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Estimation of the cost and returns of potato cultivation in Farrukhabad district of Uttar Pradesh

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Abstract

The study was conducted to precisely estimate the costs and returns associated with cultivating potatoes in the Farrukhabad district of Uttar Pradesh. The primary aim of the study was to determine the high value and utmost importance of potato cultivation, as well as the substantial income and employment opportunities it generates through production and sale. To evaluate the expenses and income generated through potato cultivation, 120 respondents were carefully handpicked using a purposive cum random sampling technique from three blocks of the Farrukhabad district. From each block, 40 respondents were meticulously selected to ensure the most accurate results. The data was collected through a comprehensive and well-planned program, including personal interviews with the farmers. The results were presented through detailed and thorough tabular and functional analyses. The analysis uncovered that there is a direct correlation between the size of the farm and the cost of cultivating crops per hectare. The data also showed that the revenue earned from farming has a substantial negative correlation with the size of the holding. Further investigation revealed that the use of manures, fertilizers, and irrigation was found to be statistically significant across most farm sizes. Based on the findings, it can be inferred that growing potatoes is the most suitable crop for farmers in the Farrukhabad district.

Keywords: Cropping intensity, cost and return, CACP, benefit cost ratio

Introduction

Potato (*Solanum tuberosum* L.) is the most commonly cultivated tuber crop and one of the most important food crops in the world (Singh, 2019) [6]. It is an important vegetable that belongs to the family Solanaceae and the genus Solanum, with a basic set of 12 chromosomes ($x = 12$) (Tefera, 2019) [8]. It has emerged as one of the leading food crops in the world. The Solanum family includes tomato, tobacco, pepper, eggplant, petunia, and some others. The potato (*Solanum tuberosum* L.) is one of the most widely produced and consumed tuberous crops in the world. Similarly, it is the most consumed food crop world-wide, next to wheat and rice (Sapkota *et al.*, 2019; Mukul, 2021) [5, 4].

The potato crop is believed to have originated in Peru, South America and was introduced to other parts of the world through war expeditions, shipment, and transportation. Today, there are more than 5000 varieties of potatoes present in different parts of the world, with the majority of them mostly confined to South America. Potatoes are popular in Pakistan and other parts of the world due to their nutrient capacity, potential for diverse uses in both raw and processed form, and easy availability for low-income consumers. They are rich in water, carbohydrates, vitamins, minerals, proteins, and fats, accounting for 390 KJ per 100 g of baked potato (Singh *et al.*, 2019) [6].

The Central Potato Research Institute (CPRI) Shimla confirms that a 100g serving of potatoes contains 74.60g water, 22.60g carbohydrates, 1.60g protein, 0.40g fiber, 0.10g fat, and 0.60g minerals. These are the precise nutritional values of potatoes, and they cannot be disputed.

Throughout India, the area of potatoes in 2019–20 was about 2.05 million hectares and the production was about 48.56 million metric tonnes with productivity of 23688 kilograms per hectare, but in 2020–21, India produced 54.23 million metric tonnes from a 2.25 m hectare area with a total productivity of 24102 kilograms per hectare.

In Uttar Pradesh 2019–20, the area is about 0.057 million hectares, and the production is about 1.3 million metric tonnes, with a productivity of 228.07 quintals per ha; however, in 2020–21, the area is about 0.062 million hectares, and the production is about 1.58 million tonnes, with a productivity of 254.84 quintals per ha. (Kumar *et al.*, 2022) ^[1].

It has been revealed that, according to FAO, potato is consumed by more than one billion people the world over. It is a high-quality vegetable cum food crop and is used in preparing more than 100 types of recipes in India (Kumar *et al.*, 2021) ^[2]. Popular Indian recipes like Samosas and Alu Parathas are prepared from potatoes. The protein of potato has a higher biological value than proteins of cereals and even better than that of milk. The biological value of a mixture of egg and potato is higher than the egg alone. Hence, potatoes can supplement meat and milk products to improve their taste, lowering energy intake and reducing food costs (Kushwaha *et al.*, 2019) ^[3]. Nutritional point of view, potato is a wholesome food and deserves to be promoted as a potential high-quality vegetable cum food crop in the country.

