

ASSESSMENT OF INDIVIDUAL AND COMBINED IMPACT OF NPK ON BAS-385 RICE

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ABSTRACT

Five rates of N (0, 62, 124, 185 and 247 kg ha⁻¹), four of P₂O₅ (0, 74, 148 and 222 kg ha⁻¹) and three of K₂O (0, 74 and 148 kg ha⁻¹) were tried at 40 locations in Punjab during Kharif 1990 through 1992 in different combinations on Bas-385 rice. The crop responded significantly to application of N & P showing a quadratic trend whereas only the maximum dose of K₂O significantly increased paddy yield. Quantum of response to N was highest followed by P and then K. For progressive farmers, application of N and P in 1:1 was found to be most suitable whereas the farmers with meagre resources may use a 3:2 for maximum returns.

INTRODUCTION

Rice is a staple food crop in Pakistan next to wheat, and is one of the major source of foreign exchange earnings. In Punjab, the crop is being cultivated on about 1.16 million hectares with an average yield of 1337 kg paddy ha⁻¹. This yield level being harvested by the farmers is very low as compared with other rice growing nations. Concerted efforts should, therefore, be made by agricultural organizations and farmers to increase paddy yield per

K. Malik *et al.* (1992) claimed that a balanced use of P with N improved phosphorus use efficiency and recovery and observed positive interaction between these two.

The aim of this work was to determine the individual and interactive impact of N, P and K on production of Bas-385.

MATERIAL AND METHODS:

Single replicated experiments were conducted in farmers fields of Punjab during 1990 to 1992, using Bas-385 variety of rice as the test crop. A symmetrical rotatable design was adopted for calculating individual and combined responses to each of the elements i.e. N, P and K. Before the rice crop was planted, the sites were sampled and soil samples were analysed for physical and chemical properties. Soil pH was measured using a 1:1 soil and water ratio with a glass electrode. The hydrometer was used to determine soil texture. Soil organic matter was analysed by oxidation with chromic acid (Allison, 1965), and extractable P with NaHCO₃ followed by ascorbic acid reduction of molybdate (Olsen and Sommers, 1982). Potassium was extracted by ammonium acetate (Bratt 1965) and