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Estimation of net return from wheat crop in District Prayagraj, UP, India

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Abstract

This research was aimed to determine the net returns of wheat crop in District Prayagraj of during the year 2019. The cropped area of sampled respondents was 152 acres each in Rabi season. Wheat was being grown on 87% of the cropped area during Rabi season. From a total cost of 4104 rupees per acre for wheat crops, respectively, with the exception of 1% for wheat. The total gross returns of wheat were 8613 rupees, respectively. The net return is the subtraction of total cost per acre from the gross returns per acre. So the net return wheat were 4509 rupees per acre, respectively. The study as a whole shows that wheat gives more net return than in the study area.

Keywords: Estimation, net return, Prayagraj

Introduction

Agriculture is the backbone of our economic system. Majority of the population directly or indirectly depends on this sector. It contributes more than 24% to Gross Domestic Product and employs around 48.4% of total labor force. It nearly contributes 66% of our export earnings. It contributes to growth as provider of raw materials and as a market for industrial products. The study was conducted in District Prayagraj of during the year 2019. Majority of people of this area depend upon agriculture and per acre yield of crops is low as compared to other parts. Wheat is the major crop of the research area. The cash crops are District Prayagraj include wheat, rice, maize, Arhar and Chana.

On the basis of net return, the net income of two crops or more crops can be compared. This helps the farmers to decide which crop gives them more per acre net income. Net returns are calculated to know per acre gross return and cost of the crops. Such analysis to assess the net income from crops, use of inputs, cost of production, economic position of farmers and the future of agriculture to help the policy makers to recommend the appropriate technologies for the enhancement of agricultural production.

Net-return is the subtraction of total cost per acre from the gross returns per acre. Cost is the major component of net return. It is determined by calculating expenses on land preparation, purchase of seed and its application, farm yard manure, chemical fertilizer, pesticides, irrigation water, hoeing, weeding, harvesting, heaping of bales, threshing, empty bags, transportation and storage. The technologies that directly affect the crop production are types of seeds, chemical fertilizer, farmyard manure, irrigation water and chemical to control weeds and pests and machinery to cultivate, harvest and thresh crops. But past experience shows that despite the use of these inputs, net return of crops is still low. This is found because many of the farmers especially from small farm community are not using these inputs. Prices of these inputs were reported high. Farmers do not have access with extension services. They have low socioeconomic status and education. Land is fragmented and unirrigated. Sometimes required irrigation water is not available and they have also no access to credit to purchase the required inputs for the crops. In the past, several studies have been undertaken elsewhere to underscore the net returns of various crops. In these studies efforts have been made to determine the cost of production of crops, marketing costs, marketing margins at various levels, net returns to producers and their marketing problems. In general, most of the studies reported that the yield and gross return were higher for small farmers but due to higher cost of production, was lower for small farmers. Some studies reported that higher productivity could be achieved with the use of modern technology.

Some researcher suggested that high cost of inputs and non-availability of good quality seeds and fertilizers in the market are the main factors for low farm income. Good quality seed and

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fertilizers are vital for increasing crop production and per acre yield. David pointed out that the low prices of rice are due to the increase in world rice production and substitution of wheat for rice. Majid analyzed that delayed planting and poor crop establishment is responsible for low wheat yield. Muhammad examined that profitability of cereal production could be increased through price policy change and substituting machinery for labour. The main objectives of this research were to estimate cost, production and net returns on per acre basis of main crops and also to find the problems due to which the per acre yield in the research area is low as compared at national and provincial level. The results of the study also suggested the recommendations to improve agricultural production in the research area.

Materials and Methods

The study was conducted in District Prayagraj of during the year 2019. This study was carried out in three villages of District Prayagraj namely Karchhana, mohabbatganj and handia. A total number of 75 respondents were randomly selected and interviewed for this purpose. Twenty five respondents were interviewed from each village. An interview schedule was used as research instruments for the collection of primary data. The data were collected directly from the farmers through face-to-face interviews. For the estimation of production, cost and revenue, the following simultaneous equations were used. These models are important for the estimation of total output, total cost and net revenue of Wheat crops in District Prayagraj.

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, \dots)$$

$$TC = f(Y)$$

$$NR = f(P, TC, Y)$$

X_i = Input used such as land rent and expenditure on seed, FYM, chemical fertiliser, irrigation, harvesting, threshing, sowing, ploughing, weeding/hoeing, packing and transportation to market.

TC = The cost of production of each crop was estimated first by simple method that is by adding the above-mentioned cost components together.

