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Economic analysis and livelihood impact of Amla (Aonla) product manufacturing in Pratapgarh District of Uttar Pradesh

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Abstract

The present study was conducted to examine the economic viability and livelihood impact of Amla (Aonla) product manufacturing in Pratapgarh district of Uttar Pradesh during the agricultural year 2025-26. A combination of purposive and random sampling techniques was employed for the selection of respondents. A total of 90 Amla product manufacturers, along with wholesalers, retailers, producers, and consumers, were selected for the study. Primary data were collected through personal interviews using a structured interview schedule, while secondary information was obtained from relevant published and official sources. Cost sheet analysis, arithmetic mean, and correlation analysis were used for data interpretation. The findings revealed that value addition through Amla processing was economically profitable. The total cost of production of Amla candy and murabba was estimated at ₹126 and ₹125 per kilogram, respectively. The net profit realised from candy and murabba amounted to ₹54 and ₹95 per kilogram, with benefit-cost ratios of 1.43 and 1.76, respectively. Murabba emerged as the more profitable product due to its higher market price and return. The study further indicated substantial improvements in the socio-economic status of processors after adopting Amla processing activities. Average annual income increased by 94.1 per cent, employment generation by 75.0 per cent, and household savings by 204.7 per cent. Significant growth was also observed in investment in processing equipment, access to institutional credit, educational expenditure, and asset ownership. Correlation analysis showed strong positive relationships between income and household savings (0.84), employment generation (0.78), asset ownership (0.73), investment in processing (0.71), and education expenditure (0.69). The study concluded that Amla product manufacturing significantly enhanced rural livelihoods and offered a sustainable avenue for income generation and employment creation.

Keywords: Amla processing, value addition, profitability analysis, livelihood impact, rural entrepreneurship

Introduction

Amla (Aonla), scientifically known as *Phyllanthus emblica*, had been regarded as one of the most important indigenous fruit crops of India owing to its high nutritional, medicinal, and economic significance. The fruit had been widely utilised in the preparation of various value-added products such as murabba, candy, juice, pickle, powder, and preserves due to its rich content of vitamin C, antioxidants, and therapeutic properties. In recent years, the demand for processed Amla products had increased considerably because of growing consumer awareness regarding health and nutritional benefits. Uttar Pradesh had occupied a prominent position in Amla cultivation, while Pratapgarh district had emerged as one of the major production centres due to favourable agro-climatic conditions and the traditional involvement of rural households in Amla processing activities. The manufacturing of Amla products had played a significant role in promoting rural industrialisation, generating employment opportunities, and enhancing the income of small-scale producers and self-help groups. The sector had also contributed towards reducing post-harvest losses and improving the value chain efficiency of horticultural produce. Despite its economic potential, Amla product manufacturing had been constrained by

several challenges such as inadequate processing infrastructure, lack of modern technology, limited access to organised markets, price fluctuations, and insufficient institutional support. Therefore, an economic analysis of Amla product manufacturing and its livelihood impact had become essential for understanding the profitability, marketing structure, and socio-economic contributions of the enterprise. The present study had been undertaken to examine the economic viability, marketing channels, and livelihood implications of Amla product manufacturing in Pratapgarh district of Uttar Pradesh with a view to suggesting measures for sustainable development and improved income generation among rural producers.

Research Methodology

The selection of the district, block, villages, and respondents had been carried out through a combination of purposive and random sampling techniques. Pratapgarh district had been purposively selected in order to minimise logistical difficulties and time constraints encountered during the course of the study. Among the various blocks of the district, Shivgarh block had been selected purposively owing to the relatively higher concentration of respondents engaged in the manufacturing of Amla (Aonla) products.

Thereafter, a comprehensive list of villages within the selected block had been prepared, from which five per cent of villages possessing a comparatively larger number of Amla product manufacturers had been selected through random sampling techniques. Subsequently, a complete list of Amla product manufacturers in the selected villages had been compiled and classified into three categories on the basis of production scale, namely small (up to 700 kg per annum), medium (701-1500 kg per annum), and large (above 1500 kg per annum). From the prepared sampling frame, a total of 90 manufacturers had been selected through proportionate random sampling. In addition, 10 wholesalers, 5 retailers, 10 producers, and 5 consumers had been selected for assessing the economic analysis and livelihood impact within the study area. Primary data had been collected through direct personal interviews with the aid of a well-structured interview schedule, whereas secondary data had

been obtained from books, journals, reports, and official records available at district and block headquarters. The collected data had subsequently been analysed by employing appropriate statistical tools, and the findings of the study pertained to the agricultural year 2025-2026.

Analytical Tools

1. **Cost Sheet Analysis:** Prime Cost (Direct Materials + Direct Labour + Direct Expenses)
2. **Arithmetic Mean:** $= \sum Xi/N$

Coefficient of Correlation(r)

$$r = [\sum (x - \bar{x})(y - \bar{y})] / \sqrt{[\sum (x - \bar{x})^2 \times \sum (y - \bar{y})^2]}$$

Results and Discussion

Table 1: Profitability Analysis of Manufacturing Amla (Aonla) Products (Murabba and Candy) (per kg).