Keeping in view the importance of the crop supported by the above-mentioned facts, the present study, entitled “Estimate the cost and return of potato cultivation in Farrukhabad District of Uttar Pradesh,” was conducted with the following specific objectives:

1. To analyse the different types of costs involved in the cultivation of potatoes.
2. To measure the farm profits received from the cultivation of potatoes.

Materials and Methods

Using personally conducted interviews and pre-tested, planned schedules, the major data was gathered in 2022–2023 through survey methods. A total of 120 respondents were randomly selected to collect primary data and information for the present study. Three major potato growing blocks namely Mohammadabad, Kamalganj, and Barhpur were selected for this study. To choose the respondents, block, and district, a multistage stratified, purposive cum random sampling approach was taken. To avoid interfering with the investigator's operating convenience, the district of Farrukhabad was specifically chosen. There was a list of every block included in the Farrukhabad District. Then, From the three chosen blocks, a different list of potato growers was created. For every category in this list, a proportionate random selection approach was used to choose 120 respondents as a sample.

Cropping Intensity

The cropping intensity index measures how often a crop is planted per year in an agricultural area compared to a base year. It's calculated by dividing the total cropped area by the net sown area and multiplying it by 100.

Measures of cost concepts

The cost concept approach, consisting of Cost A₁, A₂, B₁, B₂, C₁, C₂, and Cost C₃, is commonly used in India to evaluate crop profitability in production.

Cost A₁: This cost includes actual expenditure incurred in cash and kind.

1. Value of hired human labour and machinery labour.
2. Value of seed (both forms produced and purchased).
3. Value of manure (owned and purchased).
4. Value of insecticides, pesticides and chemical fertilizer
5. Depreciation on implements, farm machinery and farm

buildings.

6. Irrigation charges.
7. Land revenue, and other taxes.
8. Interest on working capital.
9. Miscellaneous expenses.

Cost A₂: Cost A₁ + rent paid for leased in land.

Cost B₁: Cost A₂ + interest on value of owned fixed capital assets (including land)

Cost B₂: Cost B₁ + rental value of owned land.

Cost C₁: Cost B₁ + imputed value of family labour.

Cost C₂: Cost B₂ + imputed value of family labour.

Cost C₃: Cost C₂ + 10% of C₂ (managerial cost).

Measures of farm profit

Gross Income: Yield in quintal* Price per tonne

Net Income: Gross Income - Cost C

Farm Business Income

Gross Income- Cost A₂ or Net Income + imputed value of family labour.

Family labour income

Gross Income – Cost B

Farm investment income

Net Income + Rental value of owned land+ Interest on fixed capital

Benefit-cost ratio

Cost C/Gross Income

Results and Discussion

The obtained result of present research are describe under the following headings:

Average holding size on sample farms:

According to the Table 1. Discusses the specifics of the land holding areas under the various size categories of the sample farms. The average land holding size of Marginal farmer, Small farmer and Medium farmer farms was determined to be 0.64, 1.25, and 2.58 hectares, respectively, with an average land holding size of 1.49 hectares overall.

Distribution of cultivated land owned by different size groups of sample farms revealed that 38.52 percent of cultivated land was owned by 73 Marginal farmer farms. Whereas 36.00 and 25.47 percent of this area were owned by 35 and 12 of Small and Medium size group of farms. The details cropping are given in the table 1.

