Review Article

A Review of Post-Harvest Management and Value Addition of Horticultural Crops: A Source of Income Generation for the Farmers of Bundalkhand

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Abstract:
India's horticulture sector has demonstrated impressive growth, yielding 223.089 million tonnes of produce in the 11th five-year plan, predominantly driven by fruits and vegetables. Despite utilizing a relatively small portion of the cropped area, this sector contributed a substantial 30 percent to India's agricultural GDP. However, challenges persist in fully integrating waste utilization technologies from developed nations into Indian conditions. Thus, a need for tailor-made, cost-effective technologies specifically suited to Indian conditions is paramount, focusing on value-added product production. Efficient post-harvest management not only enhances value addition but also transforms waste into a valuable resource, ultimately reducing production costs and maximizing biomass utilization. Various advanced process technologies, including drying, freezing, fermentation and extraction, stand as promising methods for recycling and upgrading waste within the fruit and vegetable market. The study emphasizes the potential of horticultural crops in sustainable agriculture, their economic and nutritional significance and aims to propose strategies for optimized post-harvest practices and value addition to benefit farmers in Bundelkhand.
Keywords: Post-Harvest Management, Value Addition, Horticultural Crops, Income Generation.

Introduction:

Horticultural crops offer a promising avenue for reclaiming and developing wastelands strategically. Requiring less water than food crops, they create more employment opportunities and are eco-friendly. Fruits and vegetables, critical for nutrition, possess significant value addition potential, contributing to foreign exchange earnings and commerce due to growing market demand. In India, they play a vital role in the economy, constituting 30% of the output from just 11.73% of arable land, ranking second globally in production after China.The economic outlook for India in the fiscal year 2023-24 hinges on global economic and political factors, with GDP growth projections ranging from 6.0 to 6.8 percent. Smt. Nirmala Sitharaman, the Union Minister for Finance & Corporate Affairs, presented the Economic Survey 2022-23[7], foreseeing a baseline GDP growth of 6.5% for 2023-24, aligning with various reputable organizations' estimates.However, Indian farmers face multiple challenges, exacerbated by climate change, water scarcity and land degradation. These include fragmented land holdings, extreme weather events, rising input costs and substantial post-harvest losses, notably in the horticulture sector, where 25-40% of produce goes to waste due to inadequate post-harvest management. Addressing this inefficiency is crucial to reduce losses and improve the sector's efficiency.

India grapples with substantial post-harvest losses of fruits and vegetables, with only 2.2% undergoing processing. Organizations are working to mitigate this, but visible success remains elusive. The Bundelkhand region, with its unique agricultural landscape and economic context, presents an opportunity to enhance the potential of horticultural produce post-harvest. This review explores strategic approaches, challenges and opportunities associated with optimizing the post-harvest phase, aiming to increase income and improve livelihoods for farmers.

Importance of Horticultural Crops:

Approximately 10-15% of fresh fruits and vegetables experience shrinkage and deterioration, leading to a decline in their market value and desirability for consumers. These commodities, rich in carbohydrates, minerals, vitamins and dietary fibres, constitute a vital component of our daily dietary intake. Dietary fibres offer numerous direct and indirect health benefits. Moreover, fruits and vegetables not only diversify taste but also enhance culinary interest and aesthetic appeal. Their significance in human life is increasingly acknowledged in Western societies, aiming to reduce diseases associated with affluent lifestyles. These natural foods offer lesser-known benefits, including supporting kidney functions and aiding in the prevention of cancer and cardiac disorders by providing ascorbic acid, β-carotene, non-starch polysaccharides, as well as biochemical constituents like phenols, flavonoids and alkaloids. Improper post-harvest operations lead to a significant loss of fruits and vegetables produced in India, creating a substantial gap between gross production and net availability. Furthermore, a mere fraction of these products undergoes processing (less than 1%) and export (Fruits – 0.5%, Vegetables – 1.7%) in comparison to other countries.

