



Star-Apple, Kaimito Research

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Starapple Usage

Star apple, locally known as **kaimito** (*Chrysophyllum cainito*), is a tropical fruit tree widely grown in the Philippines for its sweet, milky, and jelly-like flesh. It thrives in warm climates and is valued both as a backyard fruit and a market crop. The fruit's purple or green skin encloses a soft, fragrant pulp enjoyed fresh or processed. Kaimito is nutritious, rich in vitamins, minerals, and antioxidants.

Culinary Uses (Dishes)

- Kaimito fruit salad
- Kaimito yogurt bowl
- Kaimito jam or preserve
- Kaimito sorbet/ice cream
- Kaimito tart or pie
- Kaimito panna cotta topping



Drinks Made With Kaimito

- Kaimito juice and smoothies
- Kaimito milkshake
- Kaimito-infused water
- Fermented kaimito drink (light probiotic-type)

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Nutrients per 100 g (Approximate)

- Calories: 67 kcal
- Carbohydrates: 14 g
- Fiber: 3.3 g
- Vitamin C: 34 mg
- Calcium: 12 mg
- Potassium: 194 mg
- Iron: 0.5 mg
- Magnesium: 17 mg
- Antioxidants (polyphenols)



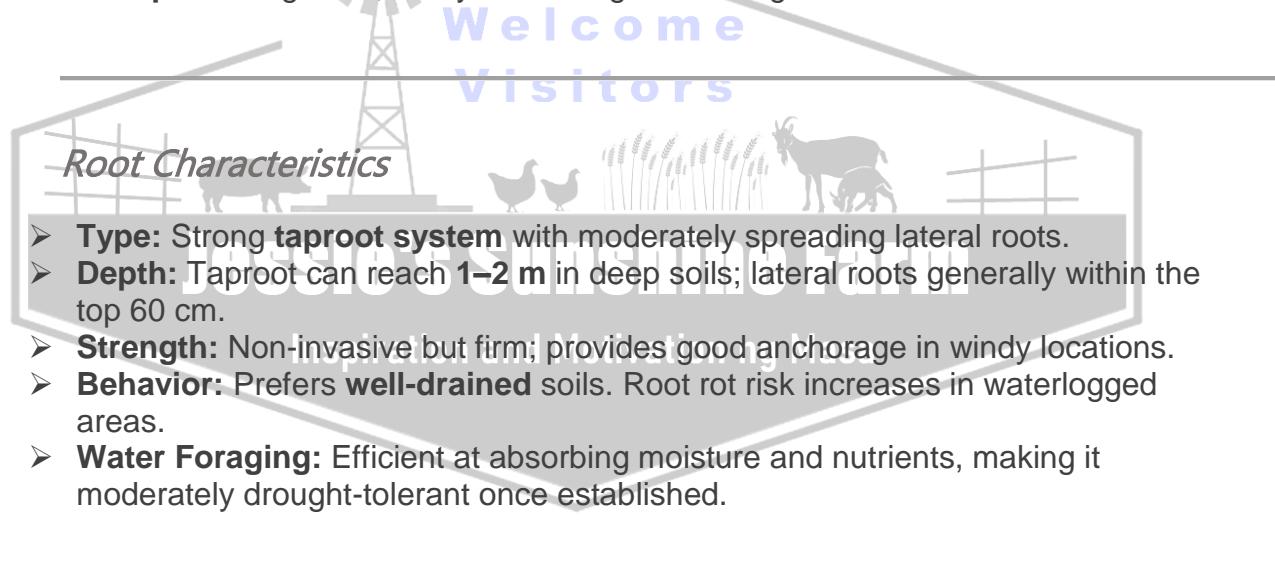
Health Benefits

- Supports immunity (high in vitamin C)
- Good for digestion (rich in fiber)
- Helps maintain healthy skin
- Provides antioxidants that reduce inflammation
- Supports heart health through potassium and fiber
- Hydrating and low-fat fruit
- May help with blood sugar control in moderate portions

Tree and Growing Characteristics

Tree Characteristics

- **Growth Habit:** Medium-sized evergreen tree, typically **8–15 m** tall with a rounded, dense canopy.
- **Leaves:** Smooth, glossy green on top; **golden-brown underside** (coppery sheen), a key identifying feature.
- **Flowers:** Small, greenish-white to purplish, fragrant; attracts pollinators.
- **Fruit:** Round, smooth-skinned, purple or green varieties. Flesh is **milky, sweet, gelatinous** with star-shaped core.
- **Wood:** Hard and durable; commonly used for household implements.
- **Bearing Age:** Usually **4–7 years** from seed; earlier with grafted trees.
- **Lifespan:** Long-lived, 25+ years with good management.



