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RESEARCH ARTICLE

A COMPARATIVE ANALYSIS OF ORGANIC AND INORGANIC BASMATI RICE FARMING IN PACHCHAWALA VILLAGE OF UTTARAKHAND

***Sonu Kaur**

Ph.D Research Scholar Department of Geography, R.H. Govt., P.G. College Affliated to Kumaun University Nainital, Uttarakhand

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**Corresponding author:*
Sonu Kaur

ABSTRACT

The organic farming is gaining importance in all over the world. This is one of the several approaches to promote sustainable agriculture. Organic farming has large potential for Uttarakhand state. A part of the state consists of plains and foothills, where most farmers practice chemically intensive farming. Conversion to organic farming would have both financial and environmental benefits for these areas. The rest of the state consists of mountains, where the use of chemicals in agriculture is small. Conversion to organic farming in these areas will pose relatively little difficulty and provide farmers with a comparative advantage. The foothills of Uttarakhand are well known for their organic basmati rice. Therefore, cultivation of organic basmati rice provides an important opportunity for farmers in these areas. So an attempt is made in this research paper to comparative study of organic and inorganic rice framing at pachchawala village in the state of Uttarakhand.

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INTRODUCTION

These days, farming technology involved using of agrochemicals such as fertilizers and pesticides in greater extent for higher yield in most of the crops. However using these chemicals are impacting the environment and causing health problems one should come out of the chemical intensive agriculture and start thinking of organic cultivation of crops. Organic farming or cultivation basically focuses on at achieving agro-eco system which is socially acceptable and ecologically sustainable. Organic cultivation uses ecological principles for crop management. As basmati rice production is concerned, india is the 1 producer and exporter of basmati rice in the world. In india, basmati rice is usually used in biryani due their texture/shape and fragrance. Uttarakhand is among few pioneer organic states of the country. According to report of National Centre of Organic Farming, Ghaziabad, in 2015-16, 31065.61 hectare area in Uttarakhand and 47,179 farmers engaged in organic farming in Uttarkhand (APEDA,2017).

Objectives of the study: The present study has been conducted with the following main objectives;

- To examine the comparative study on organic and inorganic basmati rice farming in Pachchawala village of Uttarakhand.
- To analyze the problems and prospects of popularizing organic farming and to suggest appropriate policies and extension supports.

METHODOLOGY

Present study is based on primary data collection. The data was collected from the farmers of Pachchawala village of Uttarakhand. The sampling strategy is simple random sampling method. The sample size is 44 respondents of both categories organic rice and inorganic rice. The tool used for data collection was interview schedule. The interview schedule contained questions regarding their total land, cost of cultivation, crop production, livestock etc. The findings are presented in the form of charts and diagrams.

Charts and comparative tabulations are used for easier and simpler understanding and presentation of data.

Study Area: The pachchawala village is comes under Kashipur block of udhamsinghnagar district in the state of Uttarakhand. It is located at 29°22' north latitudes and 78°95' east longitudes. The total geographical area of the village is 4.98 sq.km. It is situated at a distance of about 10 km from kashipur(main city) and about 68 km from rudrapur(district headquarter).The total population of the village is 774 in which male population is 402 around 51.9% and female population is 372 around 48.1%.(census of india, 2011). The entire area of village comes under terai region of Uttarakhand and terai region is formed by the deposits of sand, mud etc brought by the rivers. So terai regions are fertile, in which heavy agriculture is produced. For this reason the population in this area is also high. Being a lowland area, the means of irrigation here are also infinite. The region also has favorable climatic conditions for agriculture, due to which agriculture is developing rapidly here.

DATA ANALYSIS AND RESULTS

Table 1. Comparative study between organic and inorganic basmati rice farming

Details	Organic	inorganic
No. of respondents (farmers)	22	22
Total land (ha)	22.52	24.64
Area cultivated under basmati rice (ha)	21.96	20.52
Cost (in rupees)		
Seed	17326	13235
Fertilizer	74883	83106
Plowing and planting	161318	152874
Weed management	59423	57045
harvesting	76794	67387
Electricity	73609	69850
Transport	26352	24624
Total cost	489705	468121
Yield (in quintal)	662.09	750.21
Total income	1456598	1275357
Total benefit	966893	807236

Source: field survey (2015-16)

Table 2. organic vs inorganic basmati rice farming (per hectares cost and profit)

Detail	Production (quintal per ha)	Production cost (rupees per ha)	Income (rupees per ha)	Profit (rupees per ha)
Organic	30.15	22300	66330	44030
inorganic	36.56	22813	62152	39339

