



Economics of Pea Based Cropping System in District Shaheed Bhagat Singh Nagar in Punjab

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ABSTRACT

A study was conducted in the district Shaheed Bhagat Singh Nagar to evaluate the economic viability of pea based cropping system being followed by the farmers in the area on a large scale. Sample consisted of randomly selected 25 farmers who were following pea based cropping system viz, Paddy-Pea-Wheat, Maize-Pea-Wheat and Bajra (Fodder)-Pea-Wheat. The results showed that highest pea equivalent yield and net income was recorded in pea-wheat-paddy cropping system followed by maize-pea-wheat whereas, lowest pea equivalent yield and net income was obtained where bajra crop was included for fodder production by replacing paddy and maize grain crops. Cultivation of paddy, pea and wheat crops in system led to highest B:C (4.75) followed by maize (4.34) and bajra (fodder) (4.22). From the results, it can be concluded that paddy-pea-wheat cropping system was more economically viable as compared to maize-pea-wheat and bajra (fodder)-pea-wheat cropping systems.

Key Words : Pea, Cropping system, Pea equivalent yield, Net income, B:C

INTRODUCTION

Rice, wheat and maize are the most important cereal crops, contributing more digestible energy and protein in the human diet. At the same time, pea is one of the most important leguminous vegetable crop grown during winter season for local consumption and export purpose. In Shaheed Bhagat Singh Nagar district, major crops cultivated by farmers include pea, wheat, paddy, maize and sugarcane. Pea crop is sown just after harvesting of paddy crop in the months of September to October. Therefore, farmers of the area always prefer short duration varieties of paddy which can be harvested by September 1 to 15th so that they can sow succeeding crop at the earliest. It is worth to mention that during the year 2018-19, the selling rate of pea green pods was observed to be Rs 60-65/kg in the retail market during the first week of November, whereas later on it decreased gradually to Rs 40-45/kg, Rs 30/kg, Rs 18-20/kg and Rs 12-15/kg at weekly interval. The study revealed that majority of farmers from the district cultivate pea between 25th to 30th September which was more profitable time

interval for sowing. So, enhancement in the gross and net returns by the planting of pea crop during 25th to 30th September window period improves the B:C which ultimately makes it economically viable and optimum relative to early and late planting (Brar *et al*, 2018).

Therefore, an effort was made to study the profitability of pea based cropping systems followed by the large numbers in the district. In the paddy/maize/bajra (fodder)-pea-wheat intensive cropping system, sowing time plays an important role in terms of crop yield and profitability. Triple cropping system of soiling crops production in SBS Nagar, crops such as paddy, maize and bajra are cultivated from May to September, pea cultivated from September to December and wheat cultivated from November to April. Therefore, selection of suitable cropping system to harvest the synergism of efficient utilization of resource and to increase overall productivity was reported to be essential (Gill and Ahlawat, 2006). It has been argued that the farmers be advised by the agricultural extension experts to adopt green pea cultivation for improving

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Table 1. Pea equivalent yield, selling rate, gross income, expenditure, net income and B: C ratio of pea based cropping system.

Sr. No.	Name of cropping system	Pea equivalent yield (q/ha)	Average selling rate (Rs/kg)	Gross income (Rs/ha)	Gross expenditure (Rs/ha)	Net income (Rs/ha)	B:C ratio
1.	Paddy-Pea-Wheat	162	20	324000	89500	234500	4.75
2.	Maize-Pea-Wheat	148	20	296000	81500	214500	4.34
3.	Bajra (Fodder)-Pea-Wheat	139	20	278000	69500	208500	4.22

the efficiency of the farms through increased income per unit of land. Moreover, it will provide impetus to the diversification program of the state government and improve the soil health. Thus, the farmers should have to be motivated to diversify to more remunerative cropping patterns like vegetable cultivation instead of the traditional, less profitable ones (Singla *et al*, 2006). The diversification of crops is need of the hour to restore the degraded natural resource base of the state caused by monoculture of cereal crops. The profitability of the crop/enterprise is the guiding force for resource allocation decisions of the farmers, which apart from production efficiency, depends upon the prices received by the producers in terms of consumer's rupee (Sidhu *et al*, 2011).

MATERIALS AND METHODS

The study was carried out in the district SBS Nagar during 2018-19. Sample consisted of 25 randomly selected pea growers for the collection of basic information on a questionnaire. The information was collected pertaining to name and address of farmer, cropping system followed, area sown, crop, variety, sowing time, seed rate, planting method, number of irrigations, approved herbicide, fertilizer and pesticide used, yield obtained and selling price. Other parameters like pea equivalent yield, gross incomes, net incomes and (benefit to cost ratio) B:C ratio were calculated from the data collected.

RESULTS AND DISCUSSION

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The paddy-pea-wheat cropping system recorded the highest pea equivalent yield (162 q/ha) followed by maize-pea-wheat cropping system (148 q/ha) (Table 1). The pea equivalent yield was recorded lowest in the bajra (fodder)-pea-wheat cropping system (139 q/ha) where bajra crop was included for fodder production by replacing paddy and maize grain crops. During the season, average selling rate of pea was Rs. 20/kg in the local market. Considering the economics, pea-wheat-paddy system was found to be best with highest net and gross income (Rs. 2,34,500 and 3,24,000/ha) (Table 1) followed by maize-pea-wheat cropping system (Rs. 2,14,500 and 2,96,000/ha). Maximum cost of cultivation (Rs. 89,500/ha) was recorded under pea-wheat-paddy system while minimum in bajra (fodder)-pea-wheat. Further, economics of different pea based cropping system was analyzed on the basis of prevailing market price. The highest net income (Rs. 2,34,500/ha) and B:C (4.75) were observed in paddy-pea-wheat cropping system followed by maize-pea-wheat cropping system (Rs. 2,14,500/ha and 4.34, respectively). The varied income obtained from different cropping systems was due to day to day changes in market price. Hence, it was concluded that paddy-pea-wheat cropping system was more profitable than other two cropping systems. The results were in consonance with Dhaliwal and Sandhu (2015). The study highlighted

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the advantages in total system productivity and monetary income of crop intensification with the inclusion of a pea crop between successive rice crops instead of a fallow period. Reckling *et al* (2016) also reported that a cropping system with legumes had higher or equivalent gross margins. Moreover, by including a legume crop soil fertility can be maintained for a longer time.

CONCLUSION

The paddy-pea-wheat cropping system resulted in highest pea equivalent yield, net income and higher B:C than other two cropping systems. So it can be concluded that paddy-pea-wheat cropping system was more economically viable as compared to maize-pea-wheat and bajra (fodder)- pea-wheat cropping system in district SBS Nagar.

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