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Root Characteristics

- **Type:** Strong **taproot system** with moderately spreading lateral roots.
- **Depth:** Taproot can reach **1–2 m** in deep soils; lateral roots generally within the top 60 cm.
- **Strength:** Non-invasive but firm; provides good anchorage in windy locations.
- **Behavior:** Prefers **well-drained** soils. Root rot risk increases in waterlogged areas.
- **Water Foraging:** Efficient at absorbing moisture and nutrients, making it moderately drought-tolerant once established.

Growing Implications Based on Root System

1. **Soil Requirement:**
 - a. Deep, loamy soils ideal for anchorage of taproot.
 - b. Avoid compacted clay or areas prone to standing water.
2. **Spacing Implications:**
 - a. Wide canopy and root spread require **8–10 m** spacing for orchards.
 - b. In intercropping systems, maintain **6–7 m** clearance from similar fruit trees.
3. **Water Management:**



- a. Young trees need regular moisture, but mature trees tolerate short dry periods.
- b. Good drainage is essential to prevent root diseases.

4. **Shade & Sunshine Demand:**
 - a. **Sun-loving**, performs best in **full sunlight** (≥ 6 hours/day).
 - b. Tolerates **light partial shade**, but too much shade reduces flowering and fruit sweetness.
 - c. Under heavy shade, fruiting can drop by 30–40%.
5. **Wind Exposure:**
 - a. Strong root anchorage makes it resistant to moderate winds.
 - b. However, young trees benefit from windbreaks.

Growing Characteristics Table

Category	Characteristics
Scientific Name	<i>Chrysophyllum cainito</i>
Tree Size	8–15 m tall; broad, rounded canopy
Root System	Strong taproot with moderate lateral roots
Soil Preference	Deep, well-drained loam; pH 6.0–7.5
Sunlight Requirement	Full sun preferred; tolerates light partial shade
Water Requirement	Moderate; avoid waterlogging
Spacing (Orchard)	8–10 m
Spacing (Intercrop)	6–7 m clearance from other trees
Climate	Tropical, warm, humid; frost-sensitive
Wind Tolerance	Good once established
Time to Bearing	4–7 years (seeded), 3–5 years (grafted)
Fruit Season	Typically late dry season to early rainy season
Maintenance Level	Low to moderate

Small Summary

Star apple (kaimito) is a durable, sun-loving tropical fruit tree with a strong taproot and a moderate lateral root system. It thrives in well-drained soils and produces high-quality fruit when planted in full sunlight. Light shade is acceptable, but too much drastically reduces fruiting. The tree requires generous spacing due to its wide canopy and moderate root spread, making it suitable for orchard systems and spacious intercropping setups. Low-maintenance, drought-tolerant, and highly productive with proper care.

Varieties / Types of Kaimito

Although there isn't a long list of formally named "Philippine cultivars," most sources distinguish two major variant types (primarily by fruit-skin color), plus occasional mentions of other local variants or smaller selections. Market Manila+3CooksInfo+3Growables+3

Varieties	Skin / Fruit Color	Comments / Notes
<i>Caimito morado</i> (or "purple/purple-skinned" type)	Deep purple (often with faint green around calyx) Wikipedia+2Ask IFAS - Powered by EDIS+2	The most common "classic" star apple; frequently sold in markets. Known for dense skin and typical star apple appearance. Fairchild Tropical Botanic Garden+2CooksInfo+2
<i>Caimito blanco</i> / "green/light-skinned" type (sometimes "green/white", "light green/greenish-yellow")	Pale green → light greenish-yellow Ask IFAS - Powered by EDIS+2CooksInfo+2	Sometimes has thinner skin and more liquid/jelly-like pulp per some growers' notes. Fairchild Tropical Botanic Garden+1
Local / "garden/backyard" types	Variation exists — some may have intermediate coloration, smaller fruit, or be seed-grown (not grafted)	Less uniform; often grown from seed, meaning fruit quality and size vary. Not widely standardized. Growables+2tagaloglang.com+2
Named (non-Philippine) grafted cultivars (sometimes used elsewhere) — e.g. Haitian Star (purple) / Blanco Star (green)	Purple (Haitian) and Green (Blanco)	Known from horticultural literature outside Philippines (e.g. South Florida); included to show global recognized types. Ask IFAS - Powered by EDIS+1





