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 7; July 2025; Page No. 563-567

Received: 07-05-2025
Accepted: 10-06-2025

Indexed Journal
Peer Reviewed Journal

Economic aspect of banana cultivation in Lakhimpur (Kheri) district of Uttar Pradesh

[1]Sooraj Kumar, [2]Supriya, [1]Kaushlendra Srivastava, [3]Anurooddha Pratap Singh Yadav, [3]Pushpendra Kumar, [1]Akanksha Chaturvedi, [1]Abhishek Verma and [1]Soumya Ranjan Mohapatra

[1]M.Sc. Student, Department of Agricultural Economics, Acharya Narendra Deva University of Agriculture & Technology, Kumarganj, Ayodhya, Uttar Pradesh, India

[2]Associate Professor, Department of Agricultural Economics, Acharya Narendra Deva University of Agriculture & Technology, Kumarganj, Ayodhya, Uttar Pradesh, India

[4,5]Ph.D. Student, Department of Agricultural Economics, Acharya Narendra Deva University of Agriculture & Technology, Kumarganj, Ayodhya, Uttar Pradesh, India

DOI: https://www.doi.org/10.33545/26180723.2025.v8.i7h.2177

Corresponding Author: Supriya

Abstract

The present study analyzes the economics of farming operations across different farm size categories as marginal, small, and medium based on data from 100 sample farms. Marginal farmers, although owning the largest number of holdings (54%), operated only 27.04% of the total land, while medium farmers, though fewer, controlled 40.61%. Cropping intensity was highest among marginal farmers (260.66%), indicating intensive land use. The cost of cultivation increased with farm size, yet marginal farms exhibited higher cost-efficiency due to greater reliance on family labour and better input use efficiency. Key cost components across all groups included labour, planting material, fertilizers, and irrigation. In terms of returns, marginal farms outperformed others with the highest yield (233.45 quintals), gross income (₹5,13,590), and net return over Cost C_3 (₹3,67,624.29). The cost of production per quintal was lowest for marginal farms (₹625.25), reflecting better economic performance. Input-output ratios and Benefit-Cost ratios confirmed this trend, with marginal farms recording the highest B:C ratio of 1:2.52. Overall, the analysis highlights that marginal and small farms, despite limited resources, are more economically efficient and profitable compared to larger holdings due to intensive management and efficient resource use.

Keywords: Banana cultivation, economic analysis, farm size, marginal farmers

Introduction

Agriculture plays a crucial role in the Indian economy, contributing significantly to GDP, employment, and livelihood. As of recent years, it accounts for about 18% of the GDP and employs nearly 50% of the workforce, making it a cornerstone of rural life. The sector not only ensures food security but also supports various allied industries, such as agro-based manufacturing, food processing, and textiles. Bananas (scientifically known as *Musa*), a member of the *Musaceae* family, are one of the most popular and widely consumed fruits globally. Originating in Southeast Asia, they have been cultivated for thousands of years and have spread to tropical and subtropical regions around the world. Characterized by their sweet taste and soft texture, bananas are rich in essential nutrients, including vitamins C and B6, potassium, and dietary fiber (Abdulrahman *et al.*,2018) [1]. The banana plant is an herbaceous perennial, producing large leaves and a cluster of fruits that grow distinctively. Bananas are typically harvested when green and ripen during transportation, making them a staple in many diets. They play a vital role in agricultural economies, providing livelihoods for millions of farmers and contributing significantly to food security. Beyond their nutritional value, bananas have cultural significance in many societies, often featured in traditional dishes and festivities. Their versatility and ease of cultivation make them a cornerstone of global agriculture. Bananas are rich in carbohydrates, mainly sugar and fiber, providing about 105 calories and quick energy. They are a good source of vitamin C, B6, and potassium, and also contain small amounts of magnesium, manganese, and vitamin A. (Pandian *et al.*, 2018) [10].

The banana's rich nutritional profile makes it a valuable addition to a healthy diet. It is frequently suggested for athletes because of its high carbohydrate levels and its effectiveness in rapidly restoring glycogen. Moreover, the fiber in bananas supports digestion and promotes gut health. Antioxidants such as dopamine and catechins also help combat oxidative stress and inflammation in the body. Banana production and export models in the world show the diversity of countries. The market ranking is Ecuador leads with 6.5 million tons, exporting 5.2 million tons worth US$2.7 billion (30.7% of global exports). Guatemala follows with 3.7 million tons produced and 2.4 million tons exported (10.5%). Colombia exports 2 million tons valued at US$910 million (7.8%). India exports very little just

10,000 tons worth US$33 million.