Post-harvest losses of Horticultural Crops:

Post-harvest losses in India result from a myriad of factors, encompassing inadequate facilities, limited knowledge, suboptimal management, market inefficiencies and occasional negligence by farmers. Assessing these losses is vital to maximize food availability from current production levels. In the country, the wastage and devaluation of fruits and vegetables are a significant issue, costing an estimated Rs. 23,000 crores annually. The Swaminathan Committee stressed that 20-30% of these losses occur during various post-harvest stages such as storage, grading, packing, transportation and marketing. Additionally, Cantwell (2001) [6] highlighted that India experiences a loss of about 35-45% in harvested fruits and vegetables, amounting to an annual financial loss of Rs. 40,000 crores. The extent of fruit loss varies across types, with substantial losses in fruits like Papaya, Grapes, Banana, Citrus, Avocado and Apple. Similarly, vegetables like Onion, Garlic, Potato, Tomato, Cabbage and Cauliflower, Chilli, Radish and Carrot suffer notable losses (Gupta, 2016) [8].

Post-harvest losses manifest as the deterioration of fruits and vegetables, driven by their high moisture content, tender texture and perishability. Inadequate handling, unsuitable containers, improper packaging and transportation can cause mechanical injuries and physiological deterioration. The perishable nature of these products makes them highly susceptible to decay, over-ripening, mechanical injury, weight loss, trimming and sprouting, contributing to significant losses in the vegetable sector. Addressing these critical aspects is vital for enhancing India's vegetable industry, particularly in processing and marketing, to mitigate post-harvest losses and ensure food security.

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Post-harvest management of Horticultural Crops:

Post-harvest management is a critical process that occurs after the agricultural harvest and is essential for maintaining the quality and longevity of horticultural produce. The aim is to ensure that the produce retains its nutritional value, appearance and taste from the time of harvest to its consumption by end-users.One of the primary objectives of post-harvest management is to time the harvest accurately (Thompson, 2010) [15]. Harvesting at the right moment, when the produce is at its peak quality, helps maximize its shelf life and maintain its nutritional content. Additionally, careful handling during harvesting is crucial to prevent damage to the produce, which can lead to spoilage and loss of market value (Manjula *et al.*, 2017)[10].Proper storage is another key aspect of post-harvest management. Utilizing modern technologies like cold storage facilities and controlled atmosphere storage can significantly

extend the shelf life of perishable goods. Cold storage slows down the ripening and aging processes of fruits and vegetables, thereby preserving their freshness and quality for a longer duration. Controlled atmosphere storage involves modifying the storage environment to control factors like temperature, humidity and gas composition to enhance the storage life of produce (Vivek *et al.*, 2018)[22].Efficient transportation networks are essential for timely and safe delivery of the produce to various markets. Reliable and well-maintained transportation systems help minimize transportation-related losses and ensure that the produce reaches its destination in optimal condition.Moreover, effective marketing strategies play a crucial role in post-harvest management. Farmers in Bundelkhand can benefit significantly from implementing marketing strategies that align with market demand and trends. This includes identifying the appropriate markets, understanding consumer preferences and establishing partnerships with distributors and retailers.

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Value addition of Horticultural Crops:

Value addition is a critical process that enhances the worth of products or services at every stage of production or delivery. This involves adding features, improving quality, or providing services to increase the perceived value for consumers, helping businesses differentiate themselves, meet customer demands and command higher prices.

Value addition through processing, packaging and marketing of guava-based products like juices, jams and preserves has further boosted revenue (Yadav *et al.*, 2017) [24]. Cooperative efforts and government support have enabled farmers to tap into wider markets, improving their livelihoods and contributing to the economic growth of the region. Guavas have not only become a staple fruit but a promising avenue for agricultural prosperity in Bundelkhand.

Aonla, scientifically known as *Phyllanthus emblica* or Indian gooseberry, is a fruit with a sour and astringent taste, making it less popular as a table fruit. However, it holds significant nutritive and therapeutic value, being rich in ascorbic acid, containing about 20 times more vitamin C than citrus fruits (Vikram *et al.*, 2014) [21]. Due to its highly acidic and astringent nature, fresh Aonla fruit is not widely popular for direct consumption, leading to its utilization in the preparation of various Ayurvedic tonics like chyawanprash and triphala. Despite its taste profile, Aonla fruits are extensively processed into diverse food products such as preserves, jams, jellies, candies, pickles, sauces, squashes, juices, ready-to-serve beverages, ciders, shreds, dried powder and more (Vikramand Sikarwar, 2021) [19].

