

REPORT ON
WEBINAR SERIES ON TROPICAL FRUITS

SAPODILLA

14 APRIL 2026



THEME: The Prospects for Expanding
Sapodilla Production and Markets –
Opportunities and Challenges



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1.0. EXECUTIVE SUMMARY

Sapodilla, also known in different countries as sapota, safeda, chiku or sawo, is a sweet tropical fruit with a long history of cultivation in Asia and other tropical regions. Although it remains a minor or underutilized fruit in many countries, sapodilla has important potential for wider production, processing and market development. Its sweet taste, soft texture, high energy value and consumer familiarity in several producing countries provide a strong basis for expanding domestic consumption and developing niche markets.

The International Tropical Fruits Network (TFNet) organized a webinar entitled “The Prospects for Expanding Sapodilla Production and Markets – Opportunities and Challenges” on Tuesday, 14 April 2026, at 2.30 p.m. Kuala Lumpur time through the Zoom platform. The webinar was part of TFNet’s continuing series on minor tropical fruits and aimed to promote knowledge exchange on production, market opportunities, research needs and development pathways for fruits with untapped commercial potential. The session marked a peak attendance of 85 participants from 10 countries including Australia, Bangladesh, Brunei, India, Indonesia, Malaysia, Myanmar, Philippines, USA, and Vietnam.

The webinar brought together experts from India, Indonesia, Bangladesh and Viet Nam to share country experiences on sapodilla production and market expansion. The speakers were Dr. Yatin Tandel from Navsari Agricultural University, India; Prof. Dr. Darda Efendi from IPB University, Indonesia; Dr. Most. Marufa Khatun from the Bangladesh Agricultural Research Institute (BARI); and Dr. Nguyen Thi Kim Thoa from the Southern Horticultural Research Institute (SOFRI), Viet Nam. The session was moderated by Mr. Yacob Ahmad of TFNet.

The objectives of the webinar were to:

1. To facilitate information sharing among tropical fruit researchers, producers, processors and exporters on the current production, processed products, market trends and challenges in developing the fruit in key producing countries including India, Bangladesh, Vietnam and Indonesia.
2. To share information among stakeholders on the various initiatives that can enhance sapodilla production and markets, such as varietal development, best farm practices, postharvest management, research and development focus and supportive policies.
3. To discuss initiatives in enhancing the visibility of sapodilla in global markets.
4. To establish networking ties among sapodilla and other tropical fruits stakeholders.

The country presentations showed that sapodilla is grown under diverse production systems, ranging from backyard and home garden cultivation to more organized orchards and cooperative marketing systems. In India, sapodilla has a strong production base and is cultivated in several states, particularly Andhra Pradesh, Gujarat, Maharashtra, Karnataka and Tamil Nadu. However, cultivated area has declined over time, and most production continues to serve the domestic market. Exports remain limited due to perishability and inadequate cold chain infrastructure.

In Indonesia, sapodilla is widely distributed but remains largely a backyard and mixed-farming crop. It has high genetic and phenotypic diversity, but this also results in inconsistent fruit size, shape and quality. Production has shown moderate growth, and the fruit occupies a stable niche in domestic markets, although there is no established export chain.

In Bangladesh, sapodilla is cultivated mainly in the southern belt and is considered an off-season fruit available during the winter period. The crop has potential for wider cultivation, including in saline-prone coastal areas and urban rooftop gardens. However, production area and output have remained relatively stable, and development is constrained by weak market systems, high perishability and lack of organized processing. In Viet Nam, sapodilla is cultivated in selected production areas, including the Mekong Delta. The crop is valued in domestic markets, and improved varieties such as Mexico have gained interest due to fruit size and market appeal. Future development is linked to improved production models, integrated pest management, certification, branding and post-harvest technologies.

Across all countries, the most common constraints were the short shelf life of sapodilla, post-harvest losses, weak cold chain systems, limited processing, inconsistent fruit quality, lack of uniform planting material and weak market organization. In some countries, old orchards, labour shortages, limited mechanization, pest problems, fragmented smallholder production and competition from higher-value fruits also affect the sector. Post-harvest management emerged as the most critical area requiring attention. Sapodilla is highly perishable, has a soft texture and is easily damaged during harvesting, transport and marketing. Its short shelf-life limits long-distance trade and export potential. Improved harvesting, latex removal, grading, packaging, cold storage, modified atmosphere packaging, transport systems and shelf-life extension technologies are therefore central to future development.

The webinar also highlighted important opportunities. These include varietal selection, clonal propagation, development of improved planting materials, rejuvenation of old orchards, promotion of good agricultural practices, integrated pest management, improved market linkages, stronger branding and value addition. Processed products such as jam, jelly, fruit bars, dehydrated slices, powder, milkshakes, desserts, syrups, fermented beverages and other functional food products could help reduce losses and extend market reach.

The panel discussion confirmed that sapodilla has positive prospects, but its development should not rely only on increasing production volume. A more strategic approach is required, focusing on quality, value, shelf-life extension, market positioning and coordinated value-chain development. The fruit could be repositioned from a traditional or backyard fruit to a nutritious, functional and commercially viable tropical fruit, if research, post-harvest systems, quality assurance, branding and market access are strengthened.

Overall, the webinar concluded that sapodilla has considerable potential for market growth, value-added processing and selected export markets, however realizing this potential will require coordinated efforts among researchers, extension agencies, farmer groups, cooperatives, private sector actors and regional networks. TFNet can play an important role as a platform for continued exchange of information, technical expertise and collaboration among countries with experience in sapodilla development.

2.0. PRESENTATION SUMMARY

2.1. INTRODUCTION

In his opening remarks, Mr. Muhamed Salim bin Mohd Ali, Chief Executive Officer of TFNet, welcomed the speakers and participants and noted that the webinar formed part of TFNet's continuing focus on minor tropical fruits with underdeveloped production and market potential. Sapodilla was selected because of its potential for wider production and market development, particularly in countries where the fruit is already familiar to consumers but has not yet been developed into a strong commercial crop.

The session provided an opportunity for experts from India, Indonesia, Bangladesh and Viet Nam to share country experiences and discuss common challenges. The presentations covered production status, agroecological requirements, varieties, cultivation practices, pest and disease management, post-harvest handling, processing, market systems and future development strategies.

2.2. PRODUCTION, MARKET AND EXPORT

Sapodilla is cultivated in all four countries represented in the webinar, but its level of commercialization varies considerably. In most countries, the fruit is still primarily consumed in domestic markets, with limited export development.

India is one of the major sapodilla-producing countries. The crop is well adapted to warm and humid conditions and is cultivated in several states, including Gujarat, Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu. Gujarat and Maharashtra have a particular advantage because sapodilla flowers and fruits throughout the year in these states. Sapodilla was introduced into India in 1898 in the Gholvad area near Mumbai and has since become established in important production areas.

India's area under sapodilla has declined significantly, from about 160,000 ha in 2010 to approximately 70,000 ha in more recent years. Production has also decreased from 1,424,000 MT in 2010/11 to 858,000 MT in 2024/25, although productivity has been maintained through improved crop management. Andhra Pradesh was identified as a leading producer (280,240 MT in 2024/25) with relatively high productivity (20 MT/ha), while Gujarat has a larger cultivated area (24,620 ha) but lower average productivity (9.8 MT/ha) for the period of 2024/25. Maharashtra is also an important producing

state [95,810 MT in 2024/25], supported by the market recognition of Gholvad Chikoo, a premium, Geographical Indication [GI]-certified fruit cultivated in the Gholvad and Dahanu regions of Maharashtra.

Despite India's strong production base, sapodilla is largely consumed domestically. Exports account for only a very small share of production, estimated at around 0.1–0.2 percent. Major export destinations include the United Arab Emirates, Saudi Arabia, Qatar, Oman and Bahrain. The United Arab Emirates reigns the highest with 523.67 MT exports valued at Rs 406.34 lakh in 2023/24. Export expansion is constrained by the fruit's short shelf life, limited cold chain facilities and low global awareness.

In Indonesia, sapodilla, known locally as sawo, remains a minor and underutilized fruit crop. It is widely grown across different agroecological zones but mainly in home gardens, mixed farming systems and agroforestry systems. Sapodilla ranked 16th among 21 fruits recorded in national fruit statistics and accounted for about 0.7 percent of total fruit production. Average production was reported at around 160,000 tonnes per year over the previous eight years.

Production in Indonesia is concentrated mainly in Sumatra and Java, which together account for more than 80 percent of national production. Smaller production shares are found in West and East Nusa Tenggara, Kalimantan, Sulawesi, Maluku, Papua and West Papua. Sapodilla has recorded modest growth at the national level, with production increasing by about 16 percent over the previous eight years, equivalent to an average growth of around 2 percent per year. However, production fluctuations were observed across provinces, with asynchronous flowering, irregular fruit set and partial alternate behaviour as factors cited, in addition to climate variability, characteristics of production systems, and pest and diseases.

The Indonesian market is mainly domestic. Sapodilla is sold in traditional markets, supermarkets and, more recently, through e-commerce platforms. Prices vary by market channel, with lower prices in street markets and higher prices in supermarkets and online platforms. However, there is no established export chain, and market integration remains weak. Sapodilla is still generally perceived as a traditional fruit with limited commercial identity.

In Bangladesh, sapodilla is cultivated mainly in the southern belt, including areas such as Khulna, Barisal and Chattogram. It is considered an off-season fruit and is usually available during the winter period, when many other local fruits are less available. In 2024, annual production was reported at approximately 6,800 metric tonnes from an area of 672 ha. The area and production have remained relatively stable in recent years, although demand is increasing.

The main challenge in Bangladesh is not lack of consumer interest, but weak market organization and the perishable nature of the fruit. Sapodilla is sold mainly in local markets, village markets, traditional wholesale points, bus terminals, launch terminals and roadside bazaars. It is also available in urban centres such as Dhaka and Chattogram and through some online platforms. However, systematic market channels, storage

facilities and processing industries are still limited.

In Viet Nam, sapodilla is cultivated in selected production areas in both northern and southern regions. In 2024, the total sapodilla area was reported at about 5,160 ha, with production of approximately 86,084 tonnes and an average yield of around 19 tonnes per ha. Important production areas include provinces in the Mekong Delta such as Dong Thap, Tra Vinh and Tien Giang.

Sapodilla in Viet Nam is mainly consumed in the domestic market and is sold through traditional markets, fruit shops and supermarket chains. The Mexico variety is increasingly found in supermarkets and urban markets because of its larger fruit size and attractive appearance. Export development remains limited and requires further work on quality standards, certification, branding and supply chain management.

2.3 CULTIVARS, PLANTING SYSTEMS AND FIELD PRACTICES

Sapodilla varieties differ across countries, reflecting local selection, consumer preferences and production history. However, a common issue is the need for improved, uniform and true-to-type planting materials to support commercial production.

In India, the dominant variety is Kalipatti, which is widely preferred for its taste [sweet and soft pulp] and quality. Other varieties include Cricket Ball [large sized fruits with granular pulp], DHS-1, DHS-2 [both high-yielding varieties for better productivity] and PKM selections. Gujarat also has several local varieties, including Bhuripatti, Pilipatti, Dholka Diwani, Jhumakhia and Cricket Ball. Gandevi Murabba [officially released as Gujarat Sapota-1] is a dwarf, high-yielding variety developed by Navsari Agricultural University in Gujarat, India. It produces sweeter, heavier fruits with an extended shelf-life compared to traditional varieties and has been identified as a variety with potential for processing. The geographical indication recognition for Amalsad Chikoo, based on the Kalipatti variety, was also highlighted as a positive development for branding and market identity.

