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NUTRIENT UPTAKE DYNAMICS OF PEARL MILLET AS INFLUENCED BY ORGANIC NUTRIENT MANAGEMENT PRACTICES

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ABSTRACT

A field experiment was conducted at College of Agriculture, Vijayapur during *Kharif* 2021 to study the "Effect of different organic nutrient management practices on nutrient uptake of pearl millet". The experiment was laid out in complete randomized block design with 12 treatments and replicated thrice comprasing of different levels of FYM (2.25, 2.5 and 5.0 t ha^{-1}), vermicompost (1.25 and 2.5) and foliar spray of jeevamrutha @ 10% and 20% compared with recommended package of practices (50:25:10 NPK kg ha^{-1} + 2.5 t FYM ha^{-1}). The results revealed that the application of recommended dose of fertilizer significantly recorded higher uptake of N, P and K by pearl millet grain and straw. However, soil application of FYM @ 5 t ha^{-1} + foliar spray of 20% jeevamrutha at 45 DAS recorded significantly higher Fe, Zn and B uptake by pearl millet grain and straw.

Keywords **:** Pearl millet, FYM, organics, jeevamrutha, nutrient uptake.

Introduction

Pearl millet (*Pennisetum glaucum* L.) belongs to the grass family Graminaceae. The world's tropics and subtropics are home to the plant genus Pennisetum. Pearl millet has an extremely high photosynthetic efficiency since it is a C_4 plant. The primary reason for pearl millet's widespread cultivation in arid and semi-arid locations is its greater adaptability to water stress and nutrient-depleted soils than other cereal crops. India is the largest producer of pearl millet in the world covering an area of 7.65 million hectares with an annual production of 10.86 million tonnes with average productivity of 1420 kg ha^{-1}, and is mainly cultivated in the states of Rajasthan, Gujarat, Maharashtra, Haryana, Uttar Pradesh and Karnataka (Anon., 2021).

The use of organics, among the various agronomic management approaches, is of immense important in rainfed areas in order to produce healthy plants. It is critical to build and maintain an active and rich soil type, despite the fact that they have a lower concentration of nutrients and need more labour to handle, they have seen a significant growth in their use as a nutrition source over inorganic fertilizer (Kannan *et al.*, 2005). Organic liquid manures such as jeevamrutha aid in the rapid development of soil fertility by increasing the activity of soil microflora and fauna (Devakumar *et al.*, 2014). These functions both as fertilizer and a biopesticide and they serve an important function in encouraging the plant growth and providing immunity to the plant system.

Nutrient mining is currently a major threat to agricultural productivity as there is a larger gap between the amount of nutrient applied and the amount of nutrient used by the crop. One of the major reasons for lower production is farmers' blanket use of fertilizers without knowing the soil fertility status and poor nutrient management. Several studies have shown that nitrogen fertilization can improve millet production efficiency and that an adequate nitrogen supply is linked to vigorous vegetative development. It also responds well to the applied phosphorus (Malik *et al.*, 1990). Farmyard manure improves the crop's nitrogen usage efficiency, as well as the status of

organic carbon, accessible nitrogen, P_2O_5 and trace elements in the soil, while reducing the negative effects of soil acidity, salinity, and alkalinity. Vermicompost lowers the C:N ratio, increases humus content and feeds plants with a wide range of easily available nutrients like nitrate, phosphorus, potassium, calcium and magnesium (Talashikar *et al.*, 1999).

Material and Methods

A field experiment was conducted during *Kharif*, 2021 at College of Agriculture farm, Vijayapur, Karnataka on vertisol having pH 8.32 and EC 0.22 dS m^{-1}. The soil was medium in organic carbon content (0.47 %) and available P_2O_5 (31 kg ha^{-1}), and low in available N (168 kg ha^{-1}) with high available K_2O content (410 kg ha^{-1}). The experimental site was located at a latitude of 16˚ 77' North, longitude of 75˚ 74' East and an altitude of 516.29 meters above mean sea level in Northern Dry Zone of Karnataka (Zone 3).

Experimental design and treatment combination

The experiment was laid out in a complete randomized block design with three replications.The experiment consisted of 12 treatments involving different combinations of organic manures *viz.*, FYM, vermicompost and and foliar spray of jeevamrutha to compare with recommended package of practices.

Crop management

The land was ploughed once after the harvest of the previous crop, followed by two harrowing. At the time of sowing, the land was prepared to a fine seedbed and the plots were laid out. The variety VPMV-9 was used and fertilizers were applied according to the treatments. The crop was sown on 26th July 2021 with a spacing of 45 × 10 cm. Harvesting was done on 25th October 2021, when crop had attained milky dough stage and were picked from five randomly selected and tagged plants from each treatment, separately for recording various observations. The Bajra heads from the net plot were cut, sundried and threshing was done with threshing machine, grains per plot thus collected were winnowed, cleaned and weighed. Intercultivation was done to remove all weeds from the field in order to check crop weed competition.