The Bael (*Aegle marmelos* Linn), a fruit native to India, Hindus regard this tree as sacred due to its leaves being offered to Lord Shiva during worship. The fruit has both unripe and ripe forms, each with its own set of properties and applications. The unripe dried fruit is known for its astringent, digestive and stomachic properties, effectively used to cure diarrhea and dysentery. Ripe Bael fruit serves as a simple and effective cure for dyspepsia (Bhattachajee and Dee, 2005) [4]. Various process technologies exist for producing value-added preserved products from Bael fruit, extending its shelf life and expanding its usage. The fruit pulp is rich in functional and bioactive compounds such as carotenoids, phenolics, alkaloids, coumarins, flavonoids and terpenoids, making it a valuable ingredient with numerous traditional medicinal uses (Verma *et al.*, 2000)[17].

Wood apple, also known as "*Limoniaacidissima*" is a versatile fruit native to South Asia, offering numerous possibilities for economic growth and agricultural innovation. In local markets, it can be processed into various products such as wood apple juice, jams, jellies and pickles, preserving its unique taste and nutritional qualities. In the international market, wood apple's distinct flavor and potential health benefits make it an attractive ingredient for the global food industry, suitable for juices, smoothies, energy bars, health supplements and as a natural flavor enhancer in various culinary applications (Barbosa-Canovas *et al.*, 1996)[3].

Beyond its fruit, the wood from the tree can be utilized in crafting furniture, utensils and decorative items, adding to the array of value-added products derived from this versatile tree.

Jamun, a fruit rich in iron (providing 1-2 mg per 100 grams) and vitamin C, offers valuable health benefits, especially in the treatment of heart and liver ailments. Its seeds, when dried and powdered, are extensively used in India to regulate diabetes (Havinga*et al.,* 2010) [9]. Additionally, Jamun fruits can be processed into high-quality products like vinegar, cider, squash and non-fermented ready-to-serve beverages. The vibrant color of Jamun pulp is attributed to anthocyanin pigment, enhancing the appeal of Jamun-based beverages. Moreover, Jamun is a potent source of various essential nutrients, including glucose, fructose, minerals, proteins and vitamins (Wills *et al.,* 2007) [23].

Despite recent value-added commercial efforts, Karonda remains underutilized. Various products like candy, jam, pickle, chutney, powder, beverages, syrup and even flavored ice cream and milk can be prepared from Karonda, showcasing its versatility and potential in the food industry. Additionally, it can be utilized as a natural food colorant and nutraceuticals supplement, highlighting its multifaceted applications in the culinary world (Vikram*et al.,* 2016) [20].

Phalsa, a versatile fruit, offers rich nutritional and medicinal benefits. It contains vital vitamins, minerals and amino acids. Its potential as an herbal medicine to combat ailments like cancer, aging, fever, rheumatism and diabetes is noteworthy. Phalsa acts as an antioxidant and radio protective agent, amplifying its health benefits. Various processed products, including Ready-to-Serve (RTS), squash and syrup, can be derived from this fruit (Sanal and Kumar, 2017) [13]. However, its perishable nature poses a challenge for storage. Enhancing post-harvest life is essential to optimize utilization and ensure the longevity of this valuable fruit.

In recent years, minimally processed "ready-to-eat" pomegranate arils have gained popularity for their convenience, rich sensory profile and health benefits. Nasr (2021) [11]highlighted the growing global interest in postharvest handling and nutritional value of pomegranates, reflecting the increasing importance of this fruit in the market. Arils can be preserved by soaking them in vinegar with a 5% acidity and then packing them in a jar, resulting in brown-colored pomegranate arils. Pomegranate juice is also utilized to create an attractive jelly. Preservation can be achieved through pasteurization or sodium benzoate addition. Furthermore, pomegranate juice can be fermented with starter wine yeast to create good quality wine, with sugar added to adjust the Brix to 22-23°. The wine is clarified using bentonite or centrifugation and aged similarly to red grape wine.

Tamarind, a popular ingredient, offers versatile value additions. Tamarind pickle blends tamarind pulp, spices and oil, delivering a tangy, spicy condiment. Tamarind sauce combines the pulp with sugar and spices, creating a sweet and sour dipping sauce. Tamarind rasam paste incorporates tamarind, lentils and spices, enabling quick preparation of tangy and aromatic South Indian rasam soup (Buyinza *et al.,* 2010) [5]. Each product harnesses the distinct flavors of tamarind, enhancing culinary experiences with their unique taste profiles and applications.