Note: Some horticultural references (outside Philippines) mention more than just two — but in the Philippines, “purple” and “green/white” types remain the standard recognized variants. Wikipedia[+2](#)Growables[+2](#)

Also, many locally grown kaimito are not named cultivars but come from seed — hence fruit size, sweetness, pulp consistency, and skin color may vary a bit from tree to tree. Market Manila[+2](#)asianplant.net[+2](#)

Top 5 for Commercial Use & Best for Markets

Because formal cultivar lists for Philippines are limited, the “top five” for commercial use tend to be informal: those types/trees that consistently yield good fruit and are popular in trade. Based on literature and market practice, these are likely:

Variety / Type	Reason for Commercial Preference / Market Advantage
Purple-skinned (“morado / caimito morado”) type	Most familiar, widely recognized and demanded by consumers. Fruit rind tends to be tougher — better for transport / shelf. Market Manila +2 CooksInfo +2
Green-skinned / light-green (caimito blanco / “green” type)	Some prefer lighter-skinned fruit; pulp sometimes softer or more jelly-like. Good for households. Fairchild Tropical Botanic Garden +1
Grafted cultivars similar to “Haitian Star” (if available)	Grafted trees tend to fruit earlier and with more uniform quality than seed-grown. Ask IFAS - Powered by EDIS +1
Seed-grown local backyard types (selected best trees)	In small-scale farms or backyard gardens; if selected carefully for fruit quality, can supply local markets. Less uniform, but popular for “native taste.” Market Manila +1
Mixed-batch supply (both purple and green types)	For markets/traders who want to offer variety to consumers; being able to supply both color types helps meet diverse preference.

Because there is no widely accepted registry of dozens of cultivars (as with some fruit trees), the commercial “varieties” are more a matter of **type + propagation method (seed vs grafted)** rather than formally distinct cultivar names.

Local Markets for Kaimito in the Philippines

In the Philippines, kaimito is commonly sold in local public markets (“palengke”), fruit stands, and neighborhood sari-sari stores during its season. Market Manila[+2](#)aboutfilipinofood.com[+2](#)

- Major urban public markets (Manila, Cebu, Davao, etc.) — especially when in season. pinakbetrepublic.blogspot.com[+2](#)aboutfilipinofood.com[+2](#)
- Provincial markets in fruit-producing provinces (e.g. areas where kaimito thrives in warm lowlands) — often more abundant and cheaper. aboutfilipinofood.com[+1](#)

- Backyard fruit stands or roadside vendors during peak season — many Filipinos still grow kaimito in home gardens. Market Manila[+1](#)

Because kaimito bruises easily and does not transport well over long distances (especially the purple type) it is rarely exported far — so local, near-source markets are the best places to find fresh fruit. CooksInfo[+2](#) Wikipedia[+2](#)

Notes & Limitations

- There is **no comprehensive published registry** of “Philippine cultivars” of kaimito like there is for mango or banana. What exists are mainly informal “color-type” distinctions and occasional grafted trees (often from imported stock).
- Because many trees are **seed-grown** (not grafted), fruit quality, yield, and even ripening time vary among trees — for commercial planting this means **selecting and propagating the best-performing trees** (via grafting or air-layering) is important.
- Given the limited commercial spread, when you plan planting or orchard design, it's wise to assume **variability in fruit yield and quality**, unless you source grafted or otherwise trialed trees.

Small Summary

In the Philippines, “varieties” of kaimito are not formally defined cultivars — rather, there are two main recognized types: purple-skinned (morado) and green/light-skinned (blanco/green). Commercial use tends to favor the purple type for market demand and durability, while green types and seed-grown trees are more common in home gardens and local markets. For best results, growers aiming for consistent yield and quality often rely on grafted stock (when available) or propagate promising seed-grown trees. Because kaimito does not transport well and bruises easily, local and provincial markets remain the primary channels for fresh fruit distribution.