Statistical analysis

The data collected from the experiment at different growth stages and at harvest were subjected to statistical analysis as described by Gomez and Gomez (1984). The level of significance used for 'F' and 't' tests was P=0.05. Critical Difference (CD) values were calculated at 5 per cent probability level if the F test will found to be significant.

Results and Discussion

Effect of different organic nutrient management practices on N, P, K, Fe, Zn and B contents of pearl millet grain and straw at harvest.

Nitrogen content

Nitrogen content of pearl millet grain and straw did not differ significantly among the treatments. Treatment (T_1) with recommended package of practices had numerically higher nitrogen content of grain and straw (1.83 and 0.55 %) and lower nitrogen content of grain and straw (1.66 and 0.46 %) was recorded in the treatment (T_8) that received nutrients through the foliar application of jeevamrutha @10% and 20% at 30 DAS and 45 DAS.

Phosphorus content

Phosphorus content of pearl millet grain and straw did not differ significantly among the treatments. Treatment (T_1) with recommended package of practices had numerically higher phosphorus content of grain and straw (0.286 and 0.115 %) and lower phosphorus content of grain and straw (0.269 and 0.100 %) was recorded in the treatment (T_8) that received nutrients through the foliar application of jeevamrutha @10% and 20% at 30 DAS and 45 DAS.

Potassium content

Potassium content of pearl millet grain and straw did not differ significantly among the treatments. Treatment (T_5) with soil application of FYM @ 5t ha^{-1} + foliarspray of 20% jeevamrutha at 45 DAS had numerically higher potassium content of grain and straw (0.880 and 1.45 %) and lower phosphorus content of grain and straw (0.844 and 1.30%) was recorded in treatment (T_8) that received nutrients through the foliar application of jeevamrutha @10% and 20% at 30 DAS and 45 DAS.

Iron content

Iron content of pearl millet grain and straw did not differ significantly among the treatments. Treatment (T_5) with soil application of FYM @ 5 t ha^{-1}+ foliar spray of 20% jeevamrutha at 45 DAS had numerically higher iron content of grain and straw (71.83 and 17.75 ppm) and lower iron content of grain and straw (71.83 and 16.89 ppm) was recorded in the treatment (T_8) that received nutrients through the foliar application of jeevamrutha @10% and 20% at 30 DAS and 45 DAS.

Zinc content

Zinc content of pearl millet grain and straw did not differ significantly among the treatments. Treatment (T_5) with soil application of FYM @ 5 t ha^{-1} + foliar spray of 20% jeevamrutha at 45 DAS had

numerically higher zinc content of grain and straw (57.74 and 10.65 ppm) and lower zinc content of grain and straw (52.56 and 9.14 ppm) was recorded in the treatment (T_8) that received nutrients through the foliar application of jeevamrutha @10% and 20% at 30 DAS and 45 DAS.

Boron content

Boron content of pearl millet grain and straw did not differ significantly among the treatments. Treatment (T_5) with soil application of FYM @ 5 t ha^{-1} + foliar spray of 20% jeevamrutha at 45 DAS had numerically greater boron content of grain and straw (6.27 and 2.74 ppm) and lower boron content of grain and straw (5.69 and 2.45 ppm) was recorded in treatment (T_8) that received nutrients through the foliar application of jeevamrutha @10% and 20% at 30 DAS and 45 DAS.

Effect of different organic nutrient management practices on macronutrient's uptake of pearl millet

Significant difference among the treatments was noticed with respect to nutrient uptake in pearl millet at harvest. Significantly higher uptake of nitrogen, phosphorus and potassium by pearl millet grain was recorded in the treatment (T_1) with the application of nutrients through recommended dose of fertilizers with 39.36, 5.87, 18.18 N, P_2O_5 and K_2O kg ha^{-1}, respectively and was followed by (T_5) with the soil application of FYM @ 5 t ha^{-1} + foliar application of 20% jeevamrutha at 45 DAS and treatment (T_3) with soil application of vermicompost @ 2.5 t ha^{-1} + foliar application of 20% jeevamrutha at 45 DAS compared to all other treatments. These results clearly indicate a positive correlation with total grain yield *viz.*, total N uptake (r=0.994**), total P uptake (r=0.997**), total K uptake (r=0.996**).

Significantly higher uptake of nitrogen and phosphorus by pearl millet straw was recorded in the treatment (T_1) with the application of nutrients through recommended dose of fertilizers with 28.35 N kg ha^{-1} and 5.81 P_2O_5 kg ha^{-1} and was followed by (T_5) with the soil application of FYM @ 5 t ha^{-1} + foliar application of 20% jeevamrutha at 45 DAS compared to all other treatments. The increased uptake of these major nutrients might be attributed to the best performance of the crop under judicious nutrition thereby resulting in higher absorption of nutrients resulting in higher dry matter production as compared to organic farming inputs. The above results are in conformity with the findings of Reddy and Moorthy (1984).