In India, bananas are one of the most important and widely cultivated fruits, ranking as the world's largest producer. The country accounts for about 25% of global banana production, with major cultivation in states like Maharashtra, Tamil Nadu, Uttar Pradesh, and Gujarat. The diverse climate and soil conditions across India allow for the cultivation of various banana varieties, including the popular Cavendish and local cultivars.

In Uttar Pradesh, banana cultivation has gained prominence as a vital agricultural activity, contributing significantly to the state's economy and farmer livelihoods. The state ranks among India's top banana producers, with favorable climatic conditions and fertile soil, particularly in districts like Gorakhpur, Basti, and Mau. Bananas are primarily grown for both local consumption and export, making them a lucrative cash crop. Farmers benefit from a relatively quick harvest cycle, allowing for multiple cropping seasons per year.

In Lakhimpur Kheri district, banana cultivation plays a significant role in the local economy and agricultural landscape. The region's favorable climate and fertile soil make it ideal for growing bananas, particularly varieties like Cavendish and local cultivars. Farmers in Lakhimpur Kheri increasingly view banana farming as a lucrative alternative to traditional crops, benefiting from quick returns on investment. The district has witnessed a rise in banana production, contributing to both local consumption and export markets. However, challenges such as fluctuating market prices, pest management, and post-harvest losses remain prevalent.

Seeing the above facts due to the present study entitled "Economic Aspect of Banana Cultivation in Lakhimpur (Kheri) District of Uttar Pradesh" assumes special significance and importance and will be carried out with the following specific objectives:

1. To work out the cropping pattern and the cropping intensity of banana cultivars in the study area
2. To estimate the cost of cultivation and various profit measures of banana in the study area.

Materials and Methods

1. Sample design

This examination of cultivation costs and profit measures relied heavily on source data. The population sample was obtained by a multi-stage stratified purposive cum random sampling strategy. The sample procedure has commenced with the purposeful selection of Gonda districts. Firstly, a list of 16 blocks lying under Gonda districts of Uttar Pradesh was prepared. Based on the highest acreage in sugarcane cultivation One blocks were purposively selected from Gonda that is Chhapia.

2. Collection of Data

The primary data was collected through a survey method using personal interviews with a pre-structured schedule. Secondary data was collected from various sources including Zila Vikas Bhawan, Zila Sankhyaki Patrika, the Department of Agriculture at block and district headquarters, journal reports, books, and the internet. A list of all the villages in the selected block was prepared and arranged in ascending order according to area. Five villages from Chhapia block were randomly selected for the study.

3. Selection of Respondent

A separate list of all respondent growing Sugarcane of each selected village was prepared. All Sugarcane grower of selected village was stratified into three categories.

i.e.

marginal - (less than 1 ha),

small - (1-2 ha) and,

medium - (2-4 ha & above)

Table 1: Village wise number of the selected farmers under different size group of farms.

S. No.	Block	Village	Marginal (<1hac)		Small (1-2 hac)		Medium (2-4hac)		Total	
			P.	S.	P.	S.	P.	S.	P.	S.
1.	Palia Kalan	Basanta Pur Kalan	160	5	80	2	50	2	290	9
		Basantapur Khurd	230	7	126	4	122	4	478	15
		Beldandi	145	4	96	3	54	2	295	9
		Puran Purwa	32	1	21	1	18	1	71	2
		Makan Pur	295	9	133	4	85	3	513	16
Sub Total			862	26	456	14	329	10	1647	50
2.	Nighasan	Singahi Kalan	254	10	110	4	66	2	430	16
		Pachpedi	88	3	42	2	37	1	167	6
		Jhandi	123	5	65	2	43	2	231	9
		Kurminpurwa	156	6	67	3	44	2	267	10
		Ghanshyampur	132	5	68	3	36	1	236	9
Sub Total			753	28	352	13	226	8	1331	50
Grand Total			1615	54	808	27	555	18	2978	100

4. **Period of Study:** The data pertained to agricultural year 2024-2025 to estimate costs and returns of Sugarcane.

