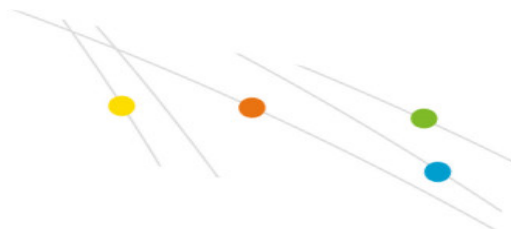


Foliar applied potassium nitrate outperformed soil application of potassium sulphate in terms of rice yield and growers net income

A field trial was conducted in Pakistan to study the effects of foliar application of potassium nitrate (KNO_3) in comparison to soil incorporated potassium sulphate (K_2SO_4) on the growth and yield of fine rice “Super Basmati”. The trial was laid out using randomized complete block design with three replicates. The five treatments were: soil application of K_2SO_4 (70 kg/ha), foliar application of KNO_3 at 0.5%, 1.0%, 1.5% and 2.0% on 40 and 60 days after transplanting. Foliar KNO_3 sprays at 1.5% and 2.0% increased paddy yield by 5.74% and 10.85% in comparison to that of soil incorporated K_2SO_4 (Table 1). The increase in yield with foliar sprays is credited to the increase in the number of tillers, panicle length, grains per panicle and 1000-grain weight. The 1000-grain weight was statistically significantly higher for the soil applied K_2SO_4 and the foliar KNO_3 at 1.5% and 2.0%, as compared to the foliar sprays at 0.5% and 1.0% KNO_3 . There seemed to be a certain threshold value for foliar KNO_3 spray solution to have an increasing effect on rice yield. The 1.5% and 2.0% spray solution outperformed the control soil application in terms of paddy yield and farmers’ net income (Table 1 & Figure 1). It is recommended to apply foliar KNO_3 at 1.5% and 2.0% solutions on 40 and 60 days after planting rice to increase net returns and enhance paddy yield.

Table 1. Economic analysis of foliar KNO_3 application against soil applied K_2SO_4



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Treatments	Paddy yield (MT/ha)	Gross value (Rs. 1200/40 kg)	Total expense (Rs.)	Net income (Rs./ha)
70 kg/ha K ₂ SO ₄ (S)	4,70 b	141.000	89.777	51.223
0,5% KNO ₃ (F)	3,81 c	114.300	86.509	27.791
1,0% KNO ₃ (F)	3,76 c	112.800	87.341	25.459
1,5% KNO ₃ (F)	4,97 ab	149.100	88.173	60.927
2,0 KNO ₃ (F)	5,21 a	156.300	89.005	67.295

Note: S = Soil applied, F = foliar applied

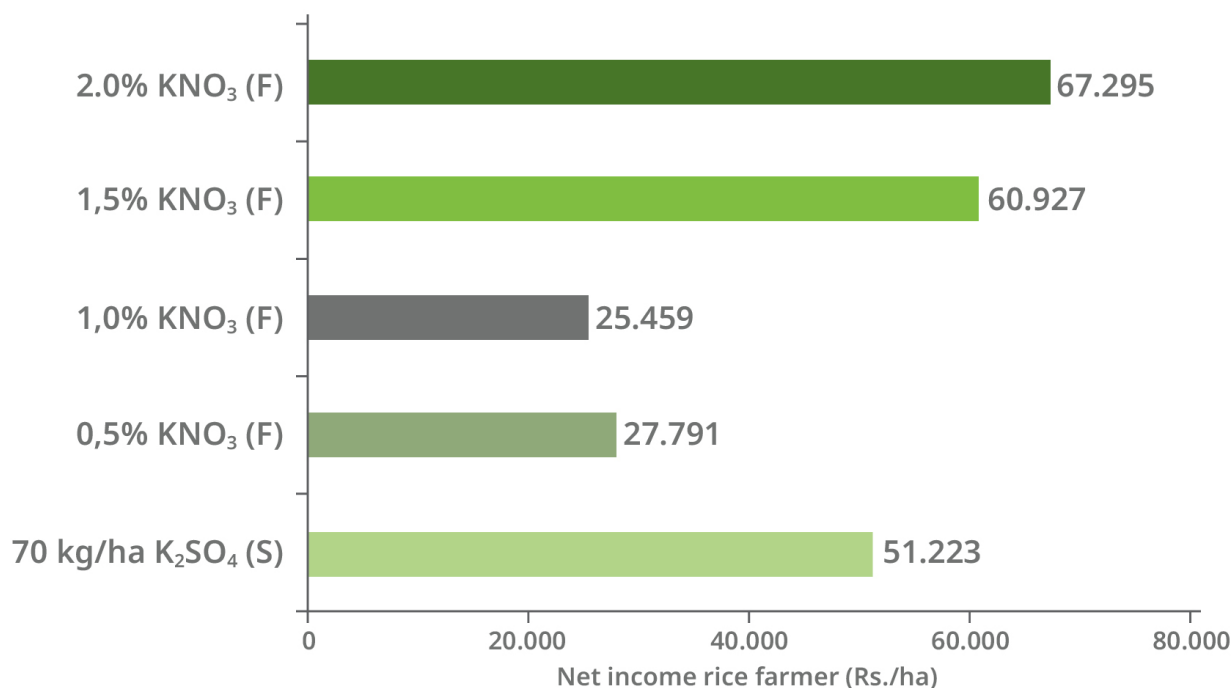


Figure 1. Effect of foliar KNO₃ application on the net income of the rice farmer (F=foliar applied, S=soil applied).