

Productivity of turmeric seed as influenced by methods of planting and levels of FYM

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ABSTRACT

Turmeric is an important crop utilized as condiments, medicines and cosmetics. India is the largest producer, and exporter of turmeric in the world. Kerala, Tamil Nadu, Maharashtra, are the important states which grow turmeric. But in Chhattisgarh turmeric is a non-traditional crop and grown in very limited scale. Among the various cultural practices, methods of planting and levels of FYM are the important factors, which are responsible for increasing the production and productivity. Therefore, the present investigation was conducted to find out the suitable method of planting and optimum doze of FYM for obtaining the maximum yield in this region. The experiment was conducted during 2007 and 2008, in the Horticultural farm of the RMD College of Agriculture and Research Station, Ambikapur. The soil of the experiment plot was medium loam of average fertility and well drained. Twelve treatment combinations consisting of three methods of planting *i.e.*, Ridge, Furrow and flat in main plot and four levels of FYM *i.e.*, 0, 10, 20 and 30 tones per ha in subplot were replicated thrice in RBD. Suprabha variety of turmeric was planted with the japplication of 120 kg N, 80 kg P₂O₅ and 60 kg K₂O per ha were uniformly applied in all treatments. The result revealed that ridge method of planting along with 30 tones FYM per ha was found significantly superior to increase the yield of turmeric (280.2 q/ha) as compared to Furrow and flat methods of planting and there interaction with control, 10 and 20 tons FYM per ha except interaction of Ridge and Furrow with 10 tons FYM per ha. Whereas, minimum 150.80 q/ha yield of turmeric was found under interaction of Furrow method planting and control.

Key words : Turmeric, Method of planting, Levels of FYM, Yield attributing traits

INTRODUCTION

India enjoys a pre dominant place in spice production in the world. It is also largest consumer of spices with domestic needs of 1.9 mT, leaving about 1.3 mT for the export. At though nearly 60 out of the recorded 107 spices are cultivated in India, only 16 being important. These are black pepper, cardamon, clove, chilli, garlic, ginger, turmeric, large cardamom, saffron, celery, cumin, fennel, fenugreek, ajwain seed and suwa. Turmeric is an important crop utilized as condiment, medicines and cosmetics. India is the largest producer and exporter of turmeric in world. Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra, Orissa, Assam and West Bengal are the important states, which grow turmeric. But in Chhattisgarh, turmeric is a non-traditional crop and grown in very limited scale. Among the cultural practices, methods of planting and levels of FYM are the important factors, which are responsible for increasing the production and productivity. But information regarding method of planting and optimum level of FYM for turmeric in Northern Hill Zone of Chhattisgarh is not available. Therefore, the present investigation was conducted to find out the suitable method of planting and optimum doze of FYM for obtaining the maximum yield of turmeric in this region.

MATERIALS AND METHODS

The experiment was conducted in Horticultural Farm of Raj Mohini Devi College of Agriculture and Research

Station, Ambikapur during 2007 and 08. The climate of the region is subtropical with an annual rainfall of 1300-1400 mm. The soil of the experiment plot was medium loam of average fertility and well drained. Twelve treatment combinations consisting of three methods of planting *i.e.*, ridge, furrow and flat in the main plots and four levels of FYM *i.e.*, 0, 10, 20 and 30 tonnes per ha in sub plots were replicated thrice in RBD having plot size of 17.64 sq.m. Suprabha variety of turmeric was planted at spacing of 60 x 20 cm, 120 kg N, 80 kg, P₂O₅ and 60 kg of K₂O per ha were uniformly applied in all treatments. Cultural practices were also adopted uniformly for all the treatments.

RESULTS AND DISCUSSION

Ridge method of planting (Table 1) had significantly increase the yield (368.59 g/plant, 54.18 kg/plot and 307.14 q/ha) of turmeric as compare to furrow and flat methods of planting. But furrow and flat methods of planting did not differ significantly with each other. While, minimum (219.10 q/ha) yield of turmeric was recorded under furrow method of planting.

As regards, levels of FYM it was seen that maximum (310.42 q/ha) yield of turmeric was recorded under 30 tonnes of FYM/ha which was significantly superior to control, 10 and 20 tonnes FYM/ha. Whereas, minimum (198.46 q/ha) seed yield of turmeric was recorded under control.

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Table 1: Effect of planting methods and levels of FYM on yield of turmeric

Treatments	Yield/plant or weight of clump (Mother rhizome + fingers) (g)	Fresh yield/plot (kg)	Fresh yield/ha (Q)
Planting methods			
Ridge method (M ₁)	368.59	54.18	307.14
Furrow method (M ₂)	262.93	38.65	219.10
Flat method (M ₃)	279.75	41.12	233.10
C.D. (P=0.05)	25.78	03.78	21.42
Levels of FYM			
Control (F ₀)	238.20	35.01	198.46
10 tonnes/ha (F ₁)	262.52	38.59	218.76
20 tonnes/ha (F ₂)	341.74	50.23	284.74
30 tonnes/ha (F ₃)	372.55	54.76	310.42
C.D. (P=0.05)	28.05	4.12	23.35
Combined effect of planting methods and levels of FYM (MXF) on productivity of turmeric.			
Ridge X Control (M ₁ F ₀)	318.58	46.83	265.47
Ridge X 10 tonnes/ha (M ₁ F ₁)	372.64	54.77	310.48
Ridge X 20 tonnes/ha (M ₁ F ₂)	374.64	55.10	312.35
Ridge X 30 tonnes/ha (M ₁ F ₃)	408.28	60.01	340.19
Furrow X Control (M ₂ F ₀)	194.18	28.54	161.79
Furrow X 10 tonnes/ha (M ₂ F ₁)	202.48	29.76	168.70
Furrow X 20 tonnes/ha (M ₂ F ₂)	312.45	45.93	260.37
Furrow X 30 tonnes/ha (M ₂ F ₃)	342.62	50.36	285.48
Flat X Control (M ₃ F ₀)	201.85	29.67	168.19
Flat X 10 tonnes/ha (M ₃ F ₁)	212.45	31.23	170.03
Flat X 20 tonnes/ha (M ₃ F ₂)	337.92	49.67	281.57
Flat X 30 tonnes/ha (M ₃ F ₃)	366.78	53.91	305.61
C.D. (P=0.05)	38.15	5.60	31.74

In case of effect of different combination of methods of planting and levels of FYM on productivity of turmeric seed, it was observed that the maximum (340.19 q/ha) yield of turmeric was recorded under interaction of ridge method of planting and 30 tonnes of FYM (M₁F₃) which was significantly superior to all other interactions of methods of planting and levels of FYM except M₁F₁ and M₁F₂. while, the minimum (161.79 q/ha) yield of turmeric was noted in interaction of furrow method of planting and control (M₂F₀).

Maximum yield of turmeric was recorded under ridge method of planting as compare to furrow and flat methods of planting. This may be due to the availability of friable soil a better aeration on ridge method of planting as compare to flat and furrow method of planting. These findings are in line with findings of Koewenhoven (1970), Lengu *et al.* (1972) and Baghel and Khare (1989) who reported that planting of tubers in the ridges increased the yield of turmeric. This may be due to improvement of soil texture as well as higher fertility level of the soil.

Similar results were also reported by Subbaro and Rabishankar (2001) in brinjal.

It can be concluded from above results that ridge method of planting along with 30 tonnes FYM/ha was found significantly superior to increase the yield of turmeric (340.19 q/ha) as compare to furrow and flat methods of planting.

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