International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.10 No.4 Mar – Apr 2023

CBR of Ginger Cultivation with special reference to Soil type: A Comparative Study of Satara and Aurangabad District

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DOI- 10.5281/zenodo.7828303

Introduction:

India is known as "The Home of Spices". Ginger is one of the important spice crops having an area of 4,27,423 hectares with a production of 16,18,627 tons in World. At international level India is a second largest country with 27.24 percent of the total global production of ginger. Other important producer countries are China, Indonesia, Nepal, Nigeria, Bangladesh, Thailand, Philippines, Cameron and U.S.A. The countries importing the highest amount of ginger are the United States, Bangladesh and United Kingdom. Behalf of the ginger having an area of 1,05,500 hectares with a production of 5,17,800 tones in India. Major production of this important spice crop is confined to Assam, Kerala, Gujarat, Mizoram, Sikkim, Arunachal Pradesh, Orissa, and Maharashtra.

Ginger commonly called '*Aale*' is grown in an area of 3,426 hectares with a production of 34,267 metric tons in Maharashtra. More than 49 percent of the area and production is mainly from Satara and Aurangabad district and hence ginger cultivation is the backbone of the particular farmers.

Area under different exotic varieties like, Maran, Rio-De-Janiro, Udaypuri, Chhattisgarh, Godhra, Bangalore, Himachal and Suprabha gradually increase in different pockets of Maharashtra. In fact, varied agro-climatic conditions prevailing in India are suitable to grow almost all spices. However, soil is another important factor which effect on productivity and production of any crop.

And hence here is an attempt to try find out soil type-wise cost benefit ratio (CBR) of Satara and Aurangabad district of Maharashtra State which is further guide for remaining ginger growers.

Study Region:

The study region selected for present investigation is Maharashtra State in general as well as Satara and Aurangabad districts of the State in particular. Maharashtra State is located in central part of India between 15°44' to 20°60' North latitudes and 72°36' to 80°54' East longitudes and drains the Godavari, Bhima and Krishna rivers. Having 3,07,762 sq. km. area (9.36 percent of India), state is divided in 36 districts and it support 11,23,72,972 population. Geographically the state divided into two broad categories one is 'Konkan' and other one is 'Maharashtra Plateau'.

The daily maximum temperature in hot season is 32^0C to 42^0C while the daily minimum temperature in cold season is between 12^0C to 20^0C. The region receives rainfall mainly from south-west monsoons, ranging between 5000mm. to 200mm. Broadly the year may be divided into three seasons. The study region including black soil, lateritic soil, alluvial soil and brown soil occurred in different pockets in Maharashtra.

Objectives:

In view of the above present investigation, aims to analyse the cost benefit ratio (C.B.R) from ginger cultivation for different soil types in Satara and Aurangabad district of Maharashtra.

Hypothesis:

The returns from ginger cultivation vary according to the types of soil.

Database:

Basically, particular study is based on primary data. Primary data is collected through intensive field sample survey and

observations with the help of questionnaire and schedule technique.

Methodology:

Ginger gives lucrasive gain than any other spice crops. And hence researcher selects ginger for detail investigation. Then Maharashtra state is selected in general as well as Satara and Aurangabad district of this state in particular on the basis of highest area under ginger cultivation. Both the district shares 49.18 percent area of ginger as compare to Maharashtra. Whereas 28 villages from 7 tahsils in Satara district and 12 villages from 6 tahsils in Aurangabad district selected for present investigation. The stratified random sampling (10%) method has been adopted for the selection of villages. 84 growers from 28 villages in Satara district and 36 growers from 12 villages in Aurangabad district selected for present investigation. Here stratified purposive sampling method used for selection of ginger growers for calculating the CBR of different soil types in study region.

Limitations:

At the time of collection of primary data, it has been observed that some of the farmers purposively could not give correct and relevant information. To overcome this difficulty an attempt has been made to achieve the relevant information by consulting the educated and knowledgeable farmers of the neighborhood area.

Soil Type-Wise Cost Benefit Ratio Of Ginger Cultivation:

The comparative study of different soil type is beneficial for farmers. If the information to farmers about which soil type select for more productivity and it resulted into increase in the production for farmers and they earn more benefit. So that the comparative study of different soil type is essential.