Intercropping Compatibility of Kaimito

General Notes

- **Kaimito is a medium-tall secondary canopy fruit tree (8–15 m)**
- Prefers **full sun** but tolerates **light partial shade**
- Wide canopy → needs **space and good airflow**
- Good in **multistory cropping setups** but NOT good under deep shade
- Generally **non-aggressive roots**, making it suitable for mixed orchards

Intercropping Compatibility Table

Partner Tree	Compatibility	Shade Consideration	Spacing	Notes
Coconuts	Very Good	Coconuts provide filtered sunlight , ideal for kaimito; no heavy shade	7–10 m	One of the best combinations. Good airflow. Complementary canopies.
Cacao	Moderate to Poor	Cacao needs 50–60% shade ; kaimito provides too little uniform shade and canopy is uneven	6–7 m minimum	Works only if cacao stays below and between kaimito, but kaimito does NOT create a consistent shade layer like Gliricidia.
Robusta Coffee	Moderate	Coffee prefers partial shade , kaimito provides light shade but canopy spacing may create patchy coverage	6–8 m	Acceptable but not optimal; coffee prefers more even 30–40% shade.
Papaya	Poor	Papaya needs full sun and hates heavy canopy competition	7–8 m	Avoid placing papaya near kaimito; kaimito shades papaya quickly.
Chico (Sapodilla)	Good	Similar sunlight needs; both tolerate full sun	8–10 m	Works well in mixed orchards. Chico grows slower but stable.
Oranges (Citrus)	Moderate to Good	Oranges need full sun , but light kaimito shade is tolerable	6–8 m	Works if kaimito is kept pruned. Avoid overcrowding.

Shade & Sunlight Influence

Kaimito's canopy effect

- **Filtered light only**, not dense shade
- Good for: **coconuts, chico, citrus**
- Acceptable for: **coffee, cacao**
- Poor for: **papaya**



Kaimito's needs

- Full sun ideal
- Slight shade okay (10–20%)
- Heavy shade causes:
 - Weak flowering
 - Reduced sweetness
 - Smaller fruit size

Spacing Guidelines (General Orchard Mix)

- Kaimito ↔ Kaimito (monocrop): 8–10 m
- Kaimito ↔ medium fruit trees (chico, citrus): 7–9 m
- Kaimito ↔ small trees (coffee, cacao): 6–7 m
- Kaimito ↔ tall upper canopy (coconut): 7–10 m

Spacing ensures:

- Good sunlight penetration
- Reduced humidity (lowers fungal issues)
- Healthy root expansion

Economics

What we know about yield & price

- A mature star-apple (caimito) tree may yield **about 50–100 kg** fruit per year under good growing conditions.
- Other sources report yields around **60–70 kg per tree per year**.
- On the low end or under less-than-ideal conditions yield will be lower; there is also variation by variety and management.
- Regarding price: online Philippine listings for caimito show around **₱239–₱349 per kilogram** at retail.
- In more typical or lower-price public-market settings, older references show ₱30 per kg, though that is dated and likely much lower than current prices.

Estimated Gross Revenue per Mature Tree — with Price Scenarios

Here's a table of possible gross revenues per tree depending on yield and price (assuming well-managed mature trees): RETAIL PRICING

Yield / Tree / Year	Price / kg (₱)	Estimated Gross Revenue per Tree (₱)
50 kg	120	₱ 6,000
50 kg	130	₱ 6,500
70 kg	120	₱ 8,400
70 kg	130	₱ 9,100
100 kg	120	₱ 12,000
100 kg	130	₱ 13,000

As of early to mid-2025, the market price of caimito in Mindanao, Philippines, was around ₱120–₱130 per kilogram. ⁶

- In March 2025, fresh caimito was available in the General Santos area for ₱130 per kilogram.
- In Zamboanga, purple caimito was offered at ₱120 per kilogram or ₱220 for 2 kilograms in March 2025. ⁶

Important caveats: these are gross revenues — before costs (labor, maintenance, harvesting, transport, losses, etc.). Actual net income will be lower and vary significantly depending on yield consistency, fruit quality, local demand, seasonality, and market access.

