

## EFFECT OF NPK ON THE YIELD AND SUGAR LEVEL OF SUGARCANE

Akbar Hussain Gurmani\*, Ahmad Bakhsh\*\* and Ghulam Rasool\*\*

### ABSTRACT

A field experiment was conducted at Agriculture Research Institute, D.I. Khan during 2000-01 and 2001-02 to study the effect of NPK levels on the yield and sugar recovery of sugarcane on ratoon crop. Different combinations of  $P_2O_5$  and  $K_2O$  (0, 80 and 160 kg ha<sup>-1</sup>, each) with constant basal dose of 150 kg N ha<sup>-1</sup> were used in RCB design with three replications on Bannu-I cultivar. Data were recorded on yield, % sugar level, and net return ha<sup>-1</sup>. Maximum mean yields of 143.9, 141.3, 140.6 and 138 t ha<sup>-1</sup> were recorded in the plots receiving 150-80-160, 150-160-80, 150-80-80, and 150-80-0 kg N-  $P_2O_5$ -  $K_2O$  ha<sup>-1</sup>, respectively. It was found that P increased the yield by 42 and 27.5 % over control at 80 and 160 kg  $P_2O_5$  ha<sup>-1</sup>, respectively. While K attributed 11.9 and 2.3% shares at same levels. As regards the yield differences between the two growing years, it was found that the yield was significantly higher for 2001-02 (150 t ha<sup>-1</sup>) as compared with the previous yield of 94.7 t ha<sup>-1</sup>. Sugar level was also affected significantly by nutrient levels and years. It increased gradually with increase in nutrient levels. The highest mean value of 11.8 % sugar was recorded at 150-160-160 (kg N-  $P_2O_5$ -  $K_2O$  ha<sup>-1</sup>). The results revealed an increase of 1.7 and 9.6% more sugar over control due to 80 and 160 kg  $P_2O_5$ , respectively where as K shared an increase of 4.7 and 7.4 % at the same levels. Significantly higher sugar level of 13.1% was recorded for 2001-02 as compared with the year 2000-01 where the average % sugar recovery was 8.9. Like yield and sugar recovery, net return increased initially and then declined with further increase in nutrient levels. The highest mean net return of Rs. 43472 ha<sup>-1</sup> was found at 150-80-160, which was followed by 150-80-0 and 150-160-80 with Rs. 40619 and 39377 ha<sup>-1</sup>, respectively. Results indicated the importance of both P and K in terms of yield, sugar level and net return and it was concluded that NPK level of 150-80-80 is the most optimum level for production and quality of sugarcane in the area.

**Key Words:** Nitrogen, Phosphorus, Potassium, Sugarcane