Significantly higher uptake of potassium by pearl millet straw was recorded in the treatment (T_5) with the soil application of FYM @ 5 t ha^{-1} + foliar application of 20% jeevamrutha at 45 DAS with 70.42 K_2O kg ha^{-1} and was followed by (T_1) with the application of nutrients through recommended dose of fertilizers compared to all other treatments. Which can be attributed to higher amount of K content present in the straw of pearl millet with organic manures application.

Effect of different organic nutrient management practices on micronutrient uptake of pearl millet

Significant difference among the treatments was noticed with respect to micronutrient uptake by pearl millet grain at harvest. Significantly higher uptake of iron, boron and zinc by pearl millet grain was recorded in the treatment (T_5) with the soil application of FYM @ 5 t ha^{-1} + foliar application of 20% jeevamrutha at 45 DAS with 156.2, 12.45, 114.5 Fe, B and Zn g ha^{-1}, respectively and was followed by (T_1) with the application of nutrients through recommended dose of fertilizers compared to all other treatments.

Significantly higher uptake of iron, boron and zinc by pearl millet straw was recorded in the treatment (T_5) with the soil application of FYM @ 5 t ha^{-1} + foliar application of 20% jeevamrutha at 45 DAS with 102.0, 13.21, 50.60 Fe, B and Zn g ha^{-1}, respectively and was followed by (T_1) with the application of nutrients through recommended dose of fertilizers compared to all other treatments (Table 23, 24 and 25). Devakumar *et al*. (2014) reported the positive effects of jeevamrutha attributed to increased yield, microbial load and growth hormones which might have increased the soil biomass, there by maintaining the availability and uptake of both applied and native soil nutrients which ultimately resulted in higher growth and yield of crops.

Table 1: Nitrogen content and uptake of pearl millet as influenced by different organic nutrient management practices

Treatments	N content (%)		N uptake (kg ha^{-1})	
	N content in grain	N content in straw	N uptake by grain	N uptake by straw
T_1: Recommended package of practices	1.83	0.55	39.36	28.35
T_2: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	1.80	0.47	32.37	20.28
T_3: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	1.80	0.48	33.84	22.06
T_4: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	1.82	0.51	31.54	21.40
T_5: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	1.82	0.53	36.12	25.52
T_6: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	1.81	0.48	29.90	19.38
T_7: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	1.80	0.48	32.65	21.03
T_8: Foliar spray of 10% jeevamrutha at 30 DAS + Foliar spray of 20% jeevamrutha at 50 DAS	1.66	0.46	16.86	13.52
T_9: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	1.67	0.47	24.50	18.23
T_{10}: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	1.68	0.49	26.27	19.70
T_{11}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	1.67	0.50	25.95	19.50
T_{12}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	1.73	0.50	28.30	19.84
$S.E_m\pm$	0.06	0.04	2.00	2.45
C.D. (P=0.05)	NS	NS	5.87	7.19

*NS- Non-significant *DAS- Days after sowing

Table 2: Phosphorus content and uptake of pearl millet as influenced by different organic nutrient management practices

Treatments	P content (%)		P uptake (kg ha^{-1})	
	P content in grain	P content in straw	P uptake by grain	P uptake by straw
T_1: Recommended package of practices	0.286	0.115	5.87	5.81
T_2: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.284	0.112	5.10	4.83
T_3: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.285	0.114	5.36	5.24
T_4: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.276	0.108	4.77	4.53
T_5: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.279	0.109	5.54	5.23
T_6: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.280	0.109	4.62	4.40
T_7: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.282	0.111	5.09	4.87
T_8: Foliar spray of 10% jeevamrutha at 30 DAS + Foliar spray of 20% jeevamrutha at 50 DAS	0.269	0.100	2.68	2.95
T_9: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.270	0.101	3.98	3.92

T_{10}: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.273	0.105	4.27	4.22
T_{11}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.270	0.102	4.19	3.98
T_{12}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.272	0.104	4.44	4.13
$S.E_m\pm$	0.006	0.006	0.26	0.33
C.D. (P=0.05)	NS	NS	0.75	0.96

*NS- Non-significant *DAS- Days after sowing

Table 3: Potassium content and uptake of pearl millet as influenced by different organic nutrient management practices