5. Analytical procedure

Tabular Analysis: A tabular analysis was conducted to compare various aspects of the cost and return analysis for the various categories of sample farms (Kumar, *et al.* 2023) [7].

Average: The simplest and the most important measures of average mean and weighted mean were applied. The formula of mean and W.A. is given below.

$$X = \frac{\sum X}{N}$$

Where,
X=Mean, $\overline{N}$= Total No of observation, x = All observations

Percentage: Percentage is the number or ratio expressed as a fraction of hundredth. It is denoted using the percent sign "%". It is computed as;

$$\text{Percentage (\%)} = \frac{Part\ Value}{Total\ Value}$$

Cropping intensity: Cropping intensity refers to the quantity of crops planted on a farm throughout the year using land as a fixed resource. It is calculated as.

$$C \cdot I = \frac{Total\ Cropped\ area}{Net\ Sown\ area} \times 100$$

Where, C. I. = cropping intensity

Measures of Cost Concepts (Srivastava *et al.*, 2024; Kumari *et al.*,2021) [11, 8]

Cost A1: It includes total cash expenses incurred by cultivators which are follows
a) Wage of hired human labour.
b) Charges for bullock labour.
c) Hired labour charges of implements and machinery.
d) Cost incurred on manures and fertilizers.
e) Setts.
f) Plant protection chemicals.
g) Irrigation charges.
h) Land revenue.
i) Depreciation.
j) Repair charges on farm assets.

Cost A2: Cost A1 + Rent paid for leased in land.
Cost B1: Cost A2 + Interest on owned fixed capital assets.
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 cost C2 (managerial cost)
Measures of Farm Profit (Munusamy *et al.*,2022; Kamal *et al.*,2015) [9, 5]
Gross Income = Yield in quintal × Price per quintal.
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 C
Farm investment income = Net Income + Rental value of owned land+ Interest on fixed capital
Input Output ratio = Gross Income/Cost3
Benefit Cost Ratio = Net Income /Cost3

Results and Discussion

Structure of sample farms

Table 2: Distribution of respondents according to their land holding

Farm size	Marginal	Small	Medium	Total
No. of farms	54	28	18	100
Total land holdings	32.9	39.35	49.4	121.65
%	27.04	32.35	40.61	100
Avrage size of holdings	0.61	1.41	2.74	1.22

He data presented in Table 3.1 illustrates the distribution of landholdings based on farm size categories as marginal, small, and medium. Out of a total of 100 farms surveyed, marginal farmers accounted for the largest number, with 54 holdings, followed by 28 small and 18 medium farms.
Despite having the highest number of holdings, marginal farmers possessed only 32.90 hectares, which is 27.04% of the total land area. Small farmers held 39.35 hectares, representing 32.35%, whereas medium farmers held the largest share of land at 49.40 hectares or 40.61% of the total 121.65 hectares. The average size of landholdings increases with farm category, being 0.61 ha for marginal, 1.41 ha for small, and 2.74 ha for medium farms. The overall average size of holdings across all categories was calculated to be 1.22 hectares.
This distribution highlights the prevalence of small and marginal farmers in terms of number, while a relatively smaller proportion of medium farmers control a significant portion of agricultural land.

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

S. No.	Size group of farms	No. of farms	Net cultivated area (ha)	Gross Cropped area (ha)	Cropping intensity
1	Marginal	54	0.61	1.59	260.66
2	Small	28	1.41	3.62	256.74
3	Medium	18	2.74	6.86	250.36
	Overall Average	100	1.2174	3.107	255.22

The analysis of net cultivated area, gross cropped area, and cropping intensity across various farm size groups revealed significant differences in land utilization patterns. A total of 100 sample farms were categorized into marginal, small, and medium groups based on their operational land holdings.
Among these, marginal farms (54 in number) had an average net cultivated area of 0.61 hectares and a gross cropped area of 1.59 hectares, resulting in the highest cropping intensity of 260.66%. This indicates that marginal farmers tend to cultivate their land more intensively by growing multiple crops in a year, likely due to the need for maximum utilization of their limited land resources.
In contrast, small farms (28 in number) had an average net cultivated area of 1.41 hectares and a gross cropped area of 3.62 hectares, with a cropping intensity of 256.74%. While slightly lower than marginal farms, this still reflects a high level of land use efficiency, suggesting that small farmers also pursue multiple cropping practices to enhance productivity.

Table 4: Costs of cultivation of banana crop on different size group of sample farms (Rs.)