In Indonesia, twelve sapodilla varieties have been released including Lokal Sumpu, Sukatali – ST 1, Plampang, Asahan, Sedan, Kota Bima and more recently (in 2023) the Sabad variety. However, sapodilla in Indonesia shows high genetic and phenotypic diversity in the field. This diversity results largely from seed-based propagation over a long period. While this provides a valuable genetic resource for future selection, it also creates problems of inconsistency in fruit size, shape, taste and quality. Greater attention is needed to elite genotype selection and clonal propagation.

In Bangladesh, the Bangladesh Agricultural Research Institute has released three improved varieties: BARI Safeda-1, BARI Safeda-2 and BARI Safeda-3. These are high-yielding varieties suitable for cultivation in different parts of the country. BARI Safeda-1 and BARI Safeda-2 have yield potential of about 20–25 tonnes per ha, while BARI Safeda-3 can yield about 30–35 tonnes per ha. The varieties differ in sweetness, seed

number, fruit size and edible portion.

In Viet Nam, common varieties in the northern region include Xuan Dinh and Thanh Ha. In the southern region, Mac Bac and Mexico are important. The Mexico variety is particularly considered a premium fruit due to its larger fruit size, ranging from about 300 to 400 g, as well as its soft flesh, sweetness and aroma.

Propagation systems vary by country. In Bangladesh, cleft grafting is commonly used to produce true-to-type planting materials, using khirni (*Manilkara hexandra*) rootstock. Grafted trees begin bearing in about three years, compared with five to ten years for seedling-grown trees. In India, approach grafting and softwood grafting are used, with softwood grafting recommended for faster multiplication of planting material. In Indonesia, seed-based propagation remains common, contributing to lack of uniformity. Greater use of clonal propagation was identified as a priority.

Planting systems also vary according to country and production conditions. In Viet Nam, sapodilla is commonly planted at spacings such as 6 m × 8 m or 7 m × 7 m, with an average density of 200 trees per hectare. In Bangladesh, 7 m × 7 m spacing is common, with square or rectangular planting in plain areas and contour planting in hilly areas. In India, older orchards may have very wide spacing, with large canopies that are difficult to manage and harvest. Rejuvenation and canopy management are therefore important in older production areas.

Sapodilla grows well in warm tropical and subtropical conditions. It prefers fertile, well-drained soils and sufficient sunlight. Bangladesh reported that the crop performs well in sandy loam and loamy soils, with annual rainfall of 1,250–2,500 mm and temperatures of about 11–34°C. Viet Nam noted that sapodilla grows best at temperatures of about 25–30°C and can tolerate some adverse conditions, including drought, salinity and wind. These characteristics suggest that sapodilla may have potential in selected areas affected by climate-related stresses.

Nutrient and water management are important for productivity. Viet Nam reported the use of mineral fertilizers, organic manure and biological inputs such as *Trichoderma* to improve soil health and reduce soil-borne diseases. Bangladesh emphasized the application of organic and inorganic fertilizers according to tree age, with fertilizer placed around the canopy in a ring system. Irrigation is especially important during dry periods, while drainage is required during rainy periods to prevent waterlogging.

Canopy management and pruning were highlighted across countries. In Bangladesh, training and pruning are recommended two to three years after planting, retaining four to five strong branches and removing dead, diseased, weak or excess branches annually. In Viet Nam, pruning is used to maintain tree structure, improve light penetration and remove unwanted branches after harvest. In India, old orchards with large canopies require pruning and rejuvenation to improve harvesting efficiency and productivity. Pruning is performed based on variety as well

2.4. PESTS AND DISEASES, PHYSIOLOGICAL DISORDERS

Pests and diseases affect sapodilla production and fruit quality, although the severity differs by country. Integrated pest management was emphasized as an important approach, especially where the crop is being developed for higher-value markets.

In Viet Nam, fruit fly was identified as one of the most damaging pests, with high infestation levels if not properly controlled. Other important pests include fruit borer, white mealybug, mealybugs and stem borer. These pests reduce fruit quality, lower marketability and can cause yield losses. Integrated pest management approaches promoted in Viet Nam include orchard sanitation, canopy pruning, fruit bagging, balanced fertilization, use of organic matter, pest monitoring and selective control measures when needed. Demonstration models on Mac Bac and Mexico varieties from 2023 to 2025 showed that IPM can reduce pesticide use, improve fruit safety and enhance fruit quality.

In Bangladesh, leaf spot, sooty mould, stem borer and leaf miner were identified as concerns. Sooty mould develops on insect secretions and reduces photosynthesis by covering the leaf surface, while stem borer damages stems by feeding beneath the bark. Leaf miner larvae feed on young leaves and create irregular trails that can lead to drying and leaf fall. Red leaf spot disease was also identified as an important challenge in some areas. Regular monitoring, orchard sanitation and appropriate control measures are needed to reduce damage.

In India, pests such as bud borer, seed borer and chiku moth were mentioned as affecting yield and quality. Dr. Tandel emphasized the need for improved pest monitoring and integrated management, especially if sapodilla is to be promoted for export or higher-value markets.

In Indonesia, pests and diseases were not described as being as severe as in some major fruit crops, but they remain part of the broader production constraints. The more significant challenges in Indonesia relate to irregular fruiting, lack of uniformity, old trees, low-input production systems and post-harvest deterioration.

Across the presentations, it was clear that crop health must be addressed together with orchard management, varietal improvement and post-harvest quality. Poorly managed pests and diseases reduce fruit quality and undermine market access, especially for supermarkets, export channels and certified markets.

2.5. POSTHARVEST MANAGEMENT, QUALITY AND STANDARDS

Post-harvest management was the most consistent and significant theme across the webinar. Sapodilla is highly perishable, has soft flesh and thin skin, and is easily damaged during harvest, handling, transport and marketing. These characteristics limit long-distance trade and export potential.

In India, post-harvest losses were estimated at about 20–40 percent due to short shelf life and perishability. Latex adherence on the fruit surface after harvest was identified as an important quality problem because it reduces fruit appearance and market acceptability. Research conducted by Dr. Tandel showed that dipping harvested fruit in 1 percent calcium hydroxide solution for five minutes helped remove latex and improve appearance. The calcium component may also strengthen the fruit skin and extend shelf life.

Pre-cooling was also studied in India. Pre-cooling at 10°C for eight hours helped remove field heat, after which fruits were packed in perforated polythene bags and placed in boxes. Storage trials at 10°C, 12°C and 14°C indicated that 12°C was more suitable, while some fruit stored at 10°C developed chilling injury. Storage at temperatures above 12°C was therefore recommended.

India also reported improvements in post-harvest handling through cooperative marketing systems. In South Gujarat, cooperative societies have introduced automated grading, sorting and packing systems. Such initiatives can improve market presentation, reduce losses and provide better price differentiation based on grade and quality.

In Indonesia, sapodilla's climacteric ripening behaviour was emphasized as a key limitation. During ripening, ethylene production and respiration increase rapidly, causing the fruit to soften quickly. The fruit is also sensitive to mechanical injury and chilling injury. Consumers and traders often press fruits to check maturity, causing bruising and accelerating deterioration. These characteristics make sapodilla difficult to manage through modern logistics systems unless soft-handling technologies and improved packaging are developed.

In Bangladesh, sapodilla has a storage life of only about four to seven days. Mature fruits may ripen within six to ten days when stored under straw or sacks. The presentation identified maturity indicators such as change in skin colour, reduction of the powdery coating, thinning of latex and natural detachment of the style at the fruit apex. Careful harvesting by hand or with appropriate harvesting tools was recommended to avoid bruising and splitting.

In Viet Nam, fruits are harvested at the appropriate maturity stage, cleaned, sorted and packed to reduce mechanical damage. Packaging materials such as baskets, cartons and cushioning materials are used during transport and storage. However, post-harvest losses during handling and marketing remain relatively high, at around 15–20 percent. Improved packaging, cold storage, modified atmosphere packaging and transport systems were identified as priorities.

Quality standards and certification were also discussed. Viet Nam emphasized the development of certified production areas, quality certification and branding to improve market access. India highlighted the importance of geographical indication recognition, including Amalsad Chikoo and Gholvad Chikoo, as tools for strengthening identity and market positioning. Indonesia highlighted the need for market identity and rebranding, while Bangladesh emphasized better packaging, organized markets and processing systems.

2.6. PROCESSING AND VALUE ADDITION

Processing and value addition were identified as important strategies to reduce losses, increase farm income and expand consumer options. Since sapodilla is highly perishable, processed products could help manage market gluts and reduce dependence on the fresh fruit market.

In Bangladesh, sapodilla is consumed fresh and is also used in juice, halwa, milkshakes and sweets such as burfi. Potential value-added products include ready-to-serve drinks, fruit bars, jams, jellies and fermented beverages. Processing could reduce losses and create new opportunities for entrepreneurs and private companies.

In India, value addition was highlighted as a major opportunity, particularly in high-production areas such as South Gujarat where fruits may fall under the canopy and remain unused during periods of surplus. Sapodilla could be processed into dehydrated slices, powder, smoothies, desserts and health products. By-products from peel, seeds and seed kernels may also have potential for further utilization.

In Indonesia, research and small-scale initiatives have explored processed products such as puddings, jams, chips, syrups, probiotic drinks and juices. Studies have also examined the phytochemical and functional properties of sapodilla, including antimicrobial activity, extracts, cosmetic applications and possible effects on blood glucose. These areas offer opportunities to position sapodilla beyond fresh fruit consumption.

In Viet Nam, processing opportunities were discussed in relation to post-harvest management and market diversification. Processed products such as jam, jelly, fruit bars, milkshakes and desserts could help extend shelf life and increase the commercial value of the fruit.

A key point across all countries was that most processing activities remain limited, small-scale or at research level. To develop commercial-scale processing, stronger links are needed among farmers, processors, research institutions, entrepreneurs and market actors.

2.7. RESEARCH AND DEVELOPMENT PRIORITIES

The webinar identified several common research and development priorities.

1. Varietal improvement and selection are needed. India's reliance on Kalipatti, Indonesia's high variability from seed-based propagation, Bangladesh's need for further development of improved varieties, and Viet Nam's interest in larger and better-quality varieties all point to the need for cultivar development and evaluation.
2. Planting material systems must be strengthened. Clonal propagation, grafting and certification of planting materials are important to ensure uniformity, early bearing and consistent quality. Indonesia requires stronger clonal propagation systems, while Bangladesh and India already use grafting but need to expand quality planting material production.

3. Post-harvest research is essential. Shelf-life extension, latex removal, pre-cooling, modified atmosphere packaging, cold storage, transport systems, edible coatings, maturity indexing and soft-handling technologies were all identified as important areas.
4. Pest and disease management requires further work, particularly integrated approaches that reduce chemical reliance and improve fruit safety. Viet Nam's IPM demonstrations provide a useful model that could be adapted in other countries.
5. Processing and value addition require more applied research and commercialization support. Research should move beyond laboratory-scale trials towards commercially viable products, packaging, business models and market testing.
6. Market research and branding are needed. Sapodilla has potential in urban markets, diaspora markets, health-conscious consumer segments and niche premium markets. However, these opportunities require stronger product identity, consumer awareness, quality standards and supply chain organization.

