

Graded Doses of Nitrogen on the Quality Parameters of Pods in Drumstick Var. PKM -1

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ABSTRACT

Keywords

Drumstick pkm-1, N- Nitrogen, P- phosphorus, K- Potassium

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A random sample of 20 pods were collected from each treatment to estimate the quality parameters. The treatments comprised of Five levels of nitrogen, i.e., Control, 100,150,200 and 250g N per plant. Nitrogen was applied in the form of urea in two splits i.e., I split at 3 months after planting seedlings. II split at 50% flowering. Phosphorus @100g in the form of Single super phosphate and potassium @ 50g/plant in the form of murate of potash were applied along with I split of nitrogen. Nitrogen has significantly influenced the quality parameters of pods. Pods from different treatments showed higher values for pulp content, TSS, Total sugars and reducing sugars over control except ascorbic acid. The promotory effect of nitrogen was observed up to 200g N/plant only. Nitrogen @ 200 g per plant is optimum for improving the quality parameters of drumstick.

Introduction

Drum stick (*Moringa oleifera*) Goertn cv. PKM -1 is one of the most useful trees among vegetable crops. Every part of the tree is having lot of benefits and is valued commercially. As a vegetable crop mainly it is cultivated for tender pods which are highly nutritious. The pods are used in culinary preparations and pickles. The use of optimum level of nitrogen fertilizer is an important factor in improving crop yields. Fertilizer response depends on soil and Agro climatic conditions. The present

investigation was carried out to find out the response of drumstick pods to graded doses of nitrogen.

Materials and Methods

A field experiment was carried out during August 2001 to June 2002 on sandy loam soils of S.V. Agricultural College, Tirupati campus of Acharya N. G. Ranga Agricultural University. The experiment was laid out in simple RBD with four replications.

The treatments comprised of Five levels of

nitrogen, i.e., Control, 100,150,200 and 250g N per plant. Nitrogen was applied in the form of urea in two splits i.e., I split at 3 months after planting seedlings. II split at 50% flowering. Phosphorus @100g in the form of Single super phosphate and potassium @ 50g/plant in the form of murate of potash were applied along with I split of nitrogen. A random sample of 20 pods were collected from each treatment to estimate the quality parameters.

Results and Discussion

Nitrogen has significantly influenced the quality parameters of pods. Pods from different treatments showed higher values for pulp content, TSS, Total sugars and

reducing sugars over control except ascorbic acid. The promotory effect of nitrogen was observed up to 200g N/plant only. At still high levels of nitrogen (250gN/plant) there was depressive effect. These findings are in agreement with the results of Sharma and Mann (1971) in tomato. The positive response of these may be attributed to large uptake of nitrogen, greater synthesis of carbohydrate and their translocation to the fruit.

However, nitrogen at higher rates significantly decreased vitamin 'C' content in pods. This is in conformity with the results of Montagu and Goh (1990) in tomato and Rutkauskiene and poderey (1999) in cabbage.

Table.1 Effect of various levels of Nitrogen on pod quality attributes of drumstick var. PKM - 1

Treatment (g/plant)	Pulp Content	TSS(%)	Ascorbic acid mg/10g	Total Sugars (%)	Reducing Sugars (%)
T ₁ Control	90.75	5.385	117.00	0.4983	0.0483
T ₂ (N 100)	102.83	5.760	122.50	0.6458	0.0578
T ₃ (N150)	107.80	6.435	117.50	0.7035	0.0718
T ₄ (N200)	114.50	6.653	116.25	0.8973	0.1655
T ₅ (N250)	113.02	6.475	113.05	0.8198	0.0895
Mean	105.78	6.142	117.35	0.7129	0.0865
SEm +	3.152	0.018	2.442	0.017	0.014
CD (P=0.05)	9.714	0.332	7.526	0.0534	0.0460

Total sugars and reducing sugar content increased upto 200g N and then decreased at 250 g N per plant. This may be due to interference with carbohydrate synthesis at higher doses of nitrogen. Nitrogen @ 200 g per plant is optimum for improving the quality parameters of drumstick.

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