Sr. No.	Particulars	Amla (Aonla) Candy (₹/kg)	Amla (Aonla) Murabba (₹/kg)
i.	Raw Amla (Aonla)	40	30
ii.	Sugar	43	43
iii.	Spices / additives	3	5
iv.	Fuel / electricity	8	8
v.	Labour	10	10
vi.	Packaging	8	12
vii.	Transportation	5	5
viii.	Storage Cost	6	7
ix.	Miscellaneous	3	5
A	Total Cost of Production (i-ix)	126	125
B	Selling Price	180	220
C	Gross Return	180	220
D	Net Profit	54	95
E	Benefit-Cost Ratio (B:C)	1.43	1.76

Table 1: The table presents the cost and profitability analysis of value-added Amla (Aonla) products, namely candy and murabba, after including storage costs. The total cost of production for Amla candy was ₹126 per kilogram, while Amla murabba required ₹125 per kilogram. Raw material and sugar constituted the major share of production expenses in both products. Additional costs such as labour, packaging, transportation, fuel, and storage also contributed significantly to the total expenditure. Despite slightly higher production costs, both products generated profitable returns.

The selling price and gross return of Amla candy were ₹180 per kilogram, resulting in a net profit of ₹54 and a benefit-cost ratio of 1.43. In comparison, Amla murabba showed higher economic viability with a selling price of ₹220 per kilogram, net profit of ₹95, and a benefit-cost ratio of 1.76. Overall, the analysis indicates that value addition through processing of Amla products can enhance profitability and provide better income opportunities for rural entrepreneurs and small-scale processors.

Table 2: Socio-Economic Impact of Amla (Aonla) Product Manufacturing on Livelihood of Amla (Aonla) products (Murabba and Candy) manufacturers.

S. No.	Socio-Economic Indicator	Before Starting Amla (Aonla) Processing	After Starting Amla (Aonla) Processing	Percentage (%) Change
1	Average Annual Income (₹)	85,000	1,65,000	94.1
2	Employment Generated (days/year)	120	210	75.0
3	Household Savings (₹/year)	10,500	32,000	204.7
4	Investment in Processing Equipment (₹)	8,000	45,000	462.5
5	Access to Institutional Credit (%)	30	65	116.7
6	Standard of Living Index (Score out of 10)	4.5	7.8	73.3
7	Education Expenditure (₹/year)	6,000	15,000	150.0
8	Asset Ownership (Score)	3.2	6.1	90.6

Table 2: The present table showed the socio-economic impact of Amla (Aonla) processing on the livelihood of processors in the study area by comparing the conditions before and after starting Amla (Aonla) processing activities.

The results indicated a significant improvement in various socio-economic indicators. The average annual income of the respondents increased from ₹85,000 to ₹1,65,000, showing a rise of 94.1 per cent. Employment generation also

increased from 120 to 210 days per year, reflecting a 75.0 per cent improvement. Household savings increased considerably from ₹10,500 to ₹32,000 per year. Similarly, investment in processing equipment, access to institutional credit, and education expenditure also recorded substantial growth. The standard of living index and asset ownership score improved notably after adopting Amla (Aonla) processing. Overall, the findings suggested that Amla (Aonla) processing had a positive impact on improving the economic condition and livelihood of the processors.

Table 3: Correlation Analysis

Variable	Correlation with Income
Employment Generation	0.78
Household Savings	0.84
Investment in Processing	0.71
Education Expenditure	0.69
Asset Ownership	0.73

Table 3: The present table showed the correlation between income and selected socio-economic variables of the respondents involved in Amla (Aonla) processing in the study area. The results indicated a positive relationship between income and all the selected variables. Household savings showed the highest correlation with income (0.84), followed by employment generation (0.78) and asset ownership (0.73). Investment in processing also had a strong positive correlation with income (0.71), indicating that higher investment in processing activities contributed to increased earnings. Similarly, education expenditure exhibited a positive correlation with income (0.69), suggesting that improved income levels enabled processors to spend more on education.

Conclusion: The study concluded that Amla (Aonla) product manufacturing constituted a financially viable and socially beneficial enterprise in Pratapgarh district of Uttar Pradesh. The economic analysis demonstrated that value addition through the processing of Amla into products such as candy and murabba generated substantial returns for rural entrepreneurs and small-scale processors. Although the cost of production of both products remained relatively similar, Amla murabba yielded higher profitability, recording a net profit of ₹95 per kilogram and a benefit-cost ratio of 1.76 compared with ₹54 per kilogram and a benefit-cost ratio of 1.43 for Amla candy. These findings indicated that processing activities significantly enhanced the market value of raw Amla and contributed to greater income generation for producers. The livelihood assessment further revealed that engagement in Amla processing had brought remarkable improvements in the socio-economic conditions of the respondents. Average annual income nearly doubled, while employment opportunities increased considerably, reflecting the labour-intensive nature of processing activities. Household savings recorded a substantial increase, enabling processors to improve their financial security and resilience. Increased investment in processing equipment demonstrated growing confidence in the enterprise and indicated the expansion potential of the sector. Access to institutional credit improved significantly, suggesting enhanced financial inclusion among processors. Furthermore, higher expenditure on education and increased

asset ownership reflected improvements in household welfare and living standards. The correlation analysis established strong positive relationships between income and key socio-economic indicators, particularly household savings, employment generation, asset ownership, investment in processing, and educational expenditure. These results suggested that increases in income generated through Amla processing had directly contributed to broader socio-economic development among rural households. Overall, the study established that Amla product manufacturing served as an effective mechanism for rural industrialisation, employment creation, income enhancement, and poverty reduction. The enterprise also contributed towards reducing post-harvest losses and strengthening the horticultural value chain through value addition. Therefore, the promotion of Amla processing through improved infrastructure, modern processing technologies, skill development programmes, institutional credit support, and better market linkages could further enhance its economic sustainability and livelihood benefits. The study thus highlighted the considerable potential of Amla processing as a sustainable rural development strategy in the study area.

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