Cropping pattern

According to the table 2. The cropping pattern is the division of land among various crops over a specific time frame, typically a year. It displays the order and configuration of the crops that farmers in a specific area cultivate. The cropping patterns used by the sample farms are shown in Table 2. The table shows that, of the total cropped area on the sample farm, potatoes covered the largest area on average, accounting for 31.58 percent. This was followed by maize (24.46 percent), paddy (13.00 percent), Moong (6.50 percent), urd (6.50 percent), bajra (6.50 percent), Wheat (5.57 Percent) Jowar (2.17 percent), Chari (1.55 Percent) Mustard (1.24 percent), and Vegetable (0.93 percent), Potatoes are a valuable crop to farmers, and the sample farmers have made sure to allot a significant portion of their land to their cultivation. After cultivating two major food grains, paddy and

wheat, they have devoted a large area to potato farming. The kharif season saw the highest gross cultivated area, accounting for 46.13% of all farming, followed by the rabi season at 38.39%, and the zaid season at 15.48%. It is clear from table 2

that Maize cultivation accounted for a whopping 24.46% of the total cropped area during the kharif season. This shows the importance and potential of potato farming, and the many benefits it can bring to farmers.

Table 1: sample farms, total cultivated area and average size of holding on different size group of farms.

S. No.	Size group of farms	No. of sample Farms	Total cultivated area (ha)	Average size of holding (ha)
1	Marginal	73	46.80 (38.52)	0.64
2	Small	35	43.75 (36.00)	1.25
3	Medium	12	30.95 (25.47)	2.58
	Total	120	121.50 (100.00)	1.49

Table 2: Cropping pattern under different size group of sample farms (ha.)

S. No.	Crop grown under different Season	Average size of sample farms			
		Marginal	Small	Medium	Overall Average
A.	Kharif	0.64 (43.83)	1.25 (44.48)	2.58 (47.42)	1.49 (46.13)
1.	Paddy	0.19 (13.01)	0.17 (6.04)	0.90 (17.34)	0.42 (13.00)
2.	Maize	0.28 (19.18)	0.81 (28.83)	1.27 (24.53)	0.79 (24.46)
3.	Jwar	0.06 (4.11)	0.03 (1.07)	0.13 (2.13)	0.07 (2.17)
4.	Bajra	0.11 (7.53)	0.24 (8.54)	0.28 (6.40)	0.21 (6.50)
B.	Rabi	0.57 (39.04)	1.05 (37.37)	2.12 (38.97)	1.24 (38.39)
1.	Potato	0.48 (32.88)	0.92 (32.74)	1.65 (30.34)	1.02 (31.58)
2.	Mustard	0.01 (.68)	0.02 (.71)	0.1 (1.83)	0.04 (1.24)
3.	Wheat	0.08 (5.48)	0.11 (3.92)	0.37 (6.80)	0.18 (5.57)
C.	Zaid	0.25 (17.12)	0.51 (18.15)	0.74 (13.60)	0.50 (15.48)
1.	Chari	0.02 (1.37)	0.03 (1.07)	0.08 (1.47)	0.05 (1.55)
2.	Moong	0.12 (8.22)	0.2 (7.12)	0.31 (5.70)	0.21 (6.50)
3.	Urd	0.1 (6.85)	0.23 (8.18)	0.30 (5.51)	0.21 (6.50)
4.	Vegetable	0.01 (0.68)	0.05 (1.78)	0.05 (0.92)	0.03 (0.93)
	Grand Total	1.46 (100.00)	2.81 (100.00)	5.44 (100.00)	3.23 (100.00)

(Figures in parentheses indicate the percentage to the total cropped area.)

Cropping intensity

According to Table 3, the average cropping intensity on the sample farms was 221.26 percent. This percentage was highest in Marginal farmer with 228.12 percent, followed by Small

farmer with 224.80 percent, and Medium farmer with 210.85 percent. The size of the farms was inversely related to the cropping intensity.