S. No.	Particulars	Marginal (54)	Small (28)	Medium (18)	Overall average
1	Human Labour	17770.0 (12.2)	18433.0 (12.0)	20360.0 (13.1)	18421.8 (12.3)
a.	Family Labour	12439.0 (8.5)	10138.2 (6.6)	6108.0 (3.9)	10655.2 (7.1)
b.	Hired Labour	5331.0 (3.7)	8294.9 (5.4)	14252.0 (9.1)	7766.7 (5.2)
2	Machinery Charges	16905.4 (11.6)	17855.0 (11.6)	18175.0 (11.7)	17399.8 (11.6)
3	Setts/Planting Material	22560.0 (15.5)	23570.0 (15.4)	25500.0 (16.4)	23372.0 (15.6)
4	Manure and fertilizer	20500.0 (14.0)	22955.0 (15.0)	23770.0 (15.3)	21776.0 (14.5)
5	Irrigation	18500.0 (12.7)	19450.0 (12.7)	20500.0 (13.2)	19126.0 (12.8)
6	Plant Protection/Interculture	11533.9 (7.9)	11422.9 (7.4)	13555.4 (8.7)	11866.7 (7.9)
7	Total working capital	107769.3 (73.8)	113685.9 (74.1)	121860.4 (78.2)	111962.3 (74.7)
8	Interest on working capital	4310.8 (3.0)	4547.4 (3.0)	4874.4 (3.1)	4478.5 (3.0)
9	Rental value of land	18000.0 (12.3)	18000.0 (11.7)	10000.0 (6.4)	16560.0 (11.1)
10	Interest on fixed capital	2616.1 (1.8)	3265.0 (2.1)	4950.6 (3.2)	3218.0 (2.1)
11	Sub total	132696.1 (90.9)	139498.3 (90.9)	141685.3 (90.9)	136218.8 (90.9)
12	Managerial Cost@10% of sub-total	13269.6 (9.1)	13949.8 (9.1)	14168.5 (9.1)	13621.9 (9.1)
Grand total		145965.7 (100.0)	153448.1 (100.0)	155853.9 (100.0)	149840.6 (100.0)

The cost of cultivation varied significantly across different farm size groups. The total cost of cultivation per farm was highest in medium-sized farms, amounting to ₹1,55,853.90, followed by small farms at ₹1,53,448.10 and marginal farms at ₹1,45,965.70. The overall average cost across all farms stood at ₹1,49,840.60.

Among various cost components, human labour accounted for a considerable proportion of total costs across all size groups. It was observed that marginal farms spent ₹17,770.00 (12.2%) on human labour, followed by small farms (₹18,433.00 or 12.0%) and medium farms (₹20,360.00 or 13.1%). The share of family labour was highest in marginal farms (₹12,439.00 or 8.5%), indicating greater self-reliance, while hired labour costs increased with farm size from ₹5,331.00 (3.7%) in marginal farms to ₹14,252.00 (9.1%) in medium farms. Expenditure on machinery charges was relatively consistent across farm sizes, ranging between ₹16,905.40 and ₹18,175.00, contributing about 11.6-11.7% to the total cost. Similarly, setts or planting material formed a significant input cost, with marginal farms spending ₹22,560.00 (15.5%), small farms ₹23,570.00 (15.4%), and medium farms ₹25,500.00 (16.4%), averaging ₹23,372.00 (15.6%).

The cost of manure and fertilizers also followed a similar trend, contributing around 14-15% of total costs, with marginal farms spending ₹20,500.00 and medium farms ₹23,770.00. Irrigation expenses accounted for around 12.7-13.2% of the total cost, while plant protection and interculture activities contributed 7.4-8.7%, being slightly higher in medium farms due to more intensive crop care practices. The working capital requirement the sum of all variable costs was highest in medium farms at ₹1,21,860.40 (78.2%), followed by small (₹1,13,685.90 or 74.1%) and marginal farms (₹1,07,769.30 or 73.8%). An interest of 3% on working capital was calculated, averaging ₹4,478.50 across all farm sizes.