Treatments	K content (%)		K uptake (kg ha^{-1})	
	K content in grain	K content in straw	K uptake by grain	K uptake by straw
T_1: Recommended package of practices	0.845	1.35	18.18	68.71
T_2: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.876	1.40	15.72	60.40
T_3: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.877	1.42	16.50	64.67
T_4: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.879	1.43	15.20	59.97
T_5: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.880	1.45	17.42	70.42
T_6: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.865	1.36	14.27	54.81
T_7: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.869	1.39	15.75	60.99
T_8: Foliar spray of 10% jeevamrutha at 30 DAS + Foliar spray of 20% jeevamrutha at 50 DAS	0.844	1.30	8.48	38.22
T_9: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.856	1.33	12.60	51.76
T_{10}: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.847	1.35	13.27	54.24
T_{11}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	0.859	1.32	13.36	51.50
T_{12}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	0.864	1.35	14.13	53.66
$S.E_m\pm$	0.010	0.03	0.844	4.06
C.D. (P=0.05)	NS	NS	2.476	11.92

*NS- Non-significant *DAS- Days after sowing

Table 4: Iron content and uptake of pearl millet as influenced by different organic nutrient management practices

Treatments	Fe content (ppm)		Fe uptake (g ha^{-1})	
	Fe content in grain	Fe content in straw	Fe uptake by grain	Fe uptake by straw
T_1: Recommended package of practices	73.61	17.75	154.2	89.93
T_2: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	72.24	18.52	129.6	79.18
T_3: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	73.79	17.74	139.0	81.90
T_4: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	74.06	20.12	127.9	84.36

T_5: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	78.60	21.20	156.2	102.0
T_6: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	73.30	17.16	120.8	69.01
T_7: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	73.55	19.06	133.2	83.31
T_8: Foliar spray of 10% jeevamrutha at 30 DAS + Foliar spray of 20% jeevamrutha at 50 DAS	71.83	16.89	74.2	49.52
T_9: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	72.58	17.80	106.7	69.63
T_{10}: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	73.36	17.10	114.8	68.62
T_{11}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	73.64	17.01	114.7	66.26
T_{12}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	72.18	17.58	118.0	69.66
$S.E_m\pm$	1.144	1.70	7.44	8.15
C.D. (P=0.05)	NS	NS	21.82	23.90

*NS- Non-significant *DAS- Days after sowing

Table 5: Boron content and uptake of pearl millet as influenced by different organic nutrient management practices

Treatments	B content (ppm)		B uptake (g ha^{-1})	
	B content in grain	**B content in straw**	**B uptake by grain**	**B uptake by straw**
T_1: Recommended package of practices	5.82	2.50	12.44	12.59
T_2: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	5.86	2.62	10.52	11.33
T_3: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	5.96	2.68	11.22	12.21
T_4: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	6.25	2.72	10.81	11.41
T_5: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	6.27	2.74	12.45	13.21
T_6: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	6.21	2.65	10.25	10.67
T_7: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	6.24	2.71	11.28	11.90
T_8: Foliar spray of 10% jeevamrutha at 30 DAS + Foliar spray of 20% jeevamrutha at 50 DAS	5.69	2.45	5.71	7.19
T_9: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	5.71	2.46	8.41	9.56
T_{10}: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	5.70	2.48	8.93	9.98
T_{11}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	5.72	2.54	8.90	9.91
T_{12}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	5.86	2.51	9.61	9.97
$S.E_m\pm$	0.20	0.10	0.66	0.70
C.D. (P=0.05)	NS	NS	1.92	2.06

*NS- Non-significant *DAS- Days after sowing

Table 6: Zinc content and uptake of pearl millet as influenced by different organic nutrient management practices

Treatments	Zn content (ppm)		Zn uptake (g ha^{-1})	
	Zn content in grain	Zn content in straw	Zn uptake by grain	Zn uptake by straw
T_1: Recommended package of practices	52.75	9.37	113.4	47.18
T_2: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	52.87	9.46	94.92	41.14
T_3: Soil application of vermicompost @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	52.96	9.79	99.93	44.83
T_4: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	54.99	10.22	95.39	42.87
T_5: Soil application of FYM @ 5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	57.74	10.65	114.5	50.60
T_6: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	53.06	9.97	87.56	39.97
T_7: Soil application of vermicompost @ 1.25 t + FYM @ 2.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	53.98	10.14	97.71	44.49
T_8: Foliar spray of 10% jeevamrutha at 30 DAS + Foliar spray of 20% jeevamrutha at 50 DAS	52.56	9.14	52.69	26.87
T_9: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	53.30	9.48	78.12	36.83
T_{10}: Soil application of vermicompost @ 1.25 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	53.17	9.18	83.22	36.89
T_{11}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 10% jeevamrutha at 45 DAS	53.07	9.79	82.44	38.18
T_{12}: Soil application of FYM @ 2.5 t ha^{-1} + Foliar spray of 20% jeevamrutha at 45 DAS	53.37	9.64	87.03	38.46
$S.E_m\pm$	1.49	0.65	5.83	3.09
C.D. (P=0.05)	NS	NS	17.09	9.07

*NS- Non-significant *DAS- Days after sowing

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