

Response of rainfed blackgram (*Phaseolus mungo*) to foliar nutrition of potassium

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Received: September 1993

Average productivity of blackgram (*Phaseolus mungo* L.) is very low due to low fertility and uneven and erratic distribution of rainfall. In Tamil Nadu, it is mostly grown as a rainfed crop and often as an intercrop. Foliar feeding of potassium at proper time is beneficial over its soil appli-

cation under rainfed condition (Chandra Babu *et al.*, 1985). Therefore the present study was carried out to study the effect of foliar nutrition on the productivity of blackgram under dryland conditions through suitable nutrient management.

The field experiment was conducted dur-

Table 1. Effect of foliar application of potassium on growth and yield of rainfed blackgram (pooled data of 3 years)

Treatment	Plant height (cm)	Pods/plant	Grain yield (kg/ha)	Benefit : cost ratio
Control (without NPK)	14.2	12.3	298	1.37
Basal dressing of N : P : K (kg/ha) (12.5 : 37.5 : 20)	15.0	13.4	446	1.81
Water spray	15.4	15.6	343	1.35
2% DAP spray	16.8	17.8	411	1.66
2% DAP + 1% KCl spray	17.6	18.5	438	1.81
2% DAP + 1% K ₂ SO ₄ spray	17.0	20.7	478	1.88
1% KCl spray	15.8	20.6	451	1.91
1% KCl basal N, P	17.8	26.8	553	2.08
2% KCl spray	16.5	22.4	292	1.69
2% KCl + basal N, P	17.0	23.6	473	1.87
1% K ₂ SO ₄ spray	15.2	21.2	348	1.85
1% K ₂ SO ₄ + basal N, P	16.5	24.9	536	2.02
2% K ₂ SO ₄	14.3	20.5	449	1.71
2% K ₂ SO ₄ + basal N, P	15.2	22.7	479	1.82
CD (P = 0.05)	1.2	1.5	40.3	

Cost of blackgram seed: Rs 8.00/kg

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ing the rainy season of 1989, 1990 and 1991 with blackgram under dryland conditions at Vamban. The experiment was laid out in randomized block design with 3 replications. The experimental soil was sandy-clay loam having 176, 5.2 and 250 kg/ha available N, P_2O_5 and K_2O respectively, pH 6.4 and electrical conductivity of soil was 0.15 mmhos/cm. Treatment comprised combinations of foliar application of K and its sources with and without basal N and P (Table 1). The foliar application of K was given twice—at flowering and pod-formation stages.

The plant height was higher due to foliar spray of 1% KCl twice at flowering and pod-formation stages with basal N and P (Table 1). Similar trend was noticed for number of pods/plant. The result confirms the finding of Velu and Srinivasan (1984). Foliar application of 1% KCl along with basal application of N and P registered higher grain

yield. The highest return per rupee invested was obtained with 1% KCl spray combined with basal N and P application. This was followed by 1% K_2SO_4 spray with basal N and P in terms of yield attributes, grain yield and return/rupee invested. Treatments with 1% KCl and 1% K_2SO_4 with basal N and P application showed 46 and 44% increase in grain yield respectively compared with the control. This clearly indicated the superiority of foliar nutrition of K in augmenting blackgram yields in dryland areas of Tamil Nadu.

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Indian J. Agron. 40 (1) : 115–117 (March 1995)

Method of weed management on weed biomass, yield of blackgram (*Phaseolus mungo*) and nitrogen uptake

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Received: October 1993

An attempt was made to increase the production of blackgram (*Phaseolus mungo* L.) effectively and economically by different methods of weed control under lateritic acid soil of Sriniketan, Visva-Bharati, during 1991 and 1992. The experiment was

conducted at the Agricultural Farm, in randomized block design with 12 treatments in 4 replications. The soil was sandy loam with pH 6.0, low in organic carbon (0.42%), medium in available phosphate (P_2O_5 , 40.0 kg/ha) and low in potassium (K_2O , 112.13