Fixed cost components such as rental value of land and interest on fixed capital showed variation across farm sizes. The rental value was uniform at ₹18,000.00 for marginal and small farms, but significantly lower for medium farms (₹10,000.00), likely due to higher self-owned land. The interest on fixed capital increased with farm size, ranging from ₹2,616.10 in marginal farms to ₹4,950.60 in medium farms. Adding all fixed and variable costs, the sub-total cost across all farms was nearly the same proportionally, contributing 90.9% of the total cost. The managerial cost, calculated as 10% of the sub-total, accounted for the remaining 9.1%, averaging ₹13,621.90.

In summary, the cost structure indicates that labour, planting material, manure & fertilizers, and irrigation are the key contributors to total cultivation costs. Marginal farms rely more on family labour and incur relatively lower fixed capital costs, whereas medium farms show higher reliance on hired labour and machinery. The overall pattern reflects that with increasing farm size, the absolute cost increases, but the composition of cost components shifts toward more capital-intensive inputs.

Table 5: The per-hectare costs and income from the production of banana crop on different costs concept (Rs.)

Sl. No.	Particulars	Size group of farms			Overall average
		Marginal	Small	Medium	
1	Cost A_1/A_2	99641.05	108095.17	120626.77	105785.63
2	Cost B_1	102257.10	111360.13	125577.32	109003.59
3	Cost B_2	120257.10	129360.13	135577.32	125563.59
4	Cost C_1	114696.10	121498.28	131685.32	119658.77
5	Cost C_2	132696.10	139498.28	141685.32	136218.77
6	Cost C_3	145965.71	153448.10	155853.86	149840.65
7	Yield	233.45	225.75	218.76	228.65
8	Gross Income	513590.00	507937.50	503148.00	510127.74
9	Net return over C_3	367624.29	354489.40	347294.14	360287.09
10	Family labour Income	393332.90	378577.37	367570.68	384564.15
11	Farm Business income	413948.95	399842.33	382521.23	404342.11
12	Farm Investment Income	388240.34	375754.36	362244.69	380065.05
13	Cost of production (Rs./Qtl.)	625.25	679.73	712.44	656.20
	Input-output Ratio				
14.	On the basis of A_1/A_2	1:5.15	1:4.70	1:4.17	1:4.85
15.	On the basis of B_1	1:5.02	1:4.56	1:4.01	1:4.71
16.	On the basis B_2	1:4.27	1:3.93	1:3.71	1:4.07
17.	On the basis of C_1	1:4.48	1:4.18	1:3.82	1:4.28
18.	On the basis of C_2	1:3.87	1:3.64	1:3.55	1:3.75
19.	On the basis of C_3	1:3.52	1:3.31	1:3.23	1:3.41
20.	B:C Ratio	1:2.51	1:2.31	1:2.22	1:2.40

The detailed cost and return analysis across different farm size groups revealed notable variations in the economic performance of farming operations. Among all farm categories, Cost A_1/A_2, which includes all paid-out costs, was lowest for marginal farms at ₹99,641.05 and highest for medium farms at ₹1,20,626.77, with an overall average of

₹1,05,785.63. As cost components broadened to include imputed costs, the figures for Cost B_1, B_2, C_1, and C_2 increased accordingly. The Cost C_3, which includes all explicit and implicit costs along with managerial charges, was ₹1,45,965.71 for marginal, ₹1,53,448.10 for small, and ₹1,55,853.86 for medium farms, with an overall average of ₹1,49,840.65.

In terms of yield, marginal farms performed better (233.45 quintals), followed by small (225.75 quintals) and medium farms (218.76 quintals), indicating higher productivity among smaller landholders. The gross income followed a similar pattern, with marginal farms earning ₹5,13,590.00, slightly ahead of small and medium farms. The net return over Cost C_3 was highest in marginal farms (₹3,67,624.29), and lowest in medium farms (₹3,47,294.14), suggesting that marginal farmers, despite smaller landholdings, achieved better economic efficiency.

The analysis also showed that family labour income, an important indicator of returns to the family's effort, was maximum in marginal farms at ₹3,93,332.90, and declined with increasing farm size. Farm business income, which reflects returns over Cost A_1/A_2, was ₹4,13,948.95 for marginal farms and lowest in medium farms (₹3,82,521.23). Similarly, farm investment income (returns over Cost B_2) was highest for marginal farms at ₹3,88,240.34. The cost of production per quintal increased with farm size, being lowest in marginal farms at ₹625.25 and highest in medium farms at ₹712.44, with an average of ₹656.20 per quintal. This trend implies that smaller farms utilized their resources more efficiently, leading to lower production costs.