2.8. CHALLENGES IN SAPODILLA PRODUCTION AND MARKET EXPANSION

The presentations and panel discussion identified several common challenges:

- a. Perishability and short shelf life
Sapodilla is highly perishable and easily damaged. This limits long-distance transport, export potential and modern retail development. Post-harvest losses are high in several countries.
- b. Inadequate post-harvest infrastructure
Cold chain facilities, grading systems, packaging technologies, transport systems and storage facilities remain insufficient, particularly in smallholder and traditional market systems.
- c. Weak market organization
In many countries, sapodilla is sold through traditional or fragmented market channels. Farmers are often not well organized, and linkages between producers, traders, processors and retailers remain weak.
- d. Limited processing and value addition
Although many processed products are possible, commercial-scale processing is still limited. This reduces opportunities to manage surplus production and extend market availability.
- e. Non-uniform fruit quality
Seed-based propagation, genetic diversity, mixed varieties and lack of clonal planting materials can result in inconsistent fruit size, shape, taste and quality, especially in Indonesia and other less organized production systems.

- f. **Narrow varietal base**
In India, heavy reliance on Kalipatti creates vulnerability if pest or disease problems affect the dominant variety. Varietal diversification and improvement are needed.
- g. **Old orchards and low productivity**
Older orchards with large canopies and wide spacing, particularly in parts of India, are difficult to manage and harvest. Rejuvenation and canopy management are required.
- h. **Labour shortages**
In areas with year-round production, such as Gujarat and Maharashtra, labour shortages affect harvesting and orchard management.
- i. **Pest and disease problems**
Fruit fly, fruit borer, mealybugs, stem borer, leaf miner, bud borer, seed borer and other pests can reduce fruit quality and yield.
- j. **Competition from higher-value crops**
In some countries, farmers may shift land from sapodilla to higher-value fruits, such as durian, where market returns are more attractive.
- k. **Weak branding and consumer positioning**
Sapodilla is often viewed as a traditional or backyard fruit. Stronger branding is needed to position it as a nutritious, high-value and commercially attractive tropical fruit.

3.0. QUESTION AND ANSWER SESSION

The panel discussion was moderated by Mr. Yacob Ahmad of TFNet. The panellists were Dr. Yatin Tandel, Prof. Dr. Darda Efendi, Dr. Most. Marufa Khatun and Dr. Nguyen Thi Kim Thoa. The discussion began with technical questions from participants, including questions on alternate bearing, pruning and yield stability.

1. The panellists noted that alternate bearing is not widely observed as a major constraint in sapodilla compared with crops such as mango. However, yield fluctuations may still occur due to climate, tree physiology, management practices and genetic factors. Prof. Dr. Darda Efendi noted that the response of the apical meristem to changes in the carbon–nitrogen ratio may influence flowering and fruiting behaviour, although further research is required.
2. Pruning was also discussed. Dr. Yatin Tandel noted that pruning in India is commonly carried out after fruit harvest, particularly around June and July. This helps avoid disruption to flowering and fruiting. The panel agreed that pruning recommendations should be adapted to local conditions, variety and production system. In systems where sapodilla flowers and fruits continuously, heavy pruning may not always be necessary.

The moderator then invited panellists to comment on whether they expected improvement in sapodilla production and demand in their respective countries.

1. Dr. Tandel expressed optimism for India, noting the need for varietal improvement, post-harvest management, cold chain development, value addition and shelf-life extension. He also noted that India's production base and domestic demand provide a strong platform for further development.
2. Prof. Dr. Darda Efendi stated that Indonesia has positive prospects, with production and demand showing gradual growth. However, he emphasized that the crop remains largely non-commercial and backyard-based. The main priorities are cultivar selection, clonal propagation, post-harvest technologies, product development and rebranding of sapodilla as a functional fruit rather than only a traditional fruit.
3. Dr. Most. Marufa Khatun noted that sapodilla has potential for gradual expansion in Bangladesh, although land availability is limited. She emphasized that the main constraints are harvesting, post-harvest losses, weak markets and absence of cold chain facilities. Improved handling, packaging, storage, processing and value-added products are needed to support market development.
4. Dr. Nguyen Thi Kim Thoa stated that sapodilla continues to have demand in Viet Nam and remains of interest to farmers. Improved varieties such as Mexico have performed well in some areas. She linked future development to good agricultural practices, certified production areas, post-harvest technologies, branding and expansion into domestic and export markets.

The panel also discussed research and market priorities. There was broad agreement that post-harvest management is the most urgent area for intervention. At the same time, panellists emphasized that production improvements must be matched with viable market strategies. Sapodilla could be promoted more strongly in urban markets, health-conscious markets and diaspora markets. Its sweetness, soft texture and nutritional attributes could support branding, but consistent quality, certification and reliable supply are required.

The moderator referred to successful fruit commercialization examples, such as kiwifruit, to illustrate how coordinated research, branding, quality management and market development can transform the prospects of a fruit crop. The discussion suggested that sapodilla could benefit from a similar approach, if production systems, quality standards and market promotion are strengthened.

4.0. CLOSING REMARKS

In his closing remarks, Mr. Muhamed Salim bin Mohd Ali, Chief Executive Officer of TFNet, thanked the speakers and participants for their contributions. He noted that the webinar had generated useful country experiences and practical insights on sapodilla production, cultivation practices and market prospects. He emphasized the importance of continued knowledge exchange among countries, especially between those with

established experience in sapodilla cultivation and those interested in developing the crop further.

He also highlighted the value of maintaining active networks for sharing expertise, innovations and collaboration opportunities. The webinar demonstrated that sapodilla has potential for wider development, but that this requires continued collaboration among researchers, growers, market actors and institutions.

5.0. CONCLUSION AND WAY FORWARD

The webinar confirmed that sapodilla remains a minor tropical fruit with significant potential for wider production, processing and market development. The fruit is already familiar to consumers in several countries and has positive attributes, including sweetness, nutritional value, low acidity and year-round or off-season availability in some production areas.

However, sapodilla development faces several structural constraints. The most important are high perishability, short shelf life, post-harvest losses, weak cold chain systems, inconsistent quality, limited processing, weak branding and fragmented market structures. In several countries, production remains backyard-based or smallholder-based, with limited commercial organization.

Future development should focus on quality and value rather than production volume alone. Key priorities include:

- a. strengthening varietal selection, clonal propagation and quality planting material systems;
- b. improving orchard management, pruning, rejuvenation of old trees, nutrient management and irrigation;
- c. promoting integrated pest management and fruit safety;
- d. developing post-harvest technologies, including improved harvesting, latex removal, grading, packaging, pre-cooling, storage and transport;
- e. expanding processing and value-added product development;
- f. strengthening farmer organization, cooperatives and private sector participation;
- g. developing certified production areas and quality assurance systems;
- h. improving branding and repositioning sapodilla as a nutritious and functional tropical fruit; and
- i. exploring domestic, diaspora, supermarket, e-commerce and selected export market opportunities.

With coordinated research, better planting materials, improved post-harvest systems and stronger market positioning, sapodilla can move beyond its current status as a minor tropical fruit and become a more commercially viable component of tropical fruit value chains.

APPENDIX - PROGRAM

Time	Content
02.30 – 02.40 PM	Introduction Mr. Mohamed Salim Mohd Ali, CEO, International Tropical Fruits Network (TFNet)
02.40 – 04.15 PM	Presentations Moderator: Mr. Yacob Ahmad, International Tropical Fruits Network
	 The Status of Sapodilla Production and Market Expansion in India Dr. Yatin Tandel Professor, Fruit Science Department, ASPEE College of Horticulture, Navsari Agricultural University Navsari, Gujarat, INDIA
	 Developing Sapodilla Production and Market Expansion in Indonesia Prof. Dr. Darda Efendi Center for Tropical Horticultural Studies, IPB University, Bogor Indonesia
	 Production and challenges in Sapodilla production and market expansion in Bangladesh Dr. Most. Marufa Khatun Senior Scientific Officer, Pomology Division, Horticulture Research Center Bangladesh Agricultural Research Institute, Gazipur
	 Sapodilla Production and Market Expansion – the Vietnam Experience Dr. Nguyen Thi Kim Thoa Deputy Head of Plant Protection Div., Southern Horticulture Research Institute (SOFRI) Tien Giang, Vietnam
04.20 – 04.40 PM	Q & A, Panel discussion Moderator: Yacob Ahmad (TFNet) Panel: All speakers Topic: Challenges and opportunities in developing Sapota for the global market

APPENDIX - PRESENTATIONS



1

Introduction

- ❖ **Sapodilla** (*Manilkara sapota*) is an important tropical fruit crop cultivated widely in India
- ❖ It is well adapted to **semi-arid and tropical climatic conditions**
- ❖ The crop is known for its **regular bearing and stable yield**
- ❖ Introduced from tropical America and first planted at **Gholwad** near Mumbai in **1898**.
- ❖ Sapodilla plays a significant role in supporting farmers' income in several states
- ❖ It is well flourished in **Maharashtra, Gujarat, Karnataka and Tamil Nadu**.
- ❖ Increasing demand in domestic markets has enhanced its commercial importance.

2

GLOBAL SCENARIO

- Sapodilla is cultivated in tropical and subtropical regions across the world
- Major producing countries include India, Mexico, Thailand, and the Philippines
- **India is one of the leading producers of sapodilla globally**
- The crop is largely consumed within domestic markets in producing countries
- Export trade remains limited due to its perishable nature and handling constraints

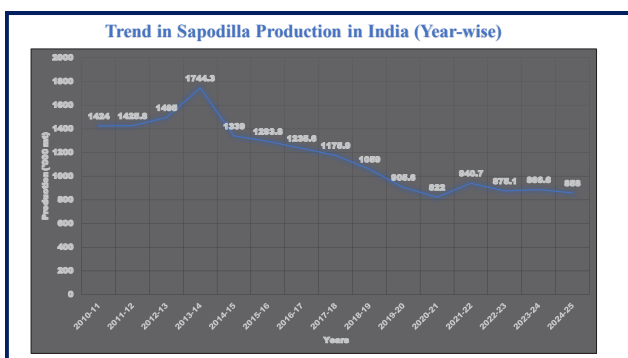
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Area, Production and Productivity of Sapota (Year wise)

YEARS	Area ('000 ha)	Production('000 MT)	Productivity(MT/ha)
2010-11	160.0	1424.0	8.9
2011-12	163.4	1425.8	8.7
2012-13	163.9	1495.0	9.1
2013-14	177.0	1744.3	9.9
2014-15	106.5	1339.0	12.5
2015-16	106.7	1293.8	12.1
2016-17	98.5	1235.6	12.5
2017-18	97.3	1175.9	12.1
2018-19	88.9	1059.0	11.9
2019-20	84.0	905.6	10.8
2020-21	78.6	822.0	10.5
2021-22	77.9	940.7	12.1
2022-23	72.8	875.1	12.0
2023-24	72.1	886.6	12.3
2024-25	70.0	858.0	12.2

Source: Horticulture Statistics Unit -2024, D/o Agriculture & Farmers Welfare

4



5

Area, Production and Productivity of Sapota (State wise)