Table 3: Cropping intensity of different size group of sample farms

S. No.	Size group of farm	No. of Farmers	Net Cultivated Area (ha).	Gross Cropped Area (ha)	Cropping Intensity (%)
1.	Marginal	73	0.64	1.46	228.12
2.	Small	35	1.25	2.81	224.80
3.	Medium	12	2.58	5.44	210.85
	Overall Average	120	1.29	2.70	221.26*

*Indicate overall average of cropping intensity

Cost and return of potato production-

a.) This section provides a summary of the costs and returns of sample farms. The total cost estimate is based on six cost concepts (Cost A₁/A₂, cost B₁, cost B₂, cost C₁, C₂, and cost C₃). Additionally, the costs have been worked out for the estimation of cost. Various measures of farm profits like net income, family labor income, farm investment income, farm business income, and input-output ratio for potato crops have also been calculated. The costs and returns generated by potato crops are displayed in Tables 4 and 5.

b.) **Per hectare costs of cultivation of Potato crop:** According to the Table 4. shows the costs per hectare for various inputs in Potato production. The table shows that the highest costs of cultivation were on Medium farmer farms (Rs.94587.58), followed by Small farmer farms (Rs.86183.17) and Marginal farmers farms (Rs.80399.13). The average costs of cultivation across all sample farms were observed to be (Rs.87056.62). The cost of cultivating agricultural land includes various expenses such as manure and fertilizers,

seeds, rental value of owned land, human labor, machinery charges, irrigation charges, and plant protection. Among these, the major components of cost are manure and fertilizers, accounting for 23.90% of the total cost, followed by seeds, making up 21.23%. The rental value of owned land contributes 13.78% to the cost of cultivation, while machinery charges and human labour account for 9.39% and 8.53%, respectively. Irrigation charges and plant protection are relatively smaller components, accounting for 7.89% and 2.59% of the total cost, respectively.

Table 4. Per hectare costs of cultivation of Potato on different size group of sample farms (value in Rs.)

b.) Per hectare costs and income from the production of Potato crop

According to the data presented in Table 5, the average costs for A₁/A₂, B₁, B₂, C₁, C₂, and C₃ are as follows: Rs. for A₁/A₂, Rs. 62510.10 for B₁, Rs. 74510.10 for B₂, Rs. 75595.19 for C₁, Rs. 78057.30 for C₂, and Rs. 87056.62 for C₃. This information can

be used for analyzing the costs associated with these items and making informed decisions based on the data.

The following is a report on the average gross and net income for different types of farms. The gross income for all farms was recorded at Rs. 191764.58, while the net income came to Rs. 104707.95. On Medium farmers farms, the gross income was the highest, recorded at Rs. 212606.25, followed by Small farmers farms at Rs. 191406.25. Marginal farmers farms had the lowest gross income, which was recorded at Rs. 171281.25.

According to the observations made, the highest net income was on Medium farmers farms, which was Rs. 118018.67. The second-highest net income was on Small farmers farms, which was Rs. 105223.08, and the lowest was on Marginal farmers farms, which was Rs. 90882.12. On average, the family labour income, farm business income, and farm investment income were recorded to be Rs. 116169.38, Rs. 129254.48, and Rs. 125707.29, respectively. Family labor income was the highest on Medium farmers farms, followed by Small farmers and

Marginal farmers farms. Similarly, farm investment income was highest on Medium farmers farms, followed by Small farmers and Marginal farmers farms. Finally, farm business income was highest on Medium farmers farms, followed by Small farmers and Marginal farmers farms. In general, the estimated cost of production per quintal and yield per hectare were Rs. 288.86 per quintal and 302.08 quintal, respectively.

On average, the input-output ratios for costs C_3 , C_2 , C_1 , B_2 , B_1 , and A_2/A_1 were recorded as 1:3.07, 1:2.57, 1:2.54, 1:2.46, 1:2.41, and 1:2.20, respectively.

The input-output ratio based on cost A_1 was found to be highest on Small farmers farms (1:3.12), followed by Marginal farmers (1:3.06) and Medium farmers (1:3.03), respectively. This suggests that the costs of cultivation increase with an increase in farm size. However, the net return per hectare showed a negative trend with farm size. This is because there was less increase in yield compared to the increased input factors as farm size increased.

Table 5: Per hectare costs and income measures from potato production on various costs concept (Rs.)