The input-output ratios further confirmed these observations. On the basis of Cost A_1/A_2, the input-output ratio was highest for marginal farms (1:5.15) and lowest for medium farms (1:4.17), with an overall average of 1:4.85. This pattern continued across all cost concepts (B_1, B_2, C_1, C_2, and C_3), consistently showing that marginal farms generated more output per rupee spent compared to larger farms. The Benefit-Cost Ratio (B:C), a key indicator of profitability, was again highest for marginal farms at 2.52, followed by small (1:2.31) and medium farms (1:2.23), with an overall B:C ratio of 1:2.40.

In conclusion, the data clearly suggest that marginal and small farmers were more cost-efficient and achieved higher economic returns per unit of investment, despite their limited land resources. This may be attributed to better utilization of family labour, lower dependency on hired services, and more intensive management practices at smaller scales

Conclusion

The comprehensive analysis of farm size categories as marginal, small, and medium reveals distinct differences in landholding patterns, cultivation practices, input costs, and economic returns. Marginal farmers, despite operating the smallest land area, demonstrated the highest cropping intensity and productivity, indicating more intensive use of their limited resources. They exhibited greater reliance on family labour, leading to reduced dependency on hired services and lower fixed capital costs. Cost efficiency was highest among marginal farmers, as reflected in their lower cost of production per quintal and higher input-output ratios. The analysis underscores that smaller farms achieved better returns relative to their investment, highlighting their resilience and efficient farm management.

Economically, marginal farmers outperformed their counterparts in terms of net returns, family labour income, and farm business income. Their benefit-cost ratio (2.52) was the highest, showing greater profitability despite smaller operational scale. While medium farms incurred higher absolute costs due to increased mechanization and hired labour, their returns per rupee invested were comparatively lower. This suggests that policy interventions aiming to support and enhance smallholder farming through access to credit, improved technology, and market linkages could yield significant gains in rural livelihoods and overall agricultural productivity. The findings reinforce the crucial role that marginal and small farmers play in sustainable agriculture and rural economies.

References

1. Abdulrahman S, Magaji BD, Onwuaroh AS, Adejoh OS, Binuyo G. Economics and efficiency of rain-fed cabbage production (Brassica oleracea var. Capitata) in Kaduna State, Nigeria. J Exp Agric Int. 2018;28(6):1-10.
2. Jadav KS, Patel GN. An analysis of marketing behavior of brinjal in Gujarat State. In: State Level Conference on Problems and Prospects of Gujarat Agricultural Sector after Reforms. Ahmedabad: S.M. Patel Institute of Commerce; 2008. p. 1-13.
3. Jorwar RM, Ulemale DH, Sarap SM. Economics of production and marketing of tomato in Amravati district. Int Res J Agric Econ Stat. 2017;8:56-9.
4. Kabiraj J, Das R, Das SP, Mandal AR. A study on tomato (*Solanum lycopersicum*) based intercropping system. Int J Curr Microbiol Appl Sci. 2017;6(7):2595-602.
5. Kamal M, Ali MA, Alam M. Cost and return analysis of banana cultivation under institutional loan in Bogra, Bangladesh. 2015.
6. Kanaujia VK, Gupta P, Gupta JL. On-farm trials on rabi pulses under rainfed condition of Bundelkhand. Agric Sci Dig. 2014;34(1):60-3.
7. Kumar N, Kushwaha R, Meena N, Mishra H, Yadav APS. A study on costs and returns of paddy cultivation in Ambedkar Nagar district of Uttar Pradesh. Int J Appl Math Stat. 2023;8:107-11.
8. Kumari S, Mishra R, Mishra A, Jhariya P. Estimation of costs and returns per hectare of banana cultivation in Vaishali district of Bihar. 2021.
9. Munusamy V, Selvakumar R, Azhagesan R. An economic analysis of trend, cost and returns of banana in Kanniyakumari district of Tamil Nadu. 2022.
10. Pandian H, Seelan SB. Cost and return analysis of banana cultivation among marginal and small farmers in Tiruchendur Taluk, Thoothukudi district. 2018;2:56-64.
11. Srivastava AB, Supriya, Mishra H. Economic study on costs and returns of sugarcane in Ghazipur district of Uttar Pradesh. Int J Res Agron. 2024;7:751-7. doi:10.33545/2618060X.2024.v7.i5j.847.