NR = Net revenue the net return per acre for each crop was estimated by subtracted average cost per acre from gross returns per acre:

$$P = \text{Output Price.}$$

Results and Discussion

Size of holding: The total cropped area of sampled respondents was 152 acres each during Rabi season. Wheat was being grown on 87% of the cropped area.

Age of sampled respondents: The age of sampled respondents are more or less equally distributed into various age groups. The largest number (29%) were reported in the age group 31-40 years followed by 27, 23 and 21% belonging to age groups 51-69 years 41-50 years and 20-30 years, respectively.

Educational level of sampled respondents: Sampled respondents of 36% were illiterates. Among literate a large number (24%) were having education up to matric level. The other notable education reported by sampled respondents was FA (15%), primary (13%), middle (7%) and MA (5%).

Tenurial status of research area: The majority (60%) of the

sampled respondents of the research area were owners. The remaining 35% and 5% were tenants and owner-cum-tenant, respectively. 64% of the sampled respondents were literates while the remaining 36% were illiterates.

Area under main crops: The total cropped area of sampled respondents was 270 acres each during Rabi and Kharif season. Wheat was being grown on 87% of the cultivable area where as in Kharif, because of more yield and cash, rice was reported the major crop and sown on 75% area and maize was shown on 9% area.

Cost of production of Wheat crops: shows that from a total of 4104 rupees per acre, 34% of the total cost of production for Wheat was spent on land rent followed by 24, 12, 10, 8, 6, 3, 2 and 1% spent on labour cost, land preparation, nursery cost, urea fertilizer, threshing, irrigation, marketing and farm yard manure, respectively (table 1).

Table 1: Production cost and contribution of each cost components.

Particulars	Wheat	
	Cost/acre (Rs.)	% age
Land rent	974	24
Land preparation	397	10
Farmyard manure	424	10
Urea	369	9
DAP	390	10
Seed cost	477	11
Nursery cost	—	—
Labor cost	499	12
Irrigation cost	38	1
Threshing cost	487	12
Marketing cost	49	1
Total	4104	100

Table 2: Gross returns of Wheat main product and by-product

Particulars	Wheat		
	Qty/Acre	GR/Acre	%age
Production main Product	782(kg)	7038	82
By product	21 (Minds)	1575	18
Total	-	8613	100

Qty=Quantity, GR=Gross Returns.

Table 3: Net returns of main crops on per acre basis

Particulars	Wheat (Rs)
Gross return	8613
Total expenses	4104
Net Return	4509

For wheat crop, from a total of 4104 rupees per acre, 24% of the total cost of production was spent on land rent followed by 12% each on labour cost and threshing, 11% on seed, 10% each on land preparation, FYM and DAP, 9% on urea fertilizer and 1% each on irrigation and threshing, DAP, seed, irrigation, land rent and marketing, respectively. For wheat crop, from a total of 4104 rupee per acre, 24% of the total cost of production was spent on land rent followed by 12% each on labour cost and threshing, 11% on seed, 10% each on land preparation, FYM and DAP, 9% on urea fertilizer and 1% each on irrigation and threshing.

Gross and net returns of wheat crop: Gross return is the sum of all receipts from main product and by-product produced per acre. While net return is the subtraction of the

total cost per acre from gross return per acre.

In case of wheat, the average main product yield of the sample respondents was 782 kg per acre, which accounted 82% of the total gross returns. The average price of main product in the market was Rs.450/Mnds. The average return of main product was found 7038 rupees per acre. The average yield of by-product was 21 Mnds per acre, which accounted for 18% per acre of the total gross returns. The average price of by-product was found Rs.75/Mnds. Thus the average returns of by-product were 1575 rupees per acre. Thus the total gross return was 8613 rupees per acre (table 2).

(Table 3) shows that the total gross returns of wheat were 8613 rupees per acre. The total expenses of wheat were 4104 rupees per acre. So, the net returns of wheat were 4509 rupees per acre. The table as whole shows that rice gives more net return than wheat. This is because the study area is more favorable for rice than wheat.

Conclusions

The returns from rice were higher than the returns from wheat. This is because of the availability of sufficient irrigation water from river Swat. However, they are lower than the net income from wheat crop of other areas. Low returns are mainly due to high cost of production, use of unskilled labour and defects in marketing of the produce. Production of wheat can further be increased through the installation of tube wells for irrigation. With the help of government or credit from any financial institution, tube wells can be installed on low cost as water level in the study area was reported high due to the location of sampled villages near river Swat. To benefit the farming community, the government should revise and fix the support prices of important crops every year. The prices are generally announced before the sowing time. The farmers then plan allocation of area, input and other resources for different crops. Support prices thus contribute to income stability of the farmers.

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