P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating: 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 1; January 2025; Page No. 420-422

Received: 09-10-2024
Accepted: 17-11-2024

Indexed Journal
Peer Reviewed Journal

Cost and return analysis of apple crop of horticultural entrepreneurs in Jammu division of UT, Jammu and Kashmir

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DOI: https://doi.org/10.33545/26180723.2025.v8.i1g.1561

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Abstract

Hortipreneurs is interpreted from the word "agripreneur" which means an entrepreneur whose primary business is horticulture. Hortipreneurship therefore is the community oriented, environmentally sustainable and market led development of horticultural business. A study was conducted in five districts of Jammu division. Multistage random sampling technique was employed for the study. At first out of 10 districts of Jammu division, 5 districts namely Ramban, Doda, Kishtwar, Rajouri and Poonch were selected purposively because it has maximum area and production of selected horticulture based enterprise. In the second stage two blocks from each selected district were selected for study. From each sub division 25 no. of horticulture entrepreneur were selected by random sample technique. Thus a total sample of 250 horticultural entrepreneurs was selected for the purpose of the study. The primary data on horticultural entrepreneurs were collected by surveying through interview method with the help of pre tested questionnaire and there after analysed the constraints encountered by them at various levels. Horticultural Orchard was a profitable venture in all the 3 districts for horticultural entrepreneurs with a B:C ratio 1:0.60 in Ramban, 1:0.96 in Doda and1:1.04 in Kishtwar. The per hectare cost of cultivation was worked out to Rs.185093 for Ramban, Rs.157335 in Doda and Rs.162055 for Kishtwar with major contributors were Labour Charges and Plant Protection Chemicals. The gross return, return over variable cost and net return per hectare were Rs.294905 and Rs.142081on an overall basis.

Keywords: Horticulture, marketing, GDP, production, gross return and net return

Introduction

The agriculture sector is one of the most important industries in the Indian economy which means it is also a huge employer, the horticultural sector contributes to about 30 per cent in agricultural GDP from about 14 per cent of total area under horticultural crops and contribution of about 40 per cent of the total agriculture export earnings besides its share of nearly 20 per cent in total agricultural labour force. Thus, operation and cultivation of horticultural crops continues to play a fundamental role in raising prosperity of our nation apart from linked health and fortunes of its people (Vision 2050 IIHR, 2014) [2]. In India, other sectors have failed to generate much of employment opportunity to the growing working populations. Horticulture is increasingly recognised as a sunrise sector, owing its potential. The diverse agro-climatic conditions and rich diversity in crops and genetic resources enable India to produce wide range to raise farm income, provide livelihood security and earn foreign exchange through export. The diverse agro-climatic conditions and rich diversity in crops and genetic resources enable India to produce a wide range of horticultural crops round the year. The horticultural crops viz., fruits, vegetables, plantation crops, medicinal crops and ornamental crops plays a vital part in improving health, food, and livelihood and nutrional security. It has played a vital part in the nation's poverty alleviation, country's nutritional security and employment generation programmes over the years. Horticulture has aroused as a major agricultural enterprise in accelerating the pace of the economy. Three agriculture sector challenges will be important to India's overall development and the improved welfare of its rural poor. Horticulture is the backbone of the Union Territory of Jammu & Kashmir's economy with a yearly turnover of Rs.12000 crores with Jammu Division's share of over Rs. 1400 crores. Presently, an area of 1.19 lakh ha. is under fruit cultivation in Jammu Province with an annual production of 2.47 lakh M.T. (2019-20). Horticulture has been declared as a thrust area by the Government of Jammu & Kashmir and various developmental schemes including centrally sponsored schemes have been taken by the Department for promotion of this sector and give further boost to it. Apple farming has become a significant means of livelihood for small and marginal farmers.

Methodology

Locale of the study: The present study was conducted in the sub-tropics of Union Territory Jammu and Kashmir, Out of 10 districts of Jammu division, 5 districts were selected for the study namely Ramban, Doda, Kishtwar, Rajouri and Poonch. (Total area under horticulture in Jammu division is

11880.500ha with the production of 274006.70 MT and productivity of 2.31 MT/ha.

Sampling procedure: List of all Progressive Orchardist was procured from Chief Horticultural officer of each district. Multi-stage random sampling technique was employed for the study. At first stage, out of 10 districts of Jammu division, 5 districts namely Ramban, Doda, Kishtwar, Rajouri and Poonch were selected purposively because maximum no. of area and production of selected horticulture based enterprise falls under it by seeking the information from (Directorate of Horticulture, Jammu) In the second stage, 10 blocks (2 from each district) were identified from all the five districts and a proportionate sample of villages were drawn. In the third stage, from the selected village a proportionate sample of horticulture entrepreneurs were drawn. A total sample of 250 horticulture entrepreneurs, 25 from each block were be selected.

Data collection: The primary data were collected through a well-structured and pre- tested schedule by personally interviewing the horticultural entrepreneurs of all the five districts of Jammu region. Secondary data were collected from various official websites, annual reports, Directorate of horticulture, research articles, Package of Practices of SKUAST-J newspapers etc. Collected data were further tabulated and analyzed by using suitable statistical tools.