S. No.	Particulars	Size group of farms			
		Marginal	Small	Medium	Overall average
1.	Human Labour	6745.05 (8.39)	7245.78 (8.41)	8287.74 (8.76)	7426.19 (8.53)
a.	Family Labour	4176.26 (5.19)	3876.56 (4.50)	2588.76 (2.74)	3547.19 (4.07)
b.	Hired labour	2568.79 (3.20)	3369.22 (3.91)	5698.98 (6.03)	3878.99 (4.46)
2.	Machinery Charges	7276.65 (9.05)	8276.76 (9.60)	8988.34 (9.50)	8180.58 (9.39)
3.	Seeds	17300.00 (21.52)	18578.85 (21.56)	19566.65 (20.69)	18481.84 (21.23)
4.	Manure and fertilizer	19000.34 (23.63)	20008.87 (23.22)	23434.11 (24.78)	20814.44 (23.90)
5.	Irrigation	5936.13 (7.38)	6856.88 (7.96)	7823.34 (8.27)	6872.11 (7.89)
6.	Plant Protection	2023.34 (2.52)	2276.86 (2.64)	2467.45 (2.61)	2255.88 (2.59)
7.	Total working capital	58281.51 (72.49)	63244 (73.88)	70567.63 (74.61)	64031.04 (73.55)
8.	Interest on working capital @ 4%	1822.76 (2.27)	2021.56 (2.35)	2234.43 (2.26)	2026.25 (2.33)
9.	Rental value on land	12000.00 (14.93)	12000.00 (13.92)	12000.00 (12.69)	12000.00 (13.78)
10.	Interest on fixed capital	985.85 (1.12)	1082.78 (1.26)	1186.65 (1.25)	1085.09 (1.24)
11.	Sub total	73090.12 (90.91)	78348.34 (90.91)	85988.71 (90.91)	79142.39 (90.91)
12.	Managerial cost @10% of sub-total	7309.01 (9.09)	7834.83 (9.09)	8598.87 (9.09)	7914.23 (9.09)
	Grand total	80399.13 (100.00)	86183.17 (100.00)	94587.58 (100.00)	87056.62 (100.00)

S. No.	Particular	Size group of farms			Overall average
		Marginal	Small	Medium	
1.	Cost A_1/A_2	55928.01	61389.00	70213.30	62510.10
2.	Cost B_1	67928.01	73389.00	82213.30	74510.10
3.	Cost B_2	68913.86	74471.78	83399.95	75595.19
4.	Cost C_1	72104.27	77265.56	84802.06	78057.30
5.	Cost C_2 =Cost C_2^*	73090.12	78348.34	85988.71	79142.39
6.	Cost C_3	80399.13	86183.17	94587.58	87056.62
7.	Gross Income	171281.25	191406.25	212606.25	191764.58
8.	Net Income	90882.12	105223.08	118018.67	104707.95
9.	Family labour Income	102367.39	116934.47	129206.30	116169.38
10.	Farm business Income	115353.24	130017.25	142392.95	129254.48
11.	Farm Investment Income	111176.98	126140.69	139804.19	125707.29
12.	Yield (q/ha)	281.25	306.25	318.75	302.08
13.	Cost of production (Rs/ql.)	285.86	281.41	296.75	288.00
14.	Input Output Ratio				
A	On the basis of Cost A_1/A_2	1: 3.06	1: 3.12	1: 3.03	1: 3.07
B	On the basis of cost B_1	1: 2.52	1: 2.61	1: 2.59	1: 2.57
C	On the basis of cost B_2	1: 2.49	1: 2.57	1: 2.55	1: 2.54
D	On the basis of cost C_1	1: 2.38	1: 2.48	1: 2.51	1: 2.46
E	On the basis of cost C_2	1: 2.34	1: 2.44	1: 2.47	1: 2.41
F	On the basis of cost C_3	1: 2.13	1: 2.22	1: 2.25	1: 2.20
15	B:C ratio	1: 1.13	1: 1.22	1: 1.25	1: 1.20

*Cost C_2

Table 6. Disposal pattern of Potato

Disposal pattern of potato at farm level is shown in table 6. The highest quantity of potato produced per farm family was in the

lowest Marginal farmers in areas. This might be due to higher area and yield in Medium farmers table. Average potato production per farm was 302.08 qtl. About 0.98% of the

potatoes were used for family consumption by the potato farmers and 0.34% was gifted to relatives or others. A major portion (48.52%) of the potatoes was sold during the harvesting period. Another 12.09% of the potatoes was stored in cold

storage as seed for planting in the next season. The remaining 38.07% was stored as table potato and sold later when prices became high.

