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Influence of N and K on the edible yield of Co. and Co. 2 Amaranthus

K SUBBIAH[1] and K. M. RAMANATHAN[2]

A field experiment was conducted to study the influence of nitrogen and potassium on the edible yield of Co. 1 and Co. 2 Amaranthus. It was observed that the edible matter yield of Co. 1 and Co. 2 Amaranthus was favourably influenced by the applied nitrogen whereas the potassium did not have any marked effect. Among the levels of nitrogen, 80 kg N/ha recorded the highest green matter yield followed by 60, 40, 20 kg N/ha and control. This trend was more distinctly observed in Co. 1 indicating that there is scope for increasing the yield of Co. 1 Amaranthus by N application.

The leafy vegetables like Amaranthus play a vital role in human nutrition. Balanced diet is to have 120g of leafy vegetables plus 280g of non-leafy vegetables per day. But the per head consumption of leafy and non leafy vegetables in India is reported to be less than 45 g (Doijodi 1978). It is therefore imperative to step up vegetable production to fulfil the requirements of growing population. The soil nutrient resources are being depleted by the intensive agriculture. It is therefore essential that the soil has to be replenished with balanced nutrition to ensure economic yield. Information regarding the effect of mineral fertilizers on the edible matter yield of Amaranthus species are lacking. In this paper an attempt was made to study the influence of N and K on the yield of Co. 1 and Co. 2 Amaranthus.

Materials and Methods :

A field experiment was conducted in the red sandy loam soil of Tamil Nadu Agricultural University Farm, Coimbatore-3. The experiment was laid out in a factorial R. B. D. with three repilcations. The treatments consisted of five levels of nitrogen (0) 20, 40, 60, 80 kg/ha) and three levels of K_2O (0, 20, 40 kg/ha) with two Amaranthus varieties (CO, 1 and CO. 2) An uniform basal dose of 50 kg P_2O_5 plus 10 t/ha of Farm Yard Manure was applied to all treatments. The edible green matter yield recorded on 27th, 36th and 41st days were analysed statistically.

Results and Discussions:

The edible green matter yield data of amaranthus are presented in Table 1 Added nitrogen correspondingly enhanced the green matter yield of amaranthus. Verma *et al* (1969) obtained similar results with spinach. Among the nitrogen levels, 80 Kg N/ha gave the highest green matter yield followed by 60, 40, 20 kg N/ha and control. This trend was distinctly observed in Co. 1 variety indicating that there is scope for increasing the yield of Co. 1 Amaranthus by N appli-

1. Assistant professor 2. Professor
Department of Soil Science and Agricultural Chemistry T. N. A. U. Coimbatore-3

cation. But in the case of Co. 2 variety although the highest yield was recorded at 80 kg N levels the differences among the other levels of N barring control were not very distinct indicating that the Co. 2 variety had less potential for yield compared to Co. 1. However it was obvious that the application of nitrogen to Amaranthus varieties was essential to increase its green matter yield.

It was observed that the added potassium did not have any notable influence on the green matter yield and it could be attributed to the high initial soil available K (442 kg/ha) of the experimental field.

Summarising, it could be stated that the edible green matter yield of CO. 1 and CO. 2 Amaranthus was favourably influenced by the applied nitrogen where as the applied potassium did not have any marked effect.

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TABLE 1 Yield of edible green matter

(Mean values in T/HA)

i) Corperison of N levels

N_0	N_{20}	N_{40}	N_{60}	N_{80}	SE	CD
2.4	6.7	8.8	10.0	11.8	0.4	1.1

ii) Interaction N levels and varieties

	CO.1	CO.2	SE	CD
N_0	3.3	1.8	0.6	1.8
N_{20}	7.9	5.5		
N_{40}	10.3	6.3		
N_{60}	12.6	7.4		
N_{80}	14.4	9.3		