Sr.no.	States	Sapota (2024-25)		
		Area ('000 ha)	Production ('000 MT)	Productivity (MT/ ha)
1	Andhra Pradesh	14.01	280.24	20.0
2	Chhattisgarh	0.19	0.94	5.1
3	Gujarat	24.62	243.61	9.8
4	Haryana	1.32	12.62	9.6
5	Himachal Pradesh	0.05	0.01	0.3
6	Jammu & Kashmir	0.03	0.03	1.0
	Jharkhand	0.02	0.01	0.4
7	Karnataka	4.64	54.19	11.7
8	Kerala	0.70	3.69	5.2
9	Madhya Pradesh	0.41	7.23	17.6

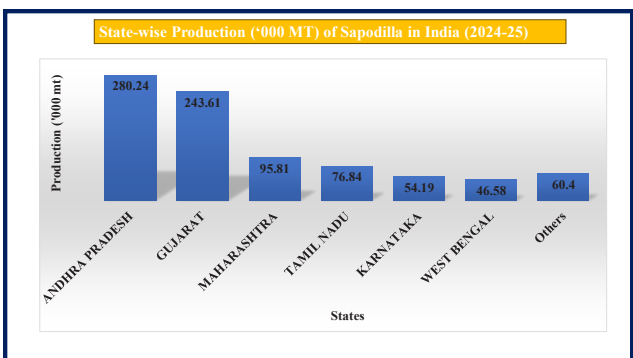
Source: Horticulture Statistics Unit -2024, D/o Agriculture & Farmers Welfare (2024-25)

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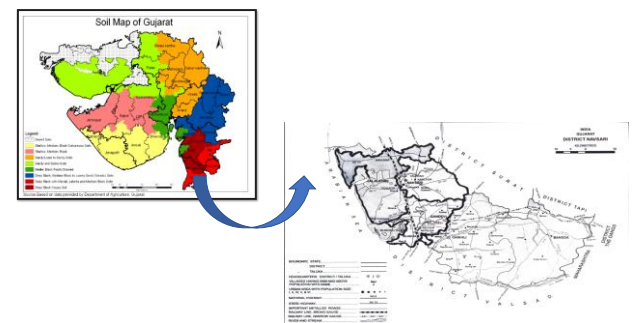
10	Maharashtra	10.74	95.81	8.9
11	Mizoram	0.004	0.02	5.0
12	Odisha	2.40	14.17	5.9
13	Rajasthan	0.04	0.19	4.9
14	Tamil Nadu	5.04	76.84	15.2
15	Telangana	0.99	17.77	17.9
16	Tripura	0.19	2.78	14.4
17	West Bengal	4.45	46.58	10.5
18	Others	0.32	0.94	2.9
	Total	70.16	857.67	12.2

Source: Horticulture Statistics Unit -2024, D/o Agriculture & Farmers Welfare (2024-25)

7



8



9

Major Varieties of Sapodilla in India

- ✓ **Kalipatti** – leading commercial variety with **high quality, sweet and soft pulp**
(Gujarat, Maharashtra, North Karnataka)
- ✓ **Cricket Ball (Calcutta Large)** – large-sized fruits with granular pulp
(Tamil Nadu, Karnataka, Maharashtra, West Bengal)
- ✓ **Pala** – small to medium-sized fruits with high yield potential
(Andhra Pradesh, Tamil Nadu)
- ✓ **PKM-1** – high-yielding improved selection
(Tamil Nadu)
- ✓ **Baramasi** – year-round bearing variety, popular in northern regions
- ✓ **DHS-1 & DHS-2** – high-yielding hybrids developed for better productivity
(Karnataka)



"Kalipatti is the most widely cultivated commercial variety in India"

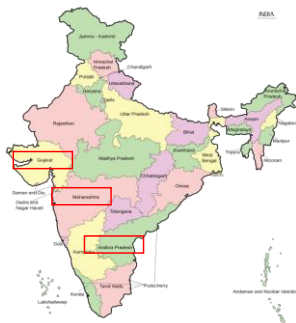
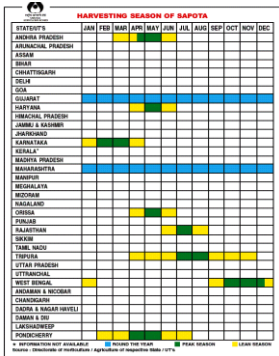
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Dominating Varieties

> 40 to 50 varieties grown all over India

State	Cultivars
Andhra Pradesh	Pala, Kirtibarathi, Cricket Ball, Dwarapudi and Guthi Jonavalasa
Gujarat	Kalipatti, Bhuripatti, Pilipatti, Dholka Diwani, Jhumakhia and Cricket Ball
Maharashtra	Kalipatti, Cricket Ball and Murraba
Karnataka	Kalipatti, Cricket Ball, Kirtibarathi, DBS 1 and DHS 2
Tamil Nadu	Guthi, Kirtibarathi, Pala, CO 1, CO 2 and PKM 1
Others	Cricket Ball, Calcutta Special, Round, Oval and Baramasi

11



12

Price behaviour of Sapodilla in India

- Prices of sapodilla exhibit **distinct seasonal fluctuations**, with a decline during peak harvest due to market glut
- During off-season periods, **limited arrivals lead to relatively higher market prices**
- Significant **spatial variation in prices** is observed across regions due to differences in demand (Delhi, Mumbai) and market access
- Due to its **high perishability (4-5 days)** and **lack of storage facilities**, farmers are often compelled to sell immediately after harvest
- Price realization is influenced by **fruit quality, size, and varietal preference in the market**

Supply Chain and Marketing Channels of Sapodilla in India

- ❖ Sapodilla marketing in India follows **two major channels**:
 - ✓ **Co-operative marketing channel**
 - ✓ **Traditional APMC channel**
- ❖ In regions like South Gujarat, **co-operative marketing dominates**, handling a major share of produce.



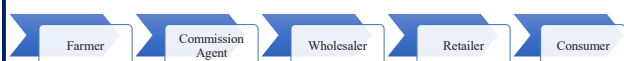
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Co-operative Chain:



Traditional APMC Chain:



- ✓ A large share of produce is transported to **distant urban markets**, indicating strong market linkages
- ✓ The presence of intermediaries results in **lower producer share and higher consumer prices**

Chaudhari et al., (2022)

Export of Sapota (Chiku), Fresh from India

Sl.No.	Country	2020-21		2021-22		2022-23		2023-24	
		Qty	Value	Qty	Value	Qty	Value	Qty	Value
1	United Arab Emirates	373.59	241.12	547.55	355.75	510.42	334.28	523.67	406.34
2	Bahrain	53.7	43.73	142.58	93.05	160.23	113.68	191.88	189.18
3	Canada	21.85	18.93	25.77	33.06	46.47	62.53	89.16	144.69
4	UK	66.01	78.57	99.41	114.88	78.72	104.79	89.29	123.06
5	Qatar	76.61	52.53	78.38	63.74	55.52	50.37	36.42	34.5
6	Saudi Arabia	6.87	5	13.91	13.26	16.42	18.16	23.23	33.01
7	Oman	15.19	13.21	20.08	15.86	37.58	30.42	31.13	26.91
8	Kuwait	14.44	10.93	28	23.68	21.03	19.58	19.23	19.01
9	Germany	9.39	8.52	22.78	21.23	13.61	13.35	18.92	18.97

Qty. in MT and Value in Lakh Rs.

15

16

10	Singapore	4.34	3.47	9.99	11.17	10.46	11.62	11.94	16.37
11	France	1.4	1.39	7.8	7.22	6.34	6.63	7.12	8.13
12	US A	5.95	6.03	0	0	0.1	0.16	3	6.03
13	South Africa	0.78	0.73	1.93	1.53	1.64	2.02	1.88	4.26
14	Australia	1.65	1.47	0.24	0.34	0.37	0.45	2.08	2.69
15	Netherland	2.28	2.44	7.29	7.71	2.45	2.86	1.91	2.56
16	Others	3.44	3.42	17.62	11.77	11.61	10.44	12.37	10.4
	Total	657.5	491.48	1023.33	774.25	972.96	781.34	1063.24	1046.12

Qty. in MT and Value in Lakh Rs.

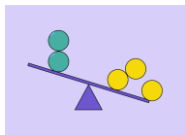
Source: DGCIS

Export Scenario of Sapodilla in India

- India exports sapodilla in **limited quantities compared to major fruits**
- Export is mainly to **neighboring and Middle East countries**
- Major export destinations include:
 - UAE, Saudi Arabia, Qatar, Oman, Bahrain
- Export trend shows **fluctuations over the years** due to:
 - perishability of fruit
 - lack of cold chain infrastructure
 - limited global demand
- Despite lower export volume, sapodilla has **potential in niche ethnic markets**

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18



Constraints in Sapodilla Production and Marketing in India

- ❑ Short shelf life and high perishability leading to **significant post-harvest losses (20–40%)**
- ❑ Inadequate **post-harvest infrastructure and cold chain facilities** in major producing regions
- ❑ **Non-uniform varietal adoption and limited availability of quality planting material**
- ❑ Incidence of **pests and diseases** affecting yield and fruit quality
- ❑ **Irregular bearing and climatic stress** (high temperature) causing yield fluctuations
- ❑ Marketing system dominated by **intermediaries**, reducing farmers' price realization
- ❑ Limited **processing and value addition**, resulting in wastage during peak production

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Strategies to Improve Sapodilla Production and Market Expansion in India

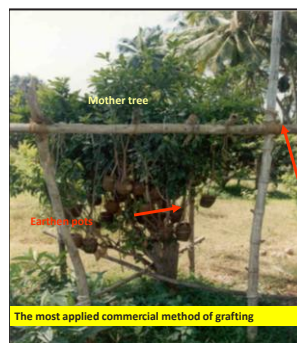
- ✓ Promotion of **region-specific improved varieties** to enhance yield and fruit quality
- ✓ Adoption of **scientific orchard management practices** including pruning, nutrient and pest management
- ✓ Strengthening **post-harvest infrastructure** such as grading, storage, and transportation facilities
- ✓ Development of **cold chain systems** to reduce post-harvest losses and extend shelf life
- ✓ Encouraging **value addition and processing** to reduce dependence on fresh fruit markets
- ✓ Improving **market linkages and direct marketing channels** to reduce intermediaries
- ✓ Enhancing **export competitiveness** through quality standards, certification, and better logistics
- ✓ Support through **government policies, research, and extension services** for commercialization

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22



Old orchards



Pandal making for grafting

Lack of quality planting material

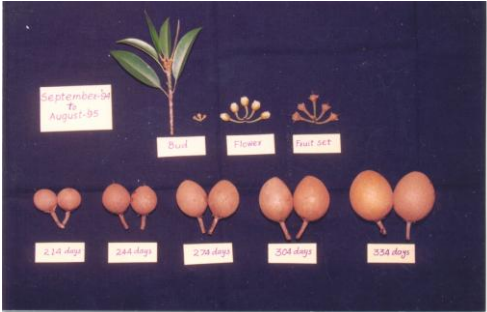
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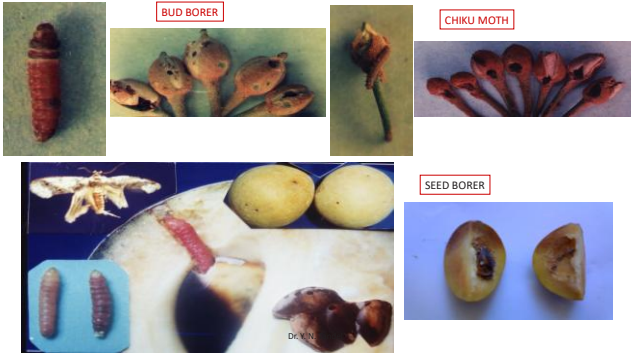