Table 6: Disposal pattern of potato at farm level in the study areas (qtl.)

S. No.	Particulars	Marginal	Small	Medium	Overall average
1.	Family consumption	2.92 (1.04)	2.98 (0.97)	3.02 (0.95)	2.97 (0.98)
2.	Gift to Others	0.98 (0.35)	1.02 (0.34)	1.05 (0.33)	1.01 (0.34)
3.	Used as Seed	36.00 (12.80)	36.50 (11.91)	37.02 (11.61)	36.50 (12.09)
4.	Stored for sale	108.76 (38.67)	110.98 (36.24)	125.31 (39.31)	115.01 (38.07)
5.	Sale	132.58 (47.14)	154.77 (50.54)	152.35 (47.80)	146.56 (48.52)
Total	Production (per farm)	281.25 (100.00)	306.25 (100.00)	318.75 (100.00)	302.08 (100.00)

Note: Figures in the parentheses indicate percent of total production

About 21.41% of the potatoes was traditionally stored in house and the remaining 78.59% was stored in cold storage (table 7) A big variation of potatoes was observed. In Marginal farmers, 21.66% of potato was stored traditionally but in Small farmers this amount was only 22.21%. Most of the potato farms and cold

storages were concentrated in Medium farmers in Farrukhabad district. Most of the potatoes were sold at farm gate to wholesaler 47.63% and big trader 39.32%. A small quantity was sold to petty traders 9.78%.

Table 7: Quantity of potato stored and sold at farm level in the study areas (Qtl.)

S. No.	Particulars	Marginal	Small	Medium	Overall average
A.	Quantity stored (as table potato)	108.76 (100.00)	110.98 (100.00)	125.31 (100.00)	115.01 (100.00)
s1.	Home storage	23.56 (21.66)	24.65 (22.21)	25.67 (20.49)	24.62 (21.41)
2.	Cold storage	85.20 (78.34)	86.33 (77.79)	99.64 (79.51)	90.39 (78.59)
B.	Quantity sold to	132.58 (100.00)	154.77 (100.00)	152.35 (100.00)	146.57 (100.00)
1.	Big trader	50.09 (37.78)	60.91 (39.36)	61.89 (40.62)	57.63 (39.32)
2.	Wholesaler	70.89 (53.47)	67.56 (43.65)	70.99 (46.60)	69.81 (47.63)
3.	Petty trader	8.79 (6.63)	18.79 (12.14)	15.43 (10.13)	14.33 (9.78)
4.	Retailer	2.81 (2.12)	7.51 (4.85)	4.04 (2.65)	4.78 (3.27)

Note: Figures in the parentheses indicate percent of total quantity

Table 8. Postharvest Losses of Traditionally Stored Potatoes Post- harvest loss at farm level

According to the table 8. Potatoes are semi perishable commodity, which contain more than 70% of moisture. Thus, they undergo a lot of physical, chemical and physiological changes during the whole process of harvesting, curing, storage, handling, transportation and marketing, resulting in a deterioration of quality and loss in weight. The post-harvest

losses of potato at different stages of post-harvest operations at farm level in the study areas are shown in table 8. Average harvesting loss of all areas was found to be 3.61% of total production. Average harvesting loss comprised of insect damage (0.65%), rotten loss (0.80%), cutting loss (0.77%), potato remained under soil during harvesting (0.73%) and other losses (0.68%), green potato etc.

Table 8: Average loss of potato at farmer's level at different post harvest operations in the study area (Qtl.)

