



Effect of potassium and foliar spray of cow urine on growth and yield of green gram [*Vigna radiata* (L.) Wilczok]

S.M. PATIL AND B.S. GUNJAL

KEY WORDS : Green gram, Folian spray, Cow urine, Potassium

Patil, S.M. and Gunjal, B.S. (2011). Effect of potassium and foliar spray of cow urine on growth and yield of green gram [*Vigna radiata* (L.) Wilczok], *Internat. J. Forestry & Crop Improv.*, 2 (1) : 102-103.

Green gram is a short duration and widely adopted crop and it has an ability to fix atmospheric nitrogen eubiotically. Indian soils are abundant in potassium, but their availability to crops is less. Taking into consideration, it was decided to use foliar spray of cowurine as an organic source in conjunction with fertilizers applied in soil for enhancing the nutrient availability.

A field experiment was conducted at Mahatma Phule Krishi Vidyapeeth, Rahuri during summer 2005. The soil of experimental plot was clayey, low in available nitrogen, medium in phosphorus and high in available potash.

The field trial was laid out in a factorial randomized block design with 8 treatment combinations, replicated

thrice with four levels of potash (0,25,37.5 and 50 kg K₂O ha⁻¹) and foliar spray of cowurine and water. Potassium levels along with recommended dose of fertilizer 25 kg N and 50 kg P₂O₅ was given at the time of sowing. Fresh diluted cowurine was sprayed at age of 15, 35 and 50 days on green gram.

The plant height, dry matter and grain yield were increased by different potash levels and foliar spray of cowurine (Table 1). The plant height was significantly highest in treatment 50 kg K₂O ha⁻¹ applied in soil with RDF (19.16, 40.39, 63.03 and 64.10 cm at 20, 40, 60 DAS and at harvest, respectively) at all the crop growth stages and was statically at par with 37.5 kg K₂O ha⁻¹ level of

Table 1 : The plant height, dry matter and grain yield of green gram as influenced by different treatments

Treatments	Plant height (cm)				Dry matter (g)				Grain yield (q ha ⁻¹)
	20 DAS	40 DAS	60 DAS	At harvest	20 DAS	40 DAS	60 DAS	At harvest	
Potash levels (kg K₂O ha⁻¹)									
0	14.87	31.35	48.91	49.75	0.25	10.22	18.20	20.67	9.30
25	17.06	35.95	56.10	57.05	0.29	11.72	20.87	23.67	10.66
37.5	18.48	38.94	60.77	61.81	0.31	12.70	22.61	25.67	11.55
50	19.16	40.39	63.03	64.10	0.32	13.17	23.45	26.63	11.98
C.D. (P=0.05)	0.913	1.924	3.003	3.056	0.015	0.628	1.116	1.266	0.57
Foliar sprays									
Cow urine	18.16	38.27	59.71	60.74	0.30	12.48	22.22	25.23	11.35
Water	16.63	35.04	54.69	55.62	0.28	11.43	20.35	23.09	10.40
C.D. (P=0.05)	0.646	1.360	2.124	2.161	1.011	0.444	0.789	0.895	0.40
Interaction									
C.D. (P=0.05)	NS	NS	NS	NS	NS	NS	NS	NS	NS

NS=Non-significant

Correspondence to:

S.M. PATIL, College of Agriculture, DHULE (M.S.) INDIA

Authors' affiliations:

B.S. GUNJAL, Department of Agronomy, College of Agriculture, DHULE (M.S.) INDIA

potash. These findings are in conformity with Sangakkara (1990) and Shaha *et al.* (1994). Similar trend was noticed in plant height due to foliar spray of cowurine over water spray.