Relevance to Bukidnon / Mindanao Context

- While most yield/price studies come from outside the Philippines (or from non-Bukidnon areas), the general biology, and productivity of caimito seem consistent: 50–100 kg per mature tree per year.
- Bukidnon — being part of Mindanao — has a climate that can support tropical fruit trees (depending on exact elevation and microclimate). Thus, it is plausible that a well-managed caimito orchard in Bukidnon could reach yields in the 50–100 kg/tree range.
- Given rising demand for exotic/local tropical fruits in Philippines (especially in urban and regional markets), achieving farm-gate prices near the higher end) is realistic — especially if fruits are marketed fresh, in season, handled carefully, and sold directly or via value-added channels.

Economic Benefits & Why Caimito Can be Attractive

- **Reliable annual yield:** Mature caimito trees yield fruits every year; with 50–100 kg per tree per year, even a small orchard (10–20 trees) can provide meaningful supplemental income.
- **High per-kg value:** Compared to common staples, star apples often fetch premium prices — giving good return per kilo, especially when sold fresh or pre-packed.
- **Low maintenance once established:** Compared to short-lived crops, caimito is long-lived; a well-cared tree can yield for many years, spreading the establishment cost over decades.
- **Opportunity for value-adding:** Beyond fresh fruit sale, processing (juice, jam, and desserts) can increase value, reduce post-harvest losses, and open up market niches.
- **Diversification:** For farms in Bukidnon that already grow other cash crops, caimito provides fruit-crop diversification, adding resilience to market or climate shocks affecting other crops.

Welcome Risks, Limitations, and What to Watch Out For Visitors

- Yield variation: Not all trees will reach high yields; seed-grown trees may produce less or take longer to mature.
- Price fluctuations: Market price depends on season, demand, competition — low-season or oversupply may bring down per-kg price significantly.
- Harvest & post-harvest losses: Caimito doesn't store/transport well (fruits bruise easily); nearby/local markets or fast distribution needed for good returns.
- Initial establishment time: From seed, trees may take 5–10 years to fruit; grafted trees shorten this but require access to good nursery stock.

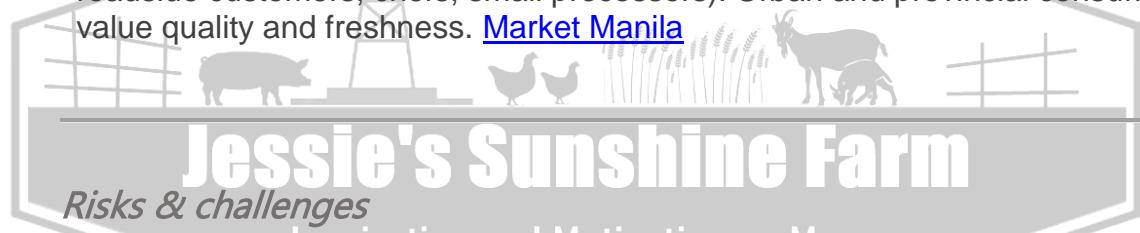
Conclusion

If you plant and manage caimito properly in Bukidnon — choosing good seedlings (ideally grafted), ensuring proper care, harvesting and marketing efficiently — each mature tree could realistically generate **₱12,000-13,000 gross per year**. For a small orchard (say 20–50 trees), that could represent a significant supplemental income stream.

For larger-scale or commercial operations, caimito can be a viable perennial fruit crop — especially when combined with value-addition, careful harvest/handling, and market strategy.

Market demand & acceptance

- **Local retail demand exists but is seasonal and mostly local.** Kaimito is a familiar Filipino tropical fruit sold in palengkes, roadside vendors, and farmers' stalls when in season; it is not a widely exported commodity so most demand is domestic/regional. [Market Manila+1](#)
- **Valencia has the market infrastructure to absorb local production.** Valencia City has an active public market and a dedicated farmers' market / bagsakan area that serve as landing points for agricultural produce from surrounding towns — useful for fresh fruit marketing. Urban retail (malls, groceries) in Valencia also create retail channels. [Wikipedia+1](#)
- **Wholesale / online retail price potential is attractive in peak season.** Online retail listings show consumer prices in the range of about ₱239–₱349/kg (retail). Wholesale/farmgate prices will be lower, but retail listings indicate consumers will pay a premium for quality/fresh fruit. Regional wholesale data portals show Philippines-level market records for star apple, although national trade volumes are small. [Farm2Metro+1](#)
- **Acceptance is good among local consumers, but fruit perishability and texture means strong repeat buyers are usually local** (household buyers, roadside customers, chefs, small processors). Urban and provincial consumers value quality and freshness. [Market Manila](#)