Figs are versatile fruits that can be enjoyed in various culinary forms. One popular way to consume figs is by making fig jam, which serves as a delightful bread spread. Additionally, figs can be a key ingredient in creating mixed fruit jam, enhancing its flavor and nutritional value (Roy *et al.,* 2013) [12]. Another option is preparing fig squash, a concentrated mixture that, when diluted with water in a 1:3 ratio, transforms into a refreshing beverage. This fig-based beverage is not only delicious but also serves as a thirst quencher, perfect for hydrating and cooling down, especially during hot weather. The adaptability of figs in these diverse preparations showcases their versatility and ability to be enjoyed in different forms, catering to various taste preferences and occasions.

The Tendu tree (*Diospyros melanoxylon*) holds great economic significance for tribal communities, primarily due to the value of its leaves. These leaves are highly prized by tribal people and are extensively utilized in the production of "bidi" and "cigarettes" within the bidi industry, forming a crucial source of income (Vikram and Sikarwar, 2018) [18]. Interestingly, while the leaves are in high demand, the fruits of the Tendu tree are relatively less utilized, despite being a rich source of carbohydrates, calcium, phosphorus and beta-carotene. The fruit pulp contains essential minerals and vitamins like potassium, phosphorus, calcium, magnesium, sodium, vitamin C, thiamine, riboflavin, niacin and beta-carotene. The fresh pulp is also used to create a range of organic foods such as pakora, upama, pickle, paratha and jam, contributing to the local and global markets.

Chironji, scientifically known as Buchananialanzan, is a nut-like seed derived from a tropical evergreen tree native to India. It holds cultural and culinary significance, commonly used in Indian cuisine and traditional medicine. The seeds are small, pale and shaped like miniature almonds, with a mild, slightly sweet flavor. Chironji is often roasted or ground into a paste to enhance the taste and texture of various dishes. In traditional medicine, it is believed to possess medicinal properties and is used for its potential health benefits, including aiding digestion and improving skin health.

Drumsticks, derived from the Moringa oleifera tree, are proving to be a vital source of income and value addition for farmers in Bundelkhand. Additionally, value addition through processing drumsticks into various products like powder, oil and supplements further amplifies the income potential, making drumsticks a lucrative agricultural venture (Stanley, 1998) [14].

Cluster beans, commonly known as Guar, have thrives in challenging climates, offering a lucrative market with diverse applications. Farmers have optimized their cultivation techniques, embracing sustainable practices and tapping into burgeoning demand from industries like food, pharmaceuticals and oil extraction. Value addition through processing has elevated the economic viability, empowering local farmers to bolster their livelihoods and contribute to the economic upliftment of the region, turning arid landscapes into fertile grounds of opportunity and growth.

Okra, also known as Ladyfinger, has emerged as a vital source of income and value addition for farmers in Bundelkhand. The region's favorable climate and soil conditions make it ideal for okra cultivation, leading to increased yields and quality produce. Farmers have embraced modern farming techniques, enhancing productivity and ensuring a steady revenue stream. Value addition through processing and packaging has further amplified profits, creating a sustainable livelihood (Ubale *et al.*,2014)[16]. Okra's popularity in local and international markets has transformed it into a lucrative cash crop, bolstering economic stability and empowerment within the farming community of Bundelkhand.

Similarly, pumpkin, widely cultivated in tropical and subtropical countries, is primarily consumed as a vegetable but has applications in traditional medicines and oil extraction in certain regions (Alzamora*et al.*,1995)[1]. Pumpkins provide a valuable source of carotenoids, crucial for provitamin A nutrition. Despite being a cost-effective source of carotenoids, issues with storage and misconceptions have led to underutilization of pumpkins in culinary contexts. Dehydrating pumpkins and utilizing them in various food products significantly enhances their shelf life, reduces storage space and lightens transportation weight. Dehydrated pumpkin becomes an incredibly concentrated source of carotenoids. Research on the production technology of pumpkin powder resulted in a superior-quality, carotene- and mineral-rich, self-stable pumpkin powder suitable for various culinary applications (Arthey and Ashurst, 1996) [2].