Table 1.1 reveals that the cost benefit ratio changes according to different soil type. The analysis reveals that the cost benefit ratio changes according to types of soil. Table 1.1 reveals that the yield in kg/ha, gross cost in Rs/ha. gross return in Rs/ha, net returns Rs/ha and cost benefit ratio from ginger cultivation of different soil type. The average per hectare yield has been recorded by medium brown soil is 41,963 kg/ha which is greater than the regional average. The deep brown soil type has recorded 37,841 kg and shallow brown 36,910 kg which is always greater than regional average. However medium black soil (34,220 kg./ha), deep black soil (31,693 kg./ha) and shallow black soil (29,392 kg./ha) are the poor performance and below the regional average.

Particular table 1.1 also reveals that the region as a whole receives on an average per hectares cost of production is Rs.4,70,127.62 In which highest per hectare cost has been recorded by shallow brown soil of Rs.4,87,415.49 which is greater than the regional average of Rs. 4,70,127.62 followed by deep brown (Rs 4,76,238.75) Besides this shallow black (Rs.4,65,037.71) deep black (Rs.4.57,928.77) and medium black (Rs 4,52,977.21) which is lower than the regional average of Rs.4,70,127.62

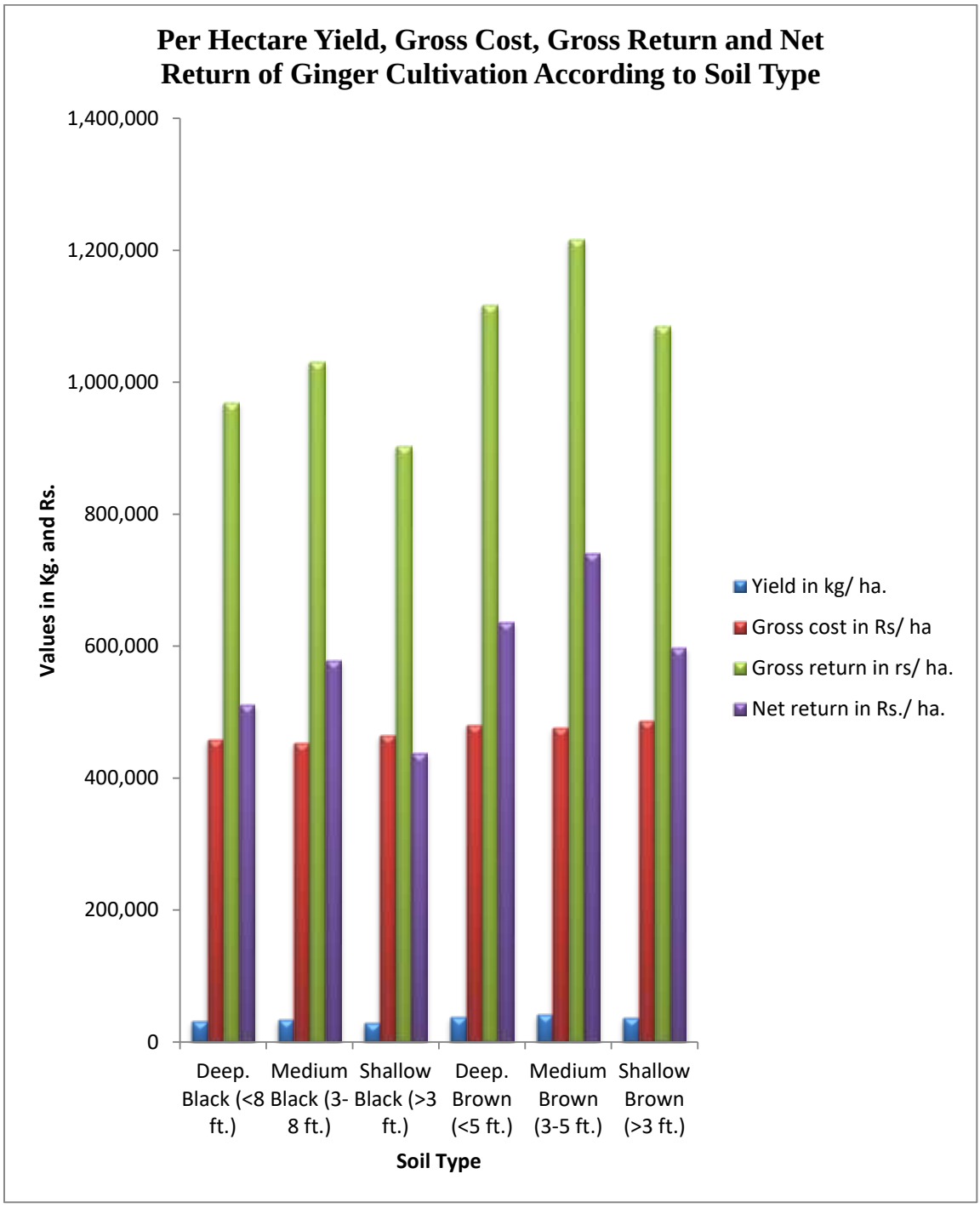
The analysis reveals that the gross return from medium brown (Rs.12,17,056.63) deep brown (Rs.11,17,500.76) and shallow brown (Rs.10,84,729.43) is greater than the regional average of Rs.10,53,923.75. Behalf of these medium black soil (Rs.10,31,560.57), deep black (Rs.9,69,409.24) and shallow black (Rs.9,03,285.83) which is lower than the regional average.