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Different stages of fruit growth from flowering to maturity



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Collection of fruits from farmers

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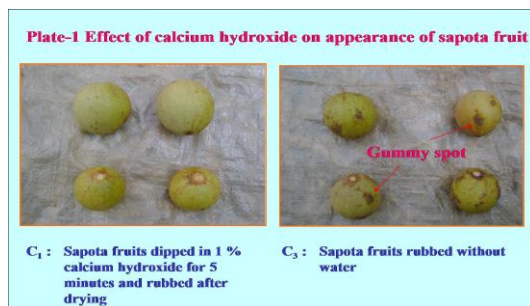


Grading, sorting and packing of fruits

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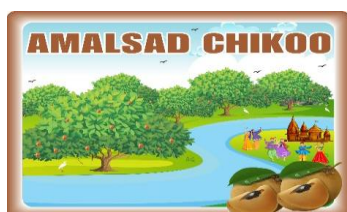


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on March 27, 2025)



Thank you

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International webinar on tropical fruits: Exploring Opportunities in Expanding Production, Consumption, and Market for Sapodilla (*Manilkara zapota*)
Tropical Fruits Network (TFNet), 14 April 2026



An Overview of Sapodilla Production, Cultivation Systems, and Market Development in Indonesia

Darda Efendi

Center for Tropical Horticulture Studies
International Research Institute for Food, Nutrition, Health, and Halal



1

Utilization of Sapodilla Fruit in Indonesia

- Family and Community Food Security**
 - Primarily grown in backyard and mixed gardens
 - Provides direct household consumption
 - Acts as a low-risk, subsistence fruit source
 - Important for nutritional diversity at the local level
- Commercial Fresh Fruit**
 - Sold in traditional/local markets
 - Limited presence in modern retail and supermarkets
 - Characterized by small-scale, fragmented supply chains
 - Market remains niche and regionally focused
- Small-Scale Enterprises and Processed Products**
 - Utilized in home industries and Micro-SMEs
 - Processed into: jam, syrup, chips, beverages and desserts
 - Offers opportunities for value addition and income diversification



2

Variation in form and shape:



3

Released Varieties: PROSEED - Database

Varieties Name	oBrix	Proposer/owner	Release Year	Elevation	Decision letter No.
Lokal Sumpu	n/a	kabupaten tanah datar	1994	Low, Medium, High	580/Kpts/TP.240/7/94
Sukatani - ST1	n/a	BPSB-TPH Jawa Barat	2002	Low, Medium, High	414/Kpts/TP.420/7/2002
Piampang	n/a	BPSB-TPH NTB	2003	n/a	522/Kpts/TP.210/10/2003
Asahan	19.4	Provinsi Sumatera Utara	2005	Low, medium	498/Kpts/SR.120/12/2005
Sedan	17.0	Jawa Tengah	2006	Low, medium	303/Kpts/SR.120/4/2006
Kota Bima	n/a	Kota Bima	2007	Low	172/Kpts/SR.120/3/2007
Tekarang	16.0	Kalimantan Barat	2011	Low	2276/Kpts/SR.120/5/2011
Dangku	16.0	Kabupaten Muara Enim	2013	Low	034/Kpts/SR.120/D.2.7/5/2013
Pusaka	21.0-22.5	Bupati Kaur	2014	Low	026/Kpts/SR.120/D.2.7/3/2014
Kacitas	18.0	Kabupaten Tasikmalaya	2016	Low, Medium, High	040/Kpts/SR.120/D.2.7/4/2016
Sai Wawai	20.1	Provinsi Lampung	2022	n/a	447/Kpts/PV.240/D/XII/2022
Sabad	15.5-24.0	Kabupaten Kediri	2023	Low	73/Kpts/PV.240/D/II/2023

It is important to note that sapodilla in Indonesia exhibits high genetic and phenotypic variability, reflecting its long history of seed-based propagation and adaptation across diverse agroecological conditions.

4

Sapodilla Production Characteristics

- Primarily backyard cultivation;
- Part of agroforestry system; mix farming; urban farming/container gardening
- Biologically valuable but economically underdeveloped
- Multi-functional tree: fruit, shade, windbreak
- Lack of commercial plantation systems with uniform variety, technology, management



5

No.	Fruits	Average (%)	Average (Tonnes)
1	Banana/Plantain	34.1	8.592.275
2	Mango	17.0	3.020.195
3	Pine apple	10.5	2.631.841
4	Mandarin/Tangerine	9.9	2.502.265
5	Durian	5.9	1.486.363
6	Snake Fruit	5.0	1.255.988
7	Papaya	4.4	1.112.218
8	Jackfruit	3.3	819.288
9	Rambutan	3.2	805.158
10	Avocado	2.9	729.562
11	Apple	1.6	399.337
12	Guava	1.5	368.290
13	Mangosteen	1.3	319.741
14	Duku/longkon	1.0	253.579
15	Wax Apple	0.8	193.768
16	Sapodilla	0.7	163.663
17	Bread Fruit	0.6	157.419
18	Carambola	0.5	117.524
19	Soursop	0.5	117.406
20	Pummelo	0.5	115.314
21	Grape	0.1	14.355
Total		100.0	25.175.547

Average Indonesian Fruit Production in the last 8 years (2018-2025)

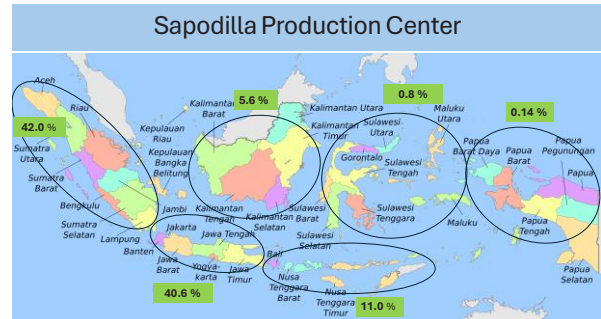
- Sapodilla/Ciku/Sawo:
 - minor/underutilized fruit
 - Has a niche market
 - Relatively stable price
 - Available year-round

6

Widely cultivated throughout Indonesia :

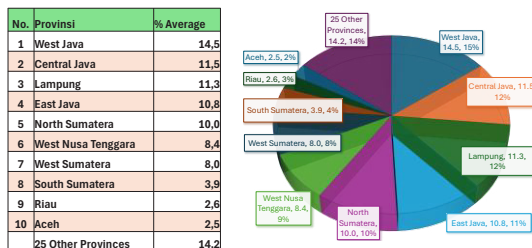
- particularly in **low- to medium-elevation** agroecological zones
- because its **ecophysiology, adaptability, and socio-economic fit** align very well with those environments:
 - Temperature Preference: 22–32°C
 - Stable warm temperatures
 - Minimal cold stress
- High elevations are less suitable due to: lower temperatures slower growth and fruiting
- >80% of production are in Sumatera and Java

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Top Ten Producers of Sapodilla in Indonesia (average 2018-2025)

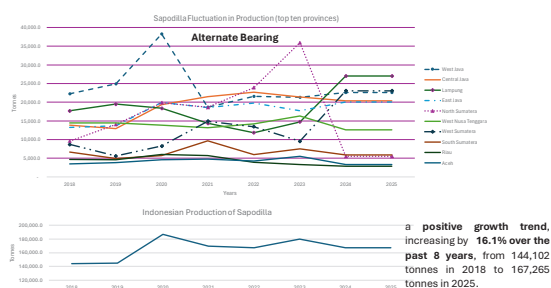


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Top Ten Producer of Sapodilla in Indonesia

No.	Province	2018	2019	2020	2021	2022	2023	2024	2025
1	West Java	22,224.9	24,878.0	38,250.4	18,643.4	21,567.0	21,310.7	22,612.3	22,612.3
2	Central Java	13,820.3	12,926.4	19,294.0	21,462.8	22,014.7	21,378.4	20,384.8	20,384.8
3	Lampung	17,678.8	19,474.8	18,371.4	14,342.7	11,820.1	14,741.8	27,015.1	27,015.1
4	East Java	13,350.7	13,096.6	19,867.8	18,526.5	19,721.5	17,663.9	20,064.7	20,064.7
5	North Sumatra	9,572.2	14,040.1	19,886.3	18,633.5	23,890.1	35,946.2	5,522.3	5,522.3
6	West Nusa Tenggara	14,424.0	14,434.5	13,870.6	13,128.0	14,351.5	16,305.8	12,603.1	12,603.1
7	West Sumatra	8,706.1	5,599.8	8,246.8	14,915.8	13,428.1	9,558.6	23,035.5	23,035.5
8	South Sumatra	6,651.8	4,915.7	5,693.8	9,682.2	5,999.9	7,533.8	5,920.1	5,920.1
9	Riau	4,658.3	4,589.5	6,009.8	5,751.6	3,931.9	3,345.4	2,863.1	2,863.1
10	Aceh	3,514.2	3,784.9	4,614.6	4,732.0	4,245.3	5,510.9	3,311.2	3,311.2

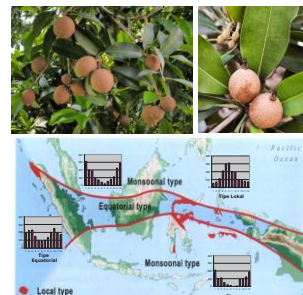
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11

1. Biological Causes (Primary Driver)
 - ✓ **asynchronous flowering**
 - ✓ irregular fruit set
 - ✓ **partial alternate bearing behavior**
 - West Java: spike in 2020 (carbohydrate depletion) → drop in 2021
 - North Sumatra: peak in 2023 → sharp decline in 2024
 - ✓ Continuous but Uneven Flowering
 - Sapodilla flowers year-round
 - Fruit cohorts overlap
 - inconsistent annual yield
 - difficulty in synchronized harvest
2. Climate Variability (Very Strong Influence)
 - ✓ Rainfall variability
 - Excess rain → flower drop, poor pollination
 - Drought → reduced fruit set
 - ✓ Temperature & humidity
 - Affect fruit development and retention
 - North Sumatra spike (2023): favorable climatic window
 - Sharp drop (2024) could indicate extreme weather or stress year

Production fluctuations across provinces:



12

The cause of production fluctuations across provinces:

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3. Production System Characteristics

- ✓ Backyard-Based Cultivation:
 - Mostly non-commercial, scattered trees
 - No uniform orchard management
 - Highly variable yield per tree
 - No standardized pruning, fertilization, irrigation
 - Production depends on individual household decisions
- ✓ Tree Age Structure

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 - No standardized pruning, fertilization, irrigation
 - Production depends on individual household decisions
- ✓ Tree Age Structure
- ✓ Variation in genotypes

4. Pest and Disease Pressure

5. Harvest & Reporting Factors (Often Overlooked)

Under-harvesting, in low-price years:

6. Market-Driven Factors:

- When prices are low: Less harvesting; Less management input
- When prices are favorable: more intensive harvest

7. Land Use Change



13

14

Sapodilla Harvest and Postharvest

- Irregular and Asynchronous Fruiting (Continuous but uneven Fruiting):
 - multiple harvests needed (costly)
 - unstable market supply
- Poor Postharvest Performance:
 - Very short shelf life:
 - Sensitive to chilling injury;
 - rapid softening;
 - susceptible to mechanical damage
 - labor-intensive process of gently rubbing each fruit to remove its rough, scurfy outer surface
- Major barrier to long-distance trade and export market



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Problems on Sapodilla Postharvest Fresh Handling

1. Climacteric Fruit

2. High metabolic activity/respiration

- Fast conversion of starch → sugar

3. Weak skin barrier

- Thin pericarp/peel
- Poor protection against: Mechanical Injury; moisture loss; microbial invasion
- ✗ Postharvest automation

4. Latex residues

- surface contamination
- handling difficulties

5. Extremely short shelf life

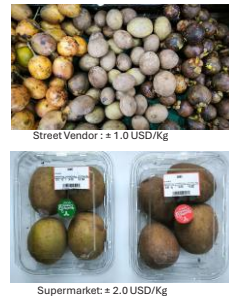
- Short distance distribution
- Short marketing window



16

Market:

- For family consumption/non-commercial
- Limited Market Integration:
 - mostly sold in local/traditional markets and few in supermarkets,
 - few in e-commerce
 - Prices vary across locations/e-commerces
 - no export chains.
- Weak Branding and Consumer Awareness:
 - No strong identity in modern markets
 - Often perceived as: "traditional fruit"; "low-value fruit"
 - Limits demand growth.
- Low Economic Priority for Farmers:
 - Not a primary income crop; Often secondary or supplementary
 - Farmers: invest minimal inputs give low management priority

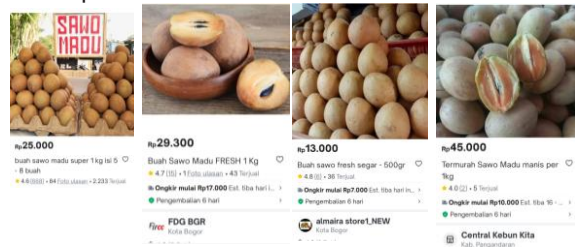


Street Vendor: ± 1.0 USD/Kg

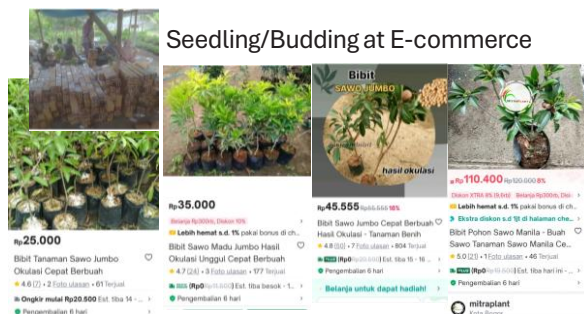
Supermarket: ± 2.0 USD/Kg

17

Sapodilla at E-commerce



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Research and Development:

- Limited Research and Development Focus
 - fewer breeding programs
 - limited varietal improvement
 - minimal postharvest innovation
- Slows technological advancement
- Weak Value Chain Structure
 - Lack of aggregation systems; processing industry; coordinated marketing
 - Results in high postharvest losses



Hidden Potential :

- ✓ High nutritional value
- ✓ Unique flavor (caramel-like)
- ✓ Wide adaptability
- ✓ Climate resilience

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✓ Harvesting:

- Classifying the ripeness level of sapodilla fruits from **texture and color features** using support vector machine (svm) and k-nearest neighbors (k-nn).
- Design and Development of a Portable Sapodilla (*Manilkara zapota*) Fruit Harvester.
- Physicochemical analysis of sapodilla fruit cv. Lilin and Walery during ripening.

✓ Postharvest: Edible Coating

- **Wax concentration and Polyethylene packaging** on storate life of sapodilla.
- **Application of abscisic acid and 1-methylcyclopropene (1-mcp)** to maintain the quality of sapodilla fruit.
- Application of **Edible Coating** from Yam Bean (*Pachyrhizus Erosus*) and Turmeric (*Curcuma Longa*) to Minimize Damage to Sapodilla Fruit.
- Combination of **cassava starch edible coating** and cmc (carboxyl methyl cellulose) to extend the shelf life of sapodilla fruit.
- Effect of **chitosan and storage temperature** on physical characters of sapodilla.
- Effect of **glycerol and beeswax** coating on sapodilla weight loss.

21

Postharvest: Method of Storage

- Study on **Weight Loss and Development of a Respiration Rate** Model of Sapote Fruit Sapote Fruit (*Achras zapota* L.) under **Hypobaric Storage**
- Studies Effect of Oxygen Concentration on **Modified Atmosphere Storage** of Sapodilla Fruit (*Achras zapota* L.)
- Quality of sapodilla on **different storage period**
- Effect of **storage container and temperature**.
- Effect of storage on sapodilla **Vit C content**.
- Response of sapodilla fruit on **dipping in CaCl2 solution**.
- Sapodilla **fruit quality detection by GLCM** and Algoritme support vector machine.
- The effect of addition of **1-methylcyclopropene (1-mcp)** and ethylene on the quality of sapodilla fruits.
- The effect of **ethylene on chilling injury** of sapodilla (*Manilkara zapota*) fruits at various ripeness levels.
- The effect of 1-methylcyclopropene (**1-mcp**) application on chilling injury in sapodilla (*manilkara zapota* L.) fruits of apple and manila varieties.
- **Quality Management** Analysis in Improving the Quality of Sawo Products in Sukatali Village.

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Phytochemical Activities:

- **Antibacterial** activities test of sapodilla fruit extract.
- Effect of sapodilla fruit extract on **E. coli growth**.
- Formulation and activity test of sapodilla **juice on microbe**
- Effectiveness of sapodilla fruit extract on **salmonella typhi**.
- Effectiveness of sapodilla **as larvaside** of aedes aegypti
- Antioxidant activity of sapodilla for **skin care**.
- Formulation of Ethanol Extract Cream Preparation of Sapodilla Fruit Peel (*Manilkara Zapota* L.) and Effectiveness Test as **Skin Moisturizer**.
- **Phytochemical screening** of sapodilla fruit.
- **Phytochemical characterization** and Flavonoid content analysis.
- Effect of sapodilla juice extract on **rat blood glucose**.
- Test of the Inhibitory Power of Leaves, Stem Bark, and Young Manila Sapodilla Fruits (*Manilkara zapota* L.) **Against Escherichia Coli and Staphylococcus Aureus**.
- Testing the **hypoglycemic effect** of ethanol extract of manila sapodilla fruit (*manilkara zapota*) in **male mice** induced with alloxan
- Evaluation of sapodilla extract **mouthwash formula**.
- Characterization of **Simplisia and Phytochemical Screening** of Young Sapodilla Fruit.

23

Processed Product:

- Making **pudding** from sapodilla.
- The making of **jam** from sapodilla fruit.
- Utilization of sapodilla (*Manilkara zapota*) to produce **chips and syrup** in Pawidean village
- The Effect of Adding Manila Sapodilla (*Manilkara Zapota*) Fruit Extract to Yogurt **Ice Cream** in Terms of Overrun, Melting Rate, Viscosity, and Water Content.
- Strategy for economy improving by **diversification processed** product of sapodilla.
- Innovation in **Pudding Processing** from Sapodilla Fruit and Marketing Through **Digital Marketing** in Kemandungan Village, Pemalang.
- Formulation of **Probiotic Drink** from Manila Sapodilla Fruit Juice (*Manilkara zapota* (L.) P. Royen) with Lactobacillus bulgaricus and Streptococcus thermophilus Bacterial Cultures.

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The Potential of Sapodilla in Indonesia

- 1. Large Domestic Market Potential**
 - Indonesia's large population offers strong market opportunities
 - Consumption exists but requires further quantification and market research
- 2. Wide Agroecological Adaptability**
 - Suitable across low- to medium-elevation zones throughout Indonesia
 - Thrives under diverse soil and climate conditions
- 3. Year-Round Production (Non-Seasonal Fruit)**
 - Continuous flowering and fruiting
 - Supports stable and continuous supply
- 4. Safe and Consumer-Friendly Fruit**
 - Mild, non-acidic flavor
 - Suitable for a wide range of consumers, including children and elderly

• 287 M people
• % eat Ciku?

- 5. High Genetic Diversity**
 - Rich genotype and phenotype variation across regions
 - Opportunity for clonal selection and breeding
- 6. Low Input and Climate Resilience**
 - Adapted to low-management systems
 - Suitable for smallholder and sustainable agriculture
- 7. Potential for Value-Added Products**
 - Processing into jam, syrup, dried fruit, beverages
 - Reduces postharvest losses
- 8. Functional and Nutritional Value**
 - Contains polyphenols, antioxidants, and dietary fiber
 - Potential for functional food and nutraceutical markets
- 9. Integration into Agroforestry Systems**
 - Suitable as shade tree and windbreak
 - Supports diversified farming systems
- 10. Opportunities for micro to SME-Based Industry Development**
 - Suitable for rural processing and local entrepreneurship

The Potential of Sapodilla

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Constraints in Developing Sapodilla in Indonesia

- 1. Production System Constraints**
 - Predominantly backyard and scattered cultivation
 - Lack of commercial orchards and standard practices
 - High genetic variability (non-uniform fruit quality)
 - Limited use of improved/clonal planting materials
- 2. Irregular Fruiting and Harvesting**
 - Asynchronous flowering and fruiting
 - Multiple harvest times required
 - Lack of reliable harvesting
 - Alternate bearing
- 3. Postharvest Limitations (Critical Constraint)**
 - Very short shelf life
 - Rapid softening and senescence
 - Highly susceptible to mechanical damage
 - Thin and delicate peel
 - Presence of astringency and latex in immature fruit
 - Labor-intensive handling (manual cleaning/rubbing)

Variation of shape, form, maturity, internal/external qualities

• inconsistent supply
• difficulty in market planning

✗ long-distance trade
✗ modern retail systems

4. Storage and Logistics Constraints

- Sensitive to chilling injury
- Limited cold storage options
- Weak cold chain infrastructure

high postharvest losses

5. Market and Value Chain Constraints

- Weak integration into modern supply chains
- Limited presence in supermarkets/export markets
- Lack of grading, standardization, and branding
- Low consumer awareness in urban markets

6. Economic Constraints

- Low and unstable prices
- Not a priority crop for farmers
- Limited investment and commercialization

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- 7. Research and Development Gaps**
 - Limited breeding and varietal improvement
 - Insufficient work on shelf-life extension technologies
 - Weak linkage between research and industry application
- 8. Lack of Product Diversification at Scale**
 - Processing still limited and small-scale
 - Lack of **industrial-scale value-added products**
 - Underdeveloped branding and market positioning
- 9. Land Use and Competition**
 - oil palm
 - rubber
 - other commercial fruits

Mismatch between its biological characteristics and modern market/logistics systems

Future Strategies for Sapodilla Development:

