/fed in combination with 40 kg N/fed is the best treatment to maximize the productivity of rice "c.v Giza 178" under the conditions of this study.

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