After all the analysis reveals that the highest net returns received from medium brown soil is Rs.7,40,817.88 which is greater than the regional average of Rs.5,83,796.12. Besides this deep brown (Rs.6,36,368.96) and shallow brown (Rs.5,97,277.94) which is always greater than the regional average of (Rs.5,83,796.12) which is lower than the regional average.

Table 1.1
Per Hectare Yield, Gross Cost, Gross Return, Net Return And Cost Benefit Ratio Of Ginger Cultivation According To Soil Type.

1	2	3	4	5	6	7	8	9	10	11	12
Soil Type	Total Sample growers in no. & in (%)	Total Area observed in ha.	Total yield in kg.	Yield in kg/ ha.	Gross cost in Rs/ ha	Total Return in Rs./ ha from ginger	Total Return in Rs./ ha. Intercrop	Gross return in Rs/ ha.	Net return in Rs./ ha.	C.B.R.	Rank
Deep. Black (<8 ft.)	24 (20.00)	16.16	6,02,500	31,693	4,57,928.27	8,20,183	1,49,226.24	9,69,409.24	5,11,480.47	2.11	5
Medium Black (3-8 ft.)	33 (27.5)	19.01	5,53,000	34,220	4,52,977.21	8,85,885	1,45,675.57	10,31,560.57	5,78,583.36	2.27	3
Shallow Black (>3 ft.)	19 (15.83)	9.05	2,66,000	29,392	4,65,037.71	7,60,357	1,42,928.83	9,03,285.83	4,38,248.12	1.94	6
Deep. Brown (<5 ft.)	14 (11.66)	10.61	4,01,500	37,841	4,81,131.80	9,80,031	1,37,469.76	11,17,500.76	6,36,368.96	2.32	2
Medium Brown (3-5 ft.)	22 (18.33)	17.98	7,54,500	41,963	4,76,238.75	10,87,203	1,29,853.63	12,17,056.63	7,40,817.88	2.55	1
Shallow Brown (>3 ft.)	08 (6.66)	4.24	1,56,500	36,910	4,87,451.49	9,55,825	1,28,904.43	10,84,729.43	5,97,277.94	2.22	4
	120	77.05	27,34,000	35,189	4,70,127.62	9,14,914	1,39,009.74	10,53,923.75	5,83,796.12	2.24	

Source: Compiled by the researcher through intensive fieldwork



Conclusion And Recommendations:

The aforesaid analysis reveals that Medium brown soil locally called *Malran* soil gives maximum yield and net returns from ginger cultivation. As well as highest cost benefit ratio obtained from Medium brown soil. However, the area covered by this soil is only 18.33 percent of ginger area of the total area under ginger cultivation in the study region. It means cost benefit ratio (CBR) changes according to the different type of soil in ginger cultivation.

The cost benefit ratio per hectare of ginger crop at regional level is 1:2.24. The micro level analysis according to variety clearly indicates that the highest cost benefit ratio has been obtained from medium brown soil *(Malran)* (1:2.55) followed by deep brown soil (1:2.32) and medium black soil (1:2.27). Behalf of this shallow brown soil (1:2.22), deep black soil (1:2.11) and shallow black soil (1:1.94) are the poor performance and below the regional average.

The aforesaid analysis reveals that medium brown soil gives maximum yield and net returns in Rs./ha. Besides these highest cost benefit ratios obtained from medium brown soil. Because brown soil has higher porosity and permeability than black soil. As well the brown soil has freeness, aeration, and relatively low water holding capacity which is ideal for rhizome development. In contrast, the black soil has high capacity of water holding which resulted in the possibility of the attack of soft rot and decrease in production. So that brown soil has higher cost benefit ratio as compare to black soil and which is ideal for ginger cultivation.

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