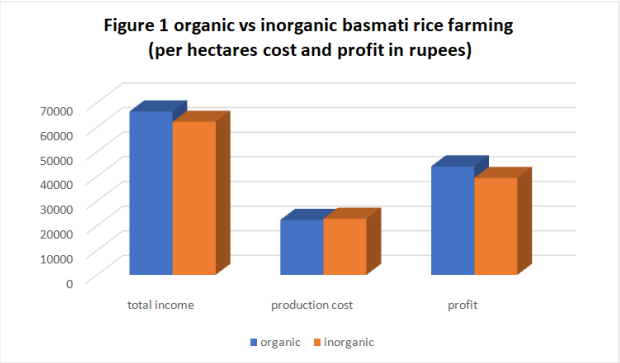
Source: field survey (2015-16)

Size of the land: There was a significant difference in the land sizes of the farmers in the village. The village had a mixed form of farmers, both big and small. About 28% of the farmers in the village have the farmers in the village have land less than 1 ha. And 68% of the farmers were found to have land between 1 ha and 2 ha and the number of farmers with more than 2 ha was 4%.

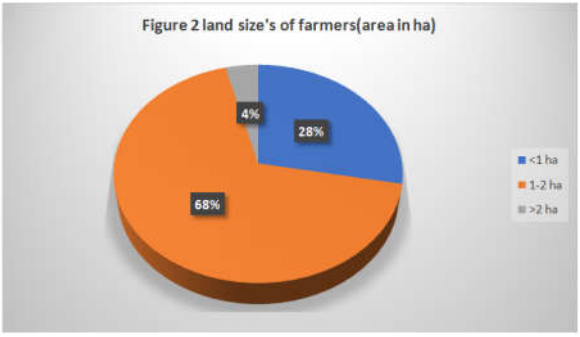
Varieties of basmati rice: pusa 1121, taraoi basmati, Dehradun basmati and basmati 370 were mainly cultivated basmati varieties in the village. The main varietiy of basmati rice on the cultivable land of the village was pusa 1121 (around 48%). Apart from this, taraoi basmati 20%, Dehradun basmati 12% and basmati 370 15% were grown on the study area.

Seed selection process: generally, 77% farmers said that they had taken the seeds from agriculture department, 21% farmers bought the seeds from the local market and only 2% farmers had already stored a part of the produce in the form of seeds, which they used as a seed.

Seed Treatment: once seeds are selected, they should be treated properly. Take 1 kg of salt and dilute in 10 liters of water. Soon after this, 8-10 kg of seeds should be poured in this solution to sort out the quality seeds.



Source: field survey.



Source: field survey.

The quality seeds will reach the bottom where as waste seeds float in the solution. Throw the waste seeds and take out quality seeds and soak them with fresh water for couple of time to wash away the salt. Then these seeds should be kept in the solution of 10 litres of water, 5 grams emison and 2.5 grams of agromycin or 1 gram of treptomycin for 1 day. After 1 day, the rice seeds should be spread in a place with wet sacks on the seeds. Then sacks should be waters continuously or at frequent intervals for germination process to start.

Land preparation and transplanting: The main field should be dry ploughed 2 to 3 weeks before planation. The field should be leveled properly. Normally land preparation for rice crop cultivation is 1 time ploughing and 1 time puddling. Make sure the field is flooded at least 3 to 4 days before transplanting the seedlings

Protection of plants: In the rice cultivation, for controlling the weeds growth, chloro, hydrochloride, cabendazimmacozeb, trigaphorusetc insecticides were used by the farmers and farmers producing organic basmati reported that they did not use insecticide. They used organic manure, neem manure and compost manure for weed control.

Means of Irrigation: Basmati rice crop requires 2 to 4 cm of water in the field throughout the growing season. The main mean of irrigation in the village was electronic tube wells, 92% of the irrigation in the village was done by electric tube wells, only 8% of the irrigation was done by canals, due to the lowland area in the village there is no shortage of irrigation facilities. There are mostly electric tube wells whose depth is about 20 to 30 feet.

Harvesting: This crop will be ready for harvesting when crop turns to golden colour. For the harvesting and threshing of basmati rice, manual labour was mostly used. In the village, about 68% harvesting was done by labours and for 32% combine machine was used.

Animal husbandry: On the basis of the survey data, one of the main features of the area was that most number of animal husbandry is being done by basmati farmers. There is also a commercial dairy in the village. Basmati straw is used as fodder for cattle. For this reason some farmers do not use chemical fertilizers and pesticides in the crops.

CONCLUSION

Uttarakhand is an agricultural state. Here by using organic farming , not only the environmental challenges associated with agribusiness can be dealt with, but employment opportunities can also be increased. Organic farming can not only produce good quality crops for a long time but can also get pure and clean grains, vegetables, fruits and flowers and gradually increase the lost fertility of the soil. In areas where the environment has been damaged by chemical agriculture, organic agriculture can make an important contribution to sustainable development and environmental balance in the deteriorating environmental conditions in such parts.

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