S. No.	Particulars	Marginal	Small	Medium	Overall average
A.	Production	281.25 (100.00)	306.25 (100.00)	318.75 (100.00)	302.08 (100.00)
1.	Harvesting loss	9.97 (3.55)	10.88 (3.55)	11.89 (3.73)	10.91 (3.61)
a.	Insect Damage	1.84 (0.66)	1.95 (0.64)	2.09 (0.66)	1.96 (0.65)
b.	Rotten loss	2.19 (0.78)	2.34 (0.77)	2.67 (0.84)	2.40 (0.80)
c.	Cutting loss	2.21 (0.79)	2.28 (0.75)	2.46 (0.77)	2.32 (0.77)
d.	Remain under loss	2.08 (0.74)	2.18 (0.71)	2.31 (0.73)	2.19 (0.73)
e.	Other loss	1.92 (0.68)	2.09 (0.68)	2.19 (0.69)	2.06 (0.68)
2.	Curing loss	1.98 (0.70)	2.05 (0.67)	2.08 (0.65)	2.03 (0.67)
3.	Sorting loss	1.65 (0.59)	1.86 (0.61)	1.88 (0.59)	1.79 (0.60)
B.	Pre- storage losses (1+2+3)	23.87 (8.49)	25.67 (8.38)	27.60 (8.66)	25.71 (8.51)
4.	Home storage loss	21.78 (7.74)	23.28 (7.60)	23.09 (7.24)	22.72 (7.52)
C.	Total loss (B+4)	45.66 (16.23)	48.95 (15.98)	50.70 (15.90)	48.44 (16.03)

(Figures in the parentheses indicate percent of total production)

Conclusion

The study highlights some interesting findings regarding potato crop cultivation. Marginal farms seem to have higher cropping intensity, showing their potential to maximize yield. However, the cropping intensity decreases as farm size increases. Furthermore, the study highlights that potato crops are input-responsive, which is promising for farmers. The cost of

cultivation of potato crops was found to be Rs. 87056.62, which is a crucial piece of information for farmers to plan their budget. The study also revealed that the potato crop can provide significant net income, family labor income, farm business income, and farm investment income, with yields of Rs. 104707.95, 116169.38, 129254.48, and 125707.29, respectively. Disposal pattern of potato at farm level was examined. Average

harvesting loss in all areas was found to be 3.61% Of total production Pre-storage and home storage losses of potatoes were 8.51 and 7.52%, respectively.

References

1. Kumar A, Singh R, Singh PK, Yadav B, Choudhari HPS. Economic aspects of potato cultivation in Sultanpur District of Uttar Pradesh. *Econ Aff.* 2022;67(01):15-18.
2. Kumar H, Pal VK, Verma SC, Rawat VK, Mourya SK. Economics of potato production in Gorakhpur District of Eastern Uttar Pradesh. *Int J Creative Res Thoughts.* 2021;9(5):2320-2882.
3. Kushwaha RR, Kumar P, Singh VK, Supriya, Singh A, Yadav RM. An economic analysis of potato cultivation: A case study in Kannauj District of Uttar Pradesh. *J Pharmacogn Phytochem.* 2019;8(3):4609-4612.
4. Mukul AZA, Parvin MM. Profitability analysis of potato cultivation: A study in Munshiganj District of Bangladesh. *Int J Bus Manag Soc Res.* 2021;11(1):595-601.
5. Sapkota SP, Rokaya PR, Acharya H, Uprety S. An economic analysis of potato production in Achham District of Nepal. *Int J Hortic Agric.* 2019;4(2):1-98.
6. Singh A, Singh R, Ranjana A. Economic management and analysis of potato cultivation: A case study of Agra District, U.P. India. *Int J Curr Microbiol Appl Sci.* 2019;8(2):525-530.
7. Sinha AK. Economics of potato production in Northern Hills of Chhattisgarh. *Econ Aff.* 2019;64(1):1-7.
8. Tefera AG. Analysis of the profitability of potato production: The case of Ejere District, West Shewa Zone of Oromia, Ethiopia. *Int J Novel Res Interdiscip Stud.* 2019;6(2):1-9.