1218 The effects of inorganic nitrogen, posphorous and potassium fertilizer s on cotton cultivar (*tetra)*

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Abstract

The tetra medium staple American upland cotton cultivar was evaluated to determine the effects and the responses of different rates of inorganic fertilizers Nitrogen, Phosphorous and Potassium at Okashana. Different rates of Nitrogen, Phosphorous and Potassium fertiliser applied at planting time in 1999/00 -2001/02 cropping season. The main objectives of the research were to investigates, measure and evaluate the effects and the responses of different rates of inorganic fertilizers Nitrogen, Phosphorous and Potassium on cotton cultivar (tetra) To analyse the soil fertility in-order to make recommendations for fertiliser use. To identify any nutrient deficiencies or imbalances, this could affect the crop growth

The four Nitrogen application rates of 10kg, 20kg, 30kg and.40kg per hectare, three Phosphorous application rates of 10kg, 20kg, 30kg per hectare and one Potassium application rate of 10kg per hectare as well as no zero [0kg per hectare] fertilizer were applied.

The trials were planted on light sand therefore germination and growth responses of the effect of different fertilizers were varied. The trials were planted under dry-land condition. The trial could only be established at different dates during three cropping seasons, because of late rainfall. The yield data were analysed using Sigma start statistical package. The seed cotton yields obtained under dry land condition is varied due to different level of treatments. As for yield and fibre properties, its performance is just best than that of the other cultivars. However the tetra cultivar is best adapted to the Northern Central and North Eastern. In indication of its performance in these areas compare favourably with other cultivars, tetra is predominantly cultivated cultivar in these areas. To determine the lint yield per hectare the two inner rows were harvested. The effect of varying applications rates of nitrogen, phosphorous and potassium fertilizers and their responses to different rates of fertilizer application indicated that treatment 20N 30P, performed better than other treatments with average yield of 0.88 tons per hectare followed by treatment 20N with average yield 0.81 tons per hectare and 10 K scored the lowest overall yield of 0.63 tons per hectare.

There was significant affect on crop growth across the treatment. The application of different rates significantly increased the cotton yield compare with no fertilizer at the same place. Relative yield response with different rates of NPK fertilizers was not in order. Relatively performance with various rates of fertilizers inputs was high where less fertilizer was applied. Negative effects appeared to be caused by low rainfall, high soil temperatures, imbalance of soil fertility and poor management practices. The NPK mineralization was directly related to the low decomposition of the inorganic matter. It is concluded that high soil temperatures and poor rainfall modified the yield of cotton crop. A decrease in crop yield was recorded in 2001/02 compare to the last two seasons