The value addition of these fruits involves various processing techniques, including extraction, dehydration, juicing and formulation into different products. These processes aim

to retain the fruits' natural goodness while enhancing their shelf life and usability. Furthermore, incorporating these fruits into value-added products promotes their consumption throughout the year, even when they are not in season.
The economic potential of value-added products from these fruits is substantial. The global demand for natural, healthy and sustainable food products is steadily increasing, creating a promising market for jams, juices, concentrates and other processed forms of these fruits. Additionally, the pharmaceutical and nutraceutical industries are recognizing the therapeutic potential of these fruits, further boosting their demand and value.

Table 1. Average monthly income of agricultural household for each class of land possessed in Bundelkhand Region.

Aspect	Bundelkhand Region (Uttar Pradesh)	Overall State of Uttar Pradesh	Eastern Agro-climatic Zone (Uttar Pradesh)	National Level	Madhya Pradesh
Income Sources (%)	Agriculture: 59.35	Agriculture: 51.19	N/A	N/A	N/A
	Livestock and Fisheries: 17.87	Livestock and Fisheries: 13.07	N/A	N/A	N/A
	Industry and Trade: 0.33	Industry and Trade: 1.95	N/A	N/A	N/A
	Wage: 9.43	Wage: 7.46	N/A	N/A	N/A
	Service: 8.95	Service: 16.46	N/A	N/A	N/A
	Other Sources: 4.08	Other Sources: 9.86	N/A	N/A	N/A
Effect of Land Productivity on Reduction in Rural Poverty	Strong in Bundelkhand Region of Uttar Pradesh	N/A	Weak in Eastern Agro-climatic Zone of Uttar Pradesh	N/A	N/A
Average Value of Assets and Cash	Land and Building: 94%	Land and Building: 94%	N/A	Land and Building: 94%	Land and Building: 94%
Loan Outstanding (2022)	Other Assets: 6%	Other Assets: 6%	N/A	Other Assets: 6%	Other Assets: 6%
(%)	Cash Loan Outstanding: 3.5%	Cash Loan Outstanding: 3%	N/A	Cash Loan Outstanding: 3%	Cash Loan Outstanding: 3%

Challenges and Opportunities:
In the region of Bundelkhand, farmers grapple with a multitude of obstacles that impede their agricultural endeavors while also being presented with promising prospects for growth and development. These challenges primarily encompass insufficient infrastructure, a deficit in

technical expertise, constrained access to credit and the unpredictable dynamics of the market. The combination of these factors makes it difficult for farmers to optimize their productivity and income, ultimately hindering their overall prosperity and well-being.One of the critical issues in Bundelkhand is the inadequate infrastructure that hampers efficient agricultural operations. The lack of proper roads, storage facilities and processing units poses significant challenges in transporting and preserving harvested crops. Moreover, the absence of modern technology and expertise exacerbates these problems, limiting the farmers' ability to employ innovative and efficient farming practices.Additionally, the limited access to credit amplifies the hurdles faced by the farmers. Insufficient financial support restricts their capacity to invest in essential inputs such as seeds, fertilizers, machinery and training. This financial constraint becomes a barrier to adopting modern and sustainable farming techniques, further entrenching the cycle of low productivity and income.Market fluctuations present yet another formidable challenge. Farmers often grapple with volatile prices, uncertain demand and market unpredictability, making it difficult to plan their production and marketing strategies. This uncertainty undermines their confidence and ability to make informed decisions regarding their crop choices and selling timings.Addressing these challenges requires a holistic approach centered around well-crafted government policies.

Policy Recommendations:

a. Infrastructure Development:

Infrastructure development is a critical component of improving the agricultural sector and ensuring its efficiency and sustainability. It involves strategic investments made by the government aimed at enhancing various aspects of the post-harvest process. This includes the establishment and improvement of essential facilities such as cold storage units, packaging facilities and efficient transportation networks.