Results and Discussion

1Item wise cost structure of apple orchard (रु./ha)

The operation wise cost of cultivation of apple orchard of selected horticultural entrepreneurs is presented in Table1. It is revealed that per hectare cost of cultivation (fixed + variable cost) in Ramban, Doda and Kishtwar was रु.185093, रु.157335 and रु.162055 respectively with the overall average of रु.152824. Expenditure on planting material, human labour and Farm yard manure were the important components of operational cost. Similarly, rental value of owned land was the most important component of fixed cost. The results further revealed that out of all the inputs used, the expenditure incurred on labour for (irrigation, chemical application, training and pruning grading, sorting and packaging) was found to be highest with an average of रु.47955and plant protection chemicals (रु.20698/ha).

Cost and return structure of apple orchard

Cost and return analysis of apple orchard on per hectare basis on all the selected horticultural entrepreneurs were analyzed and presented in Table.2 which revealed that total cost was highest in Ramban district (रु.185093) followed by Kishtwar district (रु.162055) and least in Doda (रु.157335). The gross returns realized that gross returns was highest on the enterprise of Kishtwar district रु.331384 than the enterprise of Doda district रु.308875 and Ramban district (रु.297000). On all the enterprise gross return was रु.294905. The net return per hectare were found to be highest for the entrepreneurs of Kishtwar district (रु.169329 followed by Doda district (रु.151540) and in Ramban district (रु.111907). Overall on all the selected horticulture entrepreneurs for apple orchard the gross returns and net returns were रु.294905/ha and रु.142081/ha. The cost benefit ratio was highest for Kishtwar district 1:1:04 and least in Ramban district (1:0:60) with an overall average 1:0.93. Therefore findings of the study

Table 1: Item Wise operational costs of apple orchard (Rs/ha)

S .No.	Name	Ramban	Doda	Kishtwar	Overall
1	Labour.(irrigation, chemical application, training & Pruning, harvest, grading, sorting, packaging, transport) @Rs 400-550/day	51190	46710	45965	47955
2.	Irrigation (Electrical installation borewell)	2497	2164	2234	2298
3.	FYM @ 100 kg/ha	765	849	793	802
4	**Fertiliser**				
	Urea (2 split dose) @291.9 Kg/ha	2838	2335	2747	2640
	DAP @ 177Kg/ha	6519	6195	6356	6357
	MoP @ 415Kg/ha	15006	15355	15285	1521
5	**Plant Protection**				
	Weed Management (Cybermethrin, Paraquat 0.5%)	1636	1575	1785	1665
	Disease Management (Tree Oil, Superstar dodine @ 60gm/100 lit of water, Flower dry after Kantop, Quechflor @50gm/100 l water, Mancozeb M-45 @300g/l water, Captan @ 100ml/l water, Dodine@ 100g/100 l water, Mancozeb @ 200g/100 l water, Dithianon @75g/100 l water, Hexaconazole @30 ml/100 l water, Mancozeb+ Sulphur @ 300gm+ 200g, Crabendazim @ 100gm/100 l water, Petal Fall stage- Crabendazim @50g/100 l water, Wolly Aphid Kishtwar (Neem Oil- Methyl Demeton 25 EC *0.025%, Malathion 50 EC (0.05%)	21714	19382	20996	20698
	Insect Management (chlorpyriphos 20EC @ 2ml/ litre of water, methyl demeton 25EC @ 1ml/litre of water, quinalphos 25EC @ 2ml/litre of water, malathion 50 EC @ 2ml/litre of water)	5138	5037	4953	5043
6	Interest on work capital @ 12% per annum	12680	11763	11919	10478
A	Total Variable Cost (1-6)	118347	109790	111248	97792
7	Depreciation	2396	2185	1953	2178
8	Earned Value of rented land	64350	45360	48854	52854
B	Total Fixed Cost	66746	47545	50807	55032
9	Total Operations/Maintenance cost A+B	185093	157335	162055	152824

Table 2: Cost and Return Analysis of Apple Orchard

Name	Ramban	Doda	Kishtwar	Overall
Gross Yield (q/ha)	180	175	184	169
Average Price (Rs/q)	1650	1765	1801	1745
Gross Returns (Rs/ha)	297000	308875	331384	294905
Net Returns (Rs/ha)	111907	151540	169329	142081
Benefit Cost Ratio	1:0.60	1:0.96	1:1.04	1:0.93

Conclusion

The study on "horticultural entrepreneurs" in the Jammu division reveals significant insights into the economic viability and challenges of horticultural entrepreneurship, particularly in apple orchards. The research, conducted across five districts—Ramban, Doda, Kishtwar, Rajouri, and Poonch—highlights the varying costs and returns associated with horticulture in these regions. The analysis shows that apple orchards are a profitable venture, with the benefit-cost ratio being highest in Kishtwar (1:1.04) and lowest in Ramban (1:0.60), indicating that horticultural practices in different districts yield different levels of profitability. The major cost components, including labour and plant protection chemicals, significantly impact the overall cost structure, but despite these expenses, the gross and net returns in all districts are substantial. Horticulture's contribution to the agricultural GDP and its role in employment generation and poverty alleviation underscores its importance in the socio-economic fabric of the region. The study also emphasizes the need for strategic interventions to address the constraints faced by horticultural entrepreneurs, such as high labour costs and the need for better plant protection measures, to enhance productivity and profitability further. Overall, the research underscores the potential of hortipreneurship as a sustainable and economically viable enterprise that can significantly contribute to the prosperity of the Jammu division and beyond, provided that challenges are effectively managed and resources are optimally utilized.

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