- Sapodilla development should focus on value, not volume
- To move beyond minor/underutilized fruit and a niche market, development must focus on:
 - value addition
 - postharvest innovation
 - branding
 - value chain integration
- Research and Development are Needed:
 - Postharvest physiology improvement
 - Shelf-life extension technologies
 - Varietal selection and breeding
 - Clonal propagation of elite genotypes

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**Thank You
Terima Kasih**



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Welcome



Bangladesh Agricultural Research Institute, Gazipur
Bangladesh

1

The current status of Sapodilla production and market expansion in Bangladesh



Presented By
Dr. Most. Marufa Khatun
Senior Scientific Officer

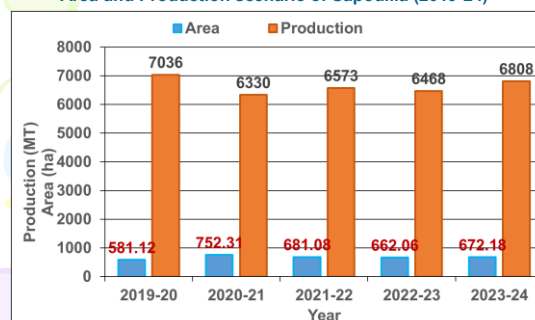
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Introduction

➤ Sapodilla in Bangladesh

3

Area and Production scenario of Sapodilla (2019-24)



Source: BBS

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➤ Nutritional composition

Table 1. Composition of ripe sapota fruit (per 100 g of edible portion)

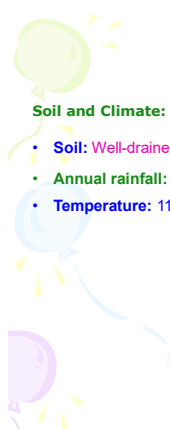
Composition	Amount
Moisture	73.7%
Carbohydrate	21.4 g
Protein	0.7 g
Fat	1.1 g
Calcium	28 mg
Phosphorus	27 mg
Iron	2 mg
Thiamine	0.02 mg
Riboflavin	03 mg
Niacin	0.2 mg
Carotene	97 µg

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➤ Uses:

- Eaten as dessert fruit
- Juice, halwa, and
- Milk shake and sweets (burfi)
- Medicinal value

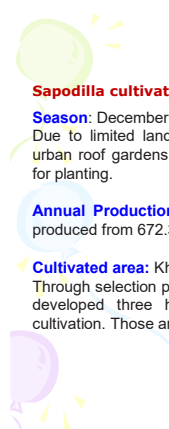
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Soil and Climate:

- **Soil:** Well-drained, sandy loam and loamy soils are the most suitable.
- **Annual rainfall:** 1250-2500 mm are highly suitable.
- **Temperature:** 11°C and 34 ° C.



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Sapodilla cultivation and production in Bangladesh

Season: December to February.

Due to limited land availability, sapodilla is increasingly being grown in urban roof gardens, where half drums or GEO bags are commonly used for planting.

Annual Production: Approximately 6,808 metric tons of sapodilla were produced from 672.36 hectares of land during 2024.

Cultivated area: Khulna, Barisal and Chattogram districts.

Through selection process, Bangladesh Agricultural Research Institute has developed three high-yielding varieties of Sapodilla for farmer-level cultivation. Those are BARI Safeda-1, BARI Safeda-2 and BARI Safeda-3.

BARI Safeda-1



- High yielding, regular bearer
- Bear fruits twice in a year (November and February)
- Sweet (TSS 15.5%)
- Fruit wt. 85g
- Edible portion 95%
- Fruit weight/plant: 102-129 kg
- Yield : 20-25 t/ha

Commercial cultivation:
All over the country

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BARI Safeda-2



- High yielding, bear fruits twice in a year
- Fruits are medium (75g), very sweet (TSS 19%)
- **Fruit wt. 75g**
- **Yield 20-22 t/ha**

Commercial cultivation:
All over the country

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BARI Safeda-3



- High yielding, bear fruits twice in a year
- Harvesting time: October-November and January-February
- Fruits are medium (117g), very juicy, very sweet (TSS 23%), less seeded (edible portion 91%)
- Yield: 194-227 kg/plant (30-35 t/ha)



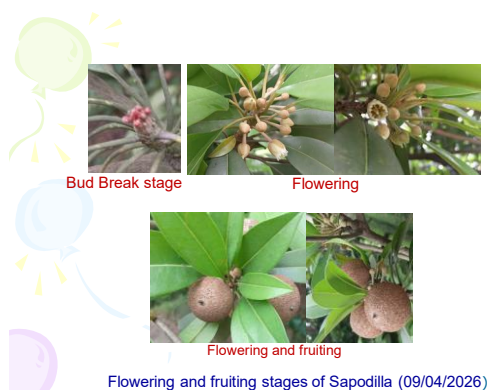
Commercial cultivation:
All over the country

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Sapodilla Orchard

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Pit preparation and spacing

Pit size: 1 m × 1 m × 1 m

Spacing: 7 m × 7 m

Each pit should be filled with a mixture of 25 kg cow dung or organic fertilizer, 300 g TSP, 250 g MoP, and 200 g gypsum. After filling, the pits should be watered thoroughly.

Planting and care of the sapling: The sapling should be planted upright in the center of the pit. Care must be taken to ensure that the graft union remains at least 15 cm above ground level.

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Propagation

Cleft grafting:

Rootstock: 10–12 months old Khirni seedlings ((*Manilkara hexandra*) and

Scion: 1–1.5 months aged Sapodilla scion

Time of grafting: May-June

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Production Technology

- **Land Selection and Preparation:** High and medium-high land that does not retain standing water is the most suitable. The land should be prepared by cultivating and harrowing two to three times, followed by the removal of perennial weeds along with their roots.
- **Planting Method:** Square or rectangular in flat land and contour method should be followed for hilly areas.
- **Planting Time:** June to July is the ideal planting period. However, with adequate irrigation facilities, sapodilla saplings can be planted throughout the year.

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Fertilizer doses and Application Method:

Name of fertilizer/plant	Tree age				
	1-3 years	4-7 years	8-10 years	11-15 years	Above 15 years
Cowdung (kg)	20	25	30	40	50
Urea (g)	150	400	650	850	1000
TSP (g)	200	300	500	700	800
MP (g)	150	400	650	850	1000
Gypsum (g)	50	100	200	300	400
Zink Sulphate	10	20	30	40	50
Boron (g)	3	5	10	15	20

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Fertilizer Application Method

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Pruning: To ensure proper tree structure, training and pruning should begin two to three years after planting, leaving a stem of 3–4 feet at the base. From this stem, four to five healthy, strong branches spreading in different directions should be allowed to grow, while the others are pruned.

To prevent the tree from becoming overly bushy, dead, diseased, weak, and excess branches should be removed annually at the end of winter. Proper light and air circulation will enhance both the yield and the quality of the fruit.

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Insects and Control Measures

Stem Borer: The larvae bore into the tree by piercing the bark and feeding on the soft tissue beneath, which weakens the tree. Affected stems show visible holes, with bark powder or larval excreta hanging around the openings.

Control: The larvae should be removed manually using an iron rod. If the hole is deep, inject kerosene or an insecticide into the cavity with a syringe, then seal the opening with cotton or mud to kill the larvae.

Leaf Miner: Tiny larvae feed on young leaves, creating irregular, spiral-shaped trails. As a result, the affected leaves dry up and eventually fall off.

Control: Mix 2 ml of Sumithion 50 EC or Perfection 40 EC insecticide per liter of water and spray the foliage thoroughly twice at 15-day intervals.

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Application Method and time:

Time: March, June, and either September or October.

Cow dung or compost may be applied in two installments, in March and September. Light irrigation should be provided after fertilizer application.

Weed Control: To control weed growth around the trees, the land should be cultivated at both the beginning and end of the rainy season, or alternatively, the soil can be dug with a spade.

Irrigation and Drainage: During periods of severe drought, it is advisable to irrigate every 15 days, particularly from October to November. Proper drainage should also be ensured so that water does not accumulate at the base of the tree.

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Diseases and control

No serious diseases are seen in Sapodilla. However, sometimes leaf spots can occur.

Leaf spot disease: Numerous light pink or small pink or reddish-brown spots appear on the leaves. The spots are whitish in the center.

Control: Mix 2 g of the Mancozeb fungicide like Indofil M-45 per liter of water and spray the entire plant twice at 15-day intervals.

Sooty mold: Fungi grow on insect's secretion, causing a disease known as sooty mold. As a result, the leaves become covered with an ash-like coating, reducing their photosynthetic capacity. Consequently, the affected leaves and fruits drop prematurely.

Control: To control mealybugs, mix 0.25 ml of Edmair 200 SL per liter of water or 2 ml of dimethoate insecticide (Tafor/Rogor/Roxion 40 EC) per liter of water, and spray the plants 2–3 times at intervals of 8–10 days.

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Fruit harvesting

December to February and a secondary harvest from April to June. Mature fruits, when collected and stored under straw or sacks, ripen within 6–10 days. Ripe sapodilla can be identified by the following signs:

• The skin turns pale brown, resembling the color of a potato.

• The brown powdery coating on the fruit diminishes or disappears.

• The rind becomes thinner and lighter in color, no longer milky white.

• The thorn-like style at the fruit's apex falls off naturally or detaches easily when touched.

• Fruits may split with a slight impact; however, split fruits rot before ripening.

• To avoid damage, fruits should be harvested carefully by hand or with the help of a bagged picker.

24

Best practices

Cleft grafting is the most common technique for propagation. Grafted trees begin bearing fruit in about 3 years, compared to 5–10 years for seedling-grown trees. Spacing of 7 m × 7 m (the distance may vary depending on the variety and soil type). To prevent the tree from becoming overly bushy, dead, diseased, weak, and excess branches should be removed annually at the end of winter. Proper light and air circulation will enhance both the yield and the quality of the fruit.

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Sapodilla Marketing in Bangladesh:

Available in local markets, particularly from spring through summer.

Markets and Availability:

Retail/Online: Easily accessible through platforms such as Daraz and Chaldal.

Local Markets: Major urban centers like Dhaka (e.g., New Market) and Chattogram maintain a consistent supply. It is often sold directly by growers in village markets or at traditional "Sapodilla Hat", launce terminal, bus station and road side bazar.

Prices

Prices range between BDT 262 and BDT 366 per kilogram in Dhaka and Chattogram.

High-quality or specific varieties (Sapodilla sapling) are sold for around BDT 400-450.

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Sapodilla Marketing

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•Research Focus

•Efforts also target **post-harvest processing** to increase economic value, including developing fermented juices and reducing perishability.

• **Production and Yield:** Studies focus on optimized cultivation techniques, noting the tree's resilience in varied soils and its moderate tolerance to salinity.

• **Shelf-Life Issues:** Sapodilla is highly perishable, with a storage life of only 4-7 days. Research work should be done to increase shelf life of sapodilla.

• **Postharvest Processing and Preservation:** Research addresses the high perishability of the fruit by studying processed products like fermented drinks.

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•Research Focus

• **Bioactive Compounds:** Studies investigate nutritional components, including phytochemicals (flavonoids, saponins) and phenolic compounds in sapodilla leaves.

• **Industrial Potential:** Research explores the medicinal, therapeutic, and economic potential of the fruit

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Challenges

• A major constraint is red leaf spot disease caused by *Neopestalotiopsis* sp., with prevalence rates reaching up to 70% in some areas.

