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Studies on the Effect of Potash on the Yield and Quality of Guava

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Investigations on the effect of graded doses of potash on guava were undertaken with constant levels of Nitrogen and Phosphoric acid. The effect of K was evaluated in respect of length of fruit, diameter of fruit, weight of individual fruit, yield in number and total soluble solids. Application of 1 kg of potash along with 0.5 kg of Nitrogen and 1 kg of phosphoric acid significantly increased the yield, improved the size and quality of the fruits, in the varieties Smooth Green, Chittidar and Lucknow 49. The increase in yield was 114.2, 36.0 and 54.2 per cent in the above varieties respectively.

Information on the effect of potash on the yield of guava is scant. Many workers have recommended different schedules of manures without citing any experimental evidence (Cheema *et al*., 1954; Gandhi, 1963; Hayes, 1957). A trial was laid out to study the effect of graded doses of potash along with constant doses of nitrogen and phosphoric acid on guava.

MATERIALS AND METHODS

This experiment was laid out in a medium lateritic soil type on three promising varieties of guava, *viz*. Smooth Green, Chittidar and Lucknow-49. The treatments were replicated thrice using a Randomised Block Design with external guard rows all round. Potash levels as muriate of potash *viz*.. 0.0, 0.5, 1.0 and 1.5 kg/tree/annum and constant levels of N (0.5 kg/tree) and phosphoric acid (1.0 kg/tree) were kept. The fertilizers were applied in two split doses in July and November along with a basal application of 25 kg of farm yard manure per tree. The fertilizers were applied 45 cm away from the trunk and incorporated in the basin within the leaf drip. The usual recommended package of practices on irrigation, weeding, plant protection, etc. were followed.

RESULTS AND DISCUSSION

The particulars given in Table in respect of yield in number and weight, length and diameter of the fruit, weight of individual fruit and total soluble solids reveal that in general there is significant improvement due to potash application. Among the treatments, K_1 (1.0 kg/tree) gave significant increase in the number and size of fruits in all the three varieties of guava. The increase in yield of fruits was 58.2, 35.3 and 70.7, and 114.2, 36.0, 54.2 per cent over control during the year 1973-74 and 1974-75 respectively. Though 0.5 kg of potash registered increase in yield, it was not comparable with one kg of potash. The high dose (1.5 kg/tree) of potash was less effective in increasing the yield potential. The results indicated that a proper balance is

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TABLE. Effect of potash on the yield and fruit characters of guava (1973 - 74 and 1974 - 75)

Variety	Treatment	Yield: Number 1973-74	Yield: Number 1974-75	Yield: Weight (kg) 1973-74	Yield: Weight (kg) 1974-75	Length of fruit (cm) 1973-74	Length of fruit (cm) 1974-75	Diameter of fruit (cm) 1973-74	Diameter of fruit (cm) 1974-75	Weight of individual fruit (g) 1973-74	Weight of individual fruit (g) 1974-75	Total soluble solids 1973-74	Total soluble solids 1974-75
Smooth Green	K_0	178	783	23.75	76.50	5.4	5.2	4.5	5.2	130	102	12.6	12.5
	K_1	173	976	24.25	128.50	5.1	5.3	5.9	5.4	130	102	14.2	14.2
	K_2	243	1136	37.50	163.90	5.6	5.6	6.2	6.2	135	146	14.9	15.1
	K_3	189	918	26.90	100.18	5.6	5.3	5.6	5.9	132	99	15.0	15.6
Chittidar	K_0	330	1040	37.90	105.45	4.7	4.6	5.1	4.4	74	62	9.1	9.3
	K_1	315	1228	36.35	108.65	4.6	5.3	5.1	5.5	75	77	9.8	10.2
	K_2	403	1516	51.30	143.40	5.3	5.4	5.3	5.5	110	84	10.4	10.5
	K_3	228	734	24.75	88.20	5.3	4.8	5.6	5.4	101	74	11.9	12.7
Lucknow-49	K_0	169	956	23.95	90.30	5.4	6.5	6.0	6.6	147	126	12.3	10.2
	K_1	179	986	26.50	104.80	5.7	6.9	6.2	7.3	154	206	12.9	11.8
	K_2	255	1147	40.80	139.35	5.9	7.3	6.3	7.4	171	226	13.1	14.0
	K_3	176	858	24.15	83.65	5.7	7.5	6.0	7.8	156	220	14.0	15.1
CD. (P=0.05)		64.76	466	7.72	46.23	0.56	1.52	N.S.	1.5	61	71	1.7	2.8

K_0 : No potash K_1 : 0.5 kg. K_2 : 1.0 kg K_3 : 1.5 kg. N.S. : Not significant

set in with the combination of 0.5 kg N, 1.0 kg P_2O_5 and 1.0 kg of potash which resulted in increased yield. Doses above 1.0 kg of potash did not influence the fruit yield.

Application of one kg of potash per tree has significantly increased the number, size and quality of fruits. Uniform colour development was observed on fruits due to application of 1.0 kg of potash.

Among the three varieties, Lucknow - 46 responded well to 1 kg of potash application during 1973-74 and Smooth Green showed better response in 1974-75.

From the above, it is understood that under proper balance of N and

P_2O_5, the level of 1 kg of potash per tree enhanced the yield with better sized fruits. Among the other effects brought out by K_2 treatment (1 kg per tree) the marked increase of individual fruit weight with attractive uniform colour is note worthy.

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