- Cold Storage Units: These are crucial for preserving perishable agricultural produce after harvest. Cold storage units maintain specific temperature and humidity levels, prolonging the shelf life of products and preventing wastage. By investing in these facilities, the government can help farmers store their produce effectively, ensuring a steady supply of goods even during off-seasons.
- Packaging Facilities: Effective and appropriate packaging is vital for maintaining the quality and freshness of agricultural products during storage and transportation. Investing in modern, efficient packaging facilities ensures that produce is protected from damage and contamination.
- Transportation Networks: Developing a robust transportation network is crucial for timely and efficient distribution of agricultural goods. Well-maintained roads, railways and other transportation infrastructure can significantly reduce transit times, minimizing spoilage and ensuring that produce reaches markets in optimal condition.

b. Skill Development and Training:

Skill development and training in the agricultural sector, specifically focusing on educating farmers in various aspects of modern post-harvest management, value addition processes and market dynamics. Here's an elaboration of these ideas:

I. Skill Development and Training Importance: Skill development and training are crucial aspects of empowering farmers and enhancing their productivity and profitability in the agricultural sector. Providing training programs and workshops ensures that farmers are equipped with the knowledge and skills necessary to optimize their farming practices and make informed decisions throughout the agricultural cycle.

II. Targeted Training Programs: The training programs should be designed in a targeted manner, tailored to educate farmers on specific areas of expertise. In this case, the focus is on three essential domains:

- Modern Post-Harvest Management Techniques: Farmers need to understand and implement modern post-harvest management techniques. This includes knowledge about efficient handling, storage and preservation of harvested crops to minimize losses and maintain quality.
- Value Addition Processes: Educating farmers about value addition processes is vital for them to enhance the value and marketability of their agricultural products. Value addition involves transforming raw agricultural products into higher-value products through processing, packaging, or other means.
- Market Dynamics Awareness: Familiarity with market dynamics is essential for farmers to make informed decisions regarding when, where and how to sell their produce. This includes understanding market demand, pricing mechanisms, consumer preferences and distribution channels.

III. Implementation of Training Programs: Organizing and implementing these training programs and workshops should involve collaboration between agricultural organizations, government agencies, research institutions and experienced professionals. Workshops should be interactive, providing hands-on experience and demonstrations to enhance learning.

IV. Continuous Learning and Updates: Learning in the agricultural sector should be an ongoing process. Farmers should be encouraged to stay updated with the latest advancements, technologies and market trends through regular workshops, seminars, online courses and knowledge-sharing platforms.

c. Financial Support:

The importance of financial support for farmers, particularly in the form of affordable credit and loan schemes from financial institutions. This support is intended to facilitate farmers in investing in post-harvest infrastructure and value addition ventures.

- Financial Support for Farmers: Financial support is essential for farmers to enhance their agricultural activities and improve productivity. This support can come in various forms, including loans, credit, grants, or subsidies
- Affordable Credit and Loan Schemes: The financial institutions are encouraged to design credit and loan schemes that are accessible and affordable for farmers. This affordability is crucial to ensure that farmers can easily access the funds they need without being burdened by high-interest rates or complex repayment terms.
- Investing in Post-Harvest Infrastructure: Post-harvest infrastructure involves facilities and equipment used for processing, storing and distributing agricultural produce after the harvest.
- Value Addition Ventures: Value addition involves enhancing the value of raw agricultural products through various processes like processing, packaging, branding and marketing. Financial support enables farmers to venture into value addition, creating more diverse and higher-value products, which can fetch better prices in the market.

d. Market Linkages:

Market linkages establish direct connections between farmers and consumers, bypassing intermediaries like middlemen or distributors. This enables farmers to set fair prices for their produce based on production costs and market demand. Farmer markets and cooperatives are essential in facilitating these linkages. Farmer markets, physical or virtual spaces, allow farmers to sell fresh produce directly to consumers, fostering transparency and trust. Cooperatives, collective farmer organizations, amplify bargaining power and ensure fair compensation when dealing with buyers.Eliminating middlemen benefits all parties involved and promotes sustainable agriculture by reducing wastage and improving profit distribution. It fosters a sense of community and a direct producer-consumer relationship. Establishing market linkages is a strategic step towards a fair and sustainable agricultural system.Using

appropriate technologies in this process can result in value-added products, reducing post-harvest losses, increasing shelf life and boosting income. Minor fruits like aonla, pumpkin, wood apple and Bael, rich in nutrition and medicinal value, can be cultivated with ease, even in less attended lands. Cultivating and improving these minor crops, focusing on maximizing utilization, is highly beneficial. Researchers have made strides in developing value-added products from underutilized fruits, highlighting the potential to create diverse products and enhance the nutritional and socio-economic status of vulnerable communities in India. This supports the demand for new, nutritious and appealing food products and encourages efforts to promote these products for export.

Comment [U5]: Conclusion paragraph can be added

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