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Comparative economic study of tulsi and paddy cultivation in Sitapur district of Uttar Pradesh

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ABSTRACT

The present study for comparison of aromatic crop tulsi (*Ocimum basilicum*) and cereal crop paddy (*Orzya sativa*) cultivation has been carried out at farmers' field of Sitapur district of Uttar Pradesh. The tulsi is an essential oil bearing plant. Oil of this plant is highly valuable and is used in flavour, cosmetic and pharmaceuticals industry. Paddy has been cultivated in our country as a major food grain crop since long time. During the study period 50 farmers under cultivating tulsi and paddy has been selected from Sitapur District of Uttar Pradesh. The primary data were collected from the selected farmer's field on profitability comparison between tulsi and paddy cultivation. Simple statistical tools and technique has been used for data analysis of the socio-economic profile, cost of cultivation, profitability. It has been observed during the study that tulsi gives higher returns over paddy. However, the input cost of paddy is higher than tulsi crop but the net return of tulsi was more profitable than paddy. The benefit cost ratio has been observed 2.70 and 1.34 of tulsi and paddy respectively. It is suggested from the study that maximum profit is generated through tulsi cultivation followed by paddy crop. This study can set an example of profitability model for entrepreneurship development in other part of country.

Key words: Cost of cultivation, Economics, Marketing, Profit and Benefit cost ratio.

INTRODUCTION

Tulsi (*Ocimum basilicum*) CIM – Soumya variety (*Kharif* season) has got the great medicinal value and is also widely used in pharmaceuticals, perfumery, cosmetic industries, aroma therapy and herbal tea. Main chemical constituents are Methyl chevicol, linalool and citral. (Aus Gyanya, 2018). The fresh leaves of tulsi are taken by the millions of people every day. The study of cultivation of tulsi has been found to be highly profitable and employment generation. (Suresh *et.al.* 2012). The crop has vast potential for cultivation as a short duration economically viable aromatic crops that fits well with the existing cropping pattern.

India is one of the world's largest producers of rice after the China accounting for about 20% of all world rice production. Rice production of India 110.15 million tonnes 2016-2017, (Agricultural statistics- At a glance 2017). Rice is India's preeminent crop, and is the staple food of the people of the eastern and southern parts of the country. Paddy has been cultivated in our country as a major food grain crop since long time. The paddy cultivation plays a major role in socio-cultural life of rural India. Nutrient value of rice, it content highest amount of carbohydrate about 65-70 percent, 7-8 percent protein, 2-3 percent fat and rich source of mineral and vitamins like phosphorus, manganese, iron, folic acid, thiamine and niacin. The present study is the economics of production of tulsi aromatic crop. Very few studies are available relating to tulsi, hence the present study is undertaken comparative study of economics of tulsi and paddy cultivation at the farmer field.

MATERIALS AND METHODS

Tulsi medicinal and aromatic crop cultivation in Uttar Pradesh is concentrated in the district of Sitapur due to the favourable climate. The present study was purposively selected 50 tulsi and paddy growers. The recommended package of practices for Tulsi cultivation developed by CSIR-CIMAP and traditional cultivation practices of paddy were adopted by the growers. The primary data through personal interview method with the help of well structured schedules were collected for tulsi and paddy cultivation farmers. On the basis of sample mathematical tools, the comparison of cost of cultivation, returns and benefit and cost ratio of both crops were calculated.

RESULTS AND DISCUSSIONS

Socio-economic profile of the farmers: Data from selected farmers were collected and analysis in respect of average family size, literacy status occupation, average landholding, cropping pattern, and on farm asset were discussed in the Table 1. The average family size was found about 6.50 and about 85.60 percent population were found literate in the study area. The majority of the household of the study area were dependent on agriculture with dairy, poultry for

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Table 1: Socio–economic profile of the farmers.

Particulars	Averages
Average family size (No.)	6.50
Literacy status of family members (%)	85.60
Occupation (%)	
Agriculture	85.68
Allied sector (dairy plus services)	14.32
Caste composition (%)	
General	21.05
Other backward castes	50.00
Schedule castes	28.95
Average landholding (ha)	1.65
Cropping Pattern Agriculture crops (paddy, wheat, and sugarcane etc.)	86.85
Aromatic crops (mentha, tulsi and vetiver etc.)	13.15
Average farm assets Rs. (farm building, irrigation structure, farm equipment, bullocks distillation units)	95541

Table 2: Comparative cost of tulsi and paddy cultivation (`/ ha.)

Particulars	Tulsi	%	Paddy	%
Variable cost				
Hired labour	5732	29.79	7653	29.89
Family Labour	2403	12.49	5678	22.17
Human labour	8135	42.28	13331	52.06
Machine/Tractor	2068	10.75	3380	13.20
Seed	874	4.54	570	2.22
F.Y.M	1811	9.41	850	3.31
Fertilizers	1798	9.35	4500	17.57
Irrigation	1225	6.37	2100	8.20
Distillation charges	2677	13.91	0	0
Interest on working capital	651	3.38	872	3.40
Total variable cost	**19240**	**100.00**	**25603**	**100.00**

livelihood. The average landholding of the farmers is found to be 1.65 hectare. The major investment was made by the farmers on the farm asset like irrigation facility, farm equipments, bullocks and house, etc.

Comparative cost of cultivation of tulsi and paddy: Per hectare cost and returns of tulsi and paddy cultivation calculated at current price prevailing in market has been presented in Table 2. The cost of cultivation of tulsi found to be `19240/- out of which the maximum share was of labour (42.28%) followed by distillation charges (13.91%) and machine/tractor (10.75%) as a three months crop. In case of paddy crop, the cost of cultivation was ` 25603/- per hectare out of which labour cost share (52.06%) was maximum followed by fertilizer (17.57%) and machine/ tractor (13.20%) as a four months crop. It is concluded to paddy higher cost of cultivation than that tulsi crop.

Table 3: Retuns of tulsi and paddy cultivation.

Retuns	Tulsi	Paddy
Yield (Oils in Kg.)/ Yield in qts	95	50
Price /Kg.	750	1200
Total cost	19240	25603
Cost in per kg/ qts	202	512
Total return ₹/ ha.	71250	60000
Net income per ha.	52010	34397
Return in per kg./qts	547	687
Benefit – cost ratio	2.70	1.34

Economics of tulsi and paddy cultivation: The net return over different cost is presented in the Table 3. The average tulsi yield (oil) was found 95 Kg. per hectare whereas in case of paddy 50 quintal gain yield per hectare was obtained. The net return over cost was found higher in case of tulsi i.e. `52010/-.than paddy which is ` 34397/- The benefit cost ratio was found 2.70 (Tulsi) and 1.34 (paddy). It is observed from the study that maximum profit is generated through tulsi cultivation followed by paddy crop.

CONSLUSION

It is concluded from the study that the major source of livelihood of the farmers has been found agriculture and allied activity. The farmers are like to adopt new crop and technologies for their livelihood improvement. The tulsi cultivation was found to be profitable for the selected farmers of the study area. The net return over cost of tulsi is considerably higher than paddy. Also tulsi crop is also well fitted between the traditional cropping patterns as a Kharif season. However it was recommended from the present study that the tulsi cultivation can be promoted in study area over traditional paddy to obtain higher profit returns which in turn will improve the socio-economic status of the farmers.

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