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1. **Seasonality & short marketing window** — caimito fruits in a discrete season; when supply floods the local market prices fall, and off-season sales are limited. This creates price volatility and income seasonality for growers. [Market Manila](#)
2. **Perishability and transport losses** — fruits bruise and don't ship well long distances; poor handling or long transport reduces marketability and fetches lower prices. This limits markets to nearby towns and urban centers (e.g., Valencia, Malaybalay, Cagayan de Oro). [Market Manila](#)
3. **Limited commercial propagation stock** — many Philippine trees are seed-grown and variable; lack of widely available grafted/selected cultivars reduces uniformity, yield predictability, and commercial scaling. [Tridge](#)
4. **Low visibility in export/large-scale wholesale channels** — star apple is a niche fruit in national trade; national import/export datasets show little to no large-scale trade — meaning growers rely on domestic, often local channels. [Tridge+1](#)
5. **Price pressure from oversupply or substitution** — during peak season or when other fruits are cheaper, prices can collapse; buyers may switch to more familiar/cheaper fruits. [Market Manila](#)

6. **Pest, disease and production risks** — as with other tropical fruits, pests, fungal diseases (especially in poorly drained or overly humid microclimates) and poor flowering reduce yields. (General agronomy / provincial ag notes.) [Bukidnon Provincial Government](#)

Practical Opportunities for Southern Bukidnon / Valencia

1. **Local fresh-market niche** — position as a premium fresh fruit for Valencia public market, NVM Farmers Market, and nearby urban centers. Careful harvest and packing can command retail prices. [facebook.com+1](#)
2. **Farm-direct & value-added** — sell direct to consumers (farmgate stalls, social media sales) or add value through jams, syrups, sorbets, or refrigerated pre-cut fruit to capture more margin and reduce losses. Local tourism/food stalls (Valencia malls, cafes) could be buyers. [Business Inquirer](#)
3. **Cooperative marketing & landing areas** — use Valencia's farmers' market/bagsakan to aggregate supply, improve bargaining position, stabilize prices, and reach more buyers. Cooperatives can also access training and finance. [facebook.com+1](#)
4. **Intercropping with coconut, chico, citrus** — integrating kaimito into multistory orchards (especially with coconuts and other complementary trees) can improve land productivity and spread risk across crops. This suits Bukidnon farms that already manage mixed systems. (Matches earlier intercropping guidance.) [Bukidnon Provincial Government](#)
5. **Premium / organic positioning** — Bukidnon has pockets of organic and specialty farming reputation (e.g., organic rice). If growers adopt low-chemical production and proper handling, kaimito can be sold as a premium local specialty.
[Discover Bukidnon](#)
6. **Linkages to nearby urban markets** — Valencia's retail growth (malls, businesses) increases local demand; building relationships with retailers and foodservice (cafes, restaurants) can create more stable off-take. [Business Inquirer](#)



Practical recommendations

- **Select & propagate good trees (grafting/air-layering)** to reduce variability and get earlier, more uniform yields. [Tridge](#)
- **Harvest, pack and transport carefully** — invest in simple cushioning/packing and fast transport to Valencia market to reduce bruises and get higher retail price. [Market Manila](#)
- **Aggregate through farmer groups** to access the Valencia Farmers Market/bagsakan and negotiate better farmgate prices. [facebook.com+1](#)
- **Try small-scale value-added trials** (jam, sorbet, syrup) and test the Valencia cafe/retail trade — even small volumes can show if there is local willingness to pay more for processed kaimito products. [Business Inquirer](#)

Short summary (Southern Bukidnon & Valencia)

Kaimito is a locally accepted tropical fruit with **good retail potential in nearby urban centers like Valencia**, provided farmers manage quality and post-harvest handling. The main constraints are seasonal gluts, perishability, and lack of standardized commercial planting material — but there are clear, practical opportunities: farm-direct sales, aggregation at Valencia's farmers' market, value-adding, and intercropping with compatible trees (coconut, chico, citrus). With cooperative marketing and a focus on quality/handling, Bukidnon growers can capture attractive local retail prices and improve farm income. [facebook.com+2Farm2Metro+2](#)

Inspiration and Motivation ng Masa