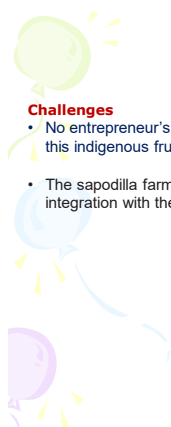
• Industry limitations include scattered market systems, lack of storage facilities, and industrial use.

• Limited number of improved varieties, propagation and production technologies

• Lack of research strategy to develop postharvest technology.

• There is no private organization or company for the production and marketing of sapodilla processed products in Bangladesh.

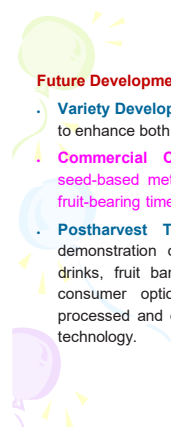
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Challenges

- No entrepreneur's interest to invest money on processing industry of this indigenous fruit due to risk and unavailability of year-round supply.
- The sapodilla farmers are not in well grouped and there is no vertical integration with the up-stream and downstream parts of value chain.



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Future Development

- **Variety Development:** Breeding improved, high-yielding local varieties to enhance both productivity and fruit quality.
- **Commercial Cultivation and Propagation:** Transitioning from seed-based methods to vegetative propagation (grafting) to shorten fruit-bearing time to 4–5 years.
- **Postharvest Technology (Value Addition):** Development and demonstration of postharvest technology for ready-to-serve (RTS) drinks, fruit bars, jams, and jellies to reduce losses and expand consumer options. Demonstration of harvest maturity for both processed and dessert purpose and hands on training on packaging technology.



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Future Development

- **Export Opportunities:** There is an opportunity to earn by exporting this fruit.
- **Entrepreneurship and Market Chain:** Strengthening the supply chain from producers to consumers, building awareness, and promoting industrial use. Involving of private organization or company and entrepreneurs for the production and marketing of sapodilla processed products. Integration with the up-stream and downstream parts of value chain.
- **Utilization of field transportation trolleys.**
- **Demonstrate improved techniques and devices.**
- **Hands on training on packaging technology.**



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Thank You

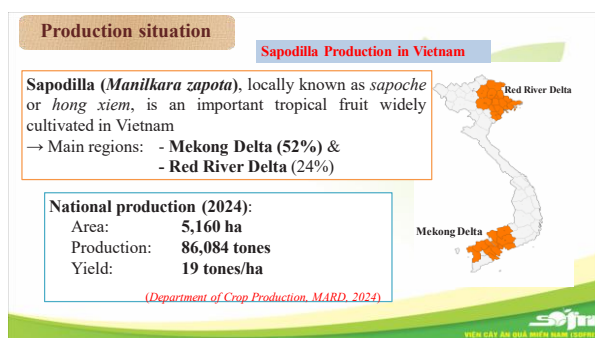




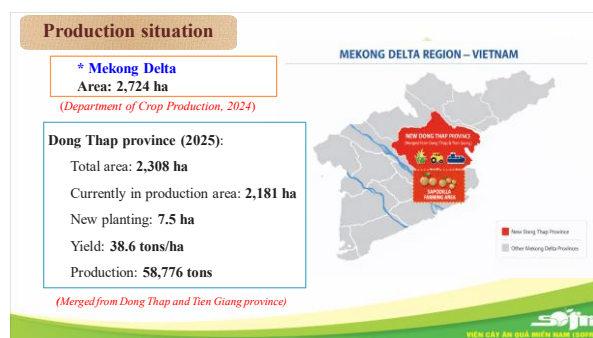
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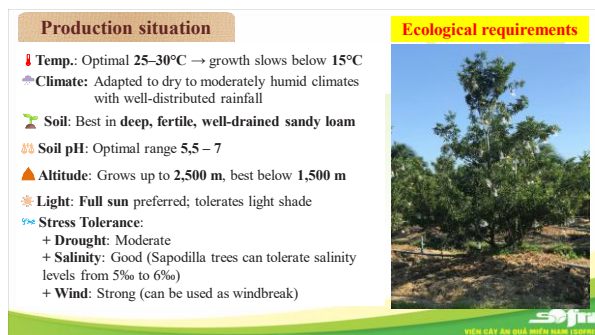
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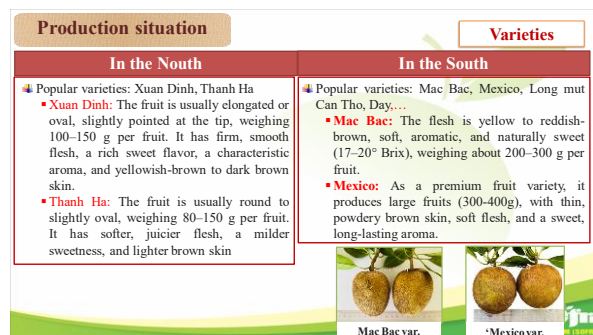
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6

Production management

Cultivation practices

- In the Mekong Delta, sapodilla is commonly planted at distances ranging from 6×8 m to 7×7 m, with an average density of about 200 trees per hectare.
- More attention should be given to improving both yield and fruit quality.

7

Production management

Cultivation practices

Canopy management

Prune the tree after harvesting to reduce insects and diseases, increase the ease for the orchard management and fruit quality.

- Mac Bac variety: prune to form an umbrella-shaped canopy.
- Mexico variety: prune small branches and inner canopy branches, combined with branch training using wires to make the canopy more uniform.

8

Production management

Cultivation practices

Fertilizer

- The recommended NPK amount for sapodilla plants at 10-20 years old is $0.7-1.6$ kg N + $0.7-1.6$ kg P_2O_5 + $1-1.2$ kg K_2O /plant/year
- Organic manure: 20-30 kg/plant/year + Trichoderma spp. (spore density of 10^8 spores/g of finished product) at a dosage of 50-100 g per plant.
- Processed organic fertilizer: 3 kg/plant/year

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Production management

Cultivation practices

Watering

- Young plants should be watered regularly, especially during the dry and hot season.
- Water every 3 days after planting, then gradually reduce the frequency as the plants mature.
- During the rainy season, ensure good drainage.

10

Production management

Important pests

Insects	Infested rate (%)
Fruit fly (<i>Bactrocera dorsalis</i>)	30-60
Fruit borer (<i>Nephotherix</i> sp.)	20-35
White scale (<i>Pseudaulacaspis</i> sp.)	10-40
Mealybug (<i>Planococcus lilacinus</i>)	10
Stem borer (<i>Pachyteria dimidiata</i>)	5

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Production management

Management of important pests

Fruit fly

- Importance:** Very important
- Distribution:** All over the country
- Host:** All varieties of sapodilla, dragon fruit, guava, plum, rambutan, star fruit, mango, etc.

Set up SOFRI-tru ruoi & sticky trap to attract fruit fly adults

Releasing Earwig adult

Specialized parasitic wasp tank

- Use SOFRI-tru ruoi bait, to control fruit flies
- Set up the sticky trap to attract the adults
- Rearing and releasing Earwig to consume fruit fly
- Rearing and releasing parasitoid wasp *Diachasmimorpha longicaudata*

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Production management

Fruit borer

- **Importance:** Very important
- **Distribution:** All over the country
- **Host:** Star Apple in Vietnam is known as Milk Fruit

- Use bag cover sapodilla fruit with size of 15 x 20 cm, bagging at 3-4 month after fruit set to control fruit borers
- Set up light traps to attract fruit borer adults
- Use repellent traps such as camphor and cinnamon solution.

Management of important pests



Use bag cover



Set up light traps

Repellent traps

VIỆN CÂY AN QUẢ MIỀN NAM (CAQNM)

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Production management

IPM Package for Organic-Oriented Sapodilla Prod. Model in VN

- ✓ Prune low sapodilla canopy for easy manage. of pests & dis.;
- ✓ Combined with branch training using wires for canopy uniform;
- ✓ Bag fruit cluster at 4 month after fruit set;
- ✓ Use balance fertilizer and enhance use OM and Trichoderma;
- ✓ Set up light traps to monitor fruit borer and other pests;
- ✓ Set up sweet baits, natural enemies to control fruit flies;
- ✓ Use repellent traps to control fruit borer;
- ✓ Soft pesticides: Azadirachtin, Abamectin, Emamectin benzoate, Buprofezin, Spirotetramat, to control mealybugs, fruit borers and white scale,... when needed.

The application of an IPM package in organic-oriented sapodilla production reduced pesticide use and improved food safety management as well as fruit quality.

- 2023–2025: Two organic-oriented sapo. production models applying IPM package were established on 1 hectare for two var.s: Mac Bac and Mexico.

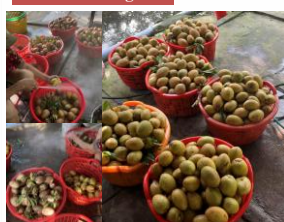


VIỆN CÂY AN QUẢ MIỀN NAM (CAQNM)

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Harvest & post-harvest

Harvesting



Mac Bac var.



Mexico var.

VIỆN CÂY AN QUẢ MIỀN NAM (CAQNM)

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Harvest & post-harvest

Harvesting

- **Mac Bac var.** harvested 34 weeks after fruit set has high quality, with light yellow-green peel, light orange-yellow flesh.
- **Mexico var.** harvested 36 weeks after fruit set has high quality, with light yellow peel, orange-yellow flesh, and good storage potential.
- **Around the year** (Peak harvest typically occurs from December to March).



Mac Bac var.

Mexico var.

VIỆN CÂY AN QUẢ MIỀN NAM (CAQNM)

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Harvest & post-harvest

Packaging for sapodilla transportation

After harvest, sapodilla fruits are transported to collection points for sale to traders.



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Market situation

- In Vietnam, sapodilla fruits are mainly consumed in the domestic market, primarily as fresh fruit distributed through supermarket chains, fruit stores, and traditional markets.



VIỆN CÂY AN QUẢ MIỀN NAM (CAQNM)

18

Market situation

- Mexico sapodilla produced under safe production practices is marketed through supermarkets in major cities nationwide, including Ho Chi Minh City, Hanoi, Da Nang, and Vinh,...
- In Dong Thap Province, Vinh Kim Cooperative plays the role of a distributor, providing Mexico sapodilla products to supermarkets.



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Challenges in production and market

- Small land holders
- Climate changing (flood, salinity, drought)
- Emerging pests (fruit flies, fruit borers, white scale,...) problem
- Lack in IPM knowledge of farmers in controlling pests and lack in bio-products, reliance on pesticide dealers
- Postharvest losses – during handling (15-20%)
- Recently, the cultivation area has decreased as farmers have shifted to other fruit trees, such as durian, due to higher profits.
- The range of processed sapodilla products remains limited.



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Future development

- Sapodilla production should continue to be developed based on the concept of promoting the potential and advantages of ecological regions, with a focus on improving fruit quality, market value, and competitiveness, protect the ecological environment, and adapt to climate change;
- Advanced cultivation techniques and improved post-harvest handling should be applied to increase productivity and extend shelf life;
- Develop certified sapodilla production areas and issue planting area codes for domestic consumption and export;
- Know about requirements and trends of the market; value chain for Inter. Market;
- Pay attention to building brands for sapodilla focus on health value on this crop too.

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Thank you for your attention!



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