Atis Research

Contents

Characteristics of Atis

Atis, commonly known as **Cherimoya** (*Annona cherimola*), is a tropical fruit native to the Andean valleys of South America and widely cultivated in the Philippines. It has a creamy, custard-like pulp with a sweet, tropical flavor reminiscent of banana, pineapple, and pear. Cherimoya is prized both for its taste and nutritional value. It often enjoyed fresh and in various culinary preparations, beverages, and desserts. Its soft texture makes it ideal for healthy, refreshing snacks.

Culinary Uses

- Custards and puddings
- Ice creams and sorbets
- Fruit salads and parfaits
- Baked goods (cakes, muffins, tarts)
- Smoothie bowls

Simple Ways to Eat

- Fresh, scooped with a spoon
- Sliced on top of yogurt or cereal
- Added to fruit platters
- Mixed with honey or lime juice for a quick snack

Drinks

- Cherimoya smoothies
- Milkshakes
- Fruit juice blends (with mango, banana, pineapple)
- Sorbet or frozen beverage

Nutrients per 100 g

Nutrient	Amount
Calories	75 kcal
Carbohydrates	17.0 g
Sugars	13.0 g
Dietary Fiber	3.0 g
Protein	1.6 g
Fat	0.6 g
Vitamin C	20.1 mg
Potassium	287 mg
Magnesium	17 mg
Calcium	10 mg
Iron	0.27 mg

Health Benefits

- Boosts immunity (rich in vitamin C)
- Supports digestive health (high in fiber)
- Promotes heart health (potassium and magnesium)
- Provides antioxidants to reduce inflammation
- Supports healthy skin and hair
- May help regulate blood pressure

Tree Characteristics

- **Growth habit**: Small to medium-sized tropical evergreen tree, typically 5–9 m tall, sometimes up to 10 m.
- **Trunk:** Straight, cylindrical, with smooth gray bark; young branches green and pubescent.
- **Leaves:** Simple, oblong to oval, glossy dark green on top, lighter underneath; alternate arrangement.
- **Flowers:** Large, solitary or paired, greenish-yellow with a sweet fragrance; hermaphroditic.
- **Fruits:** Heart-shaped or conical, 150–500 g, with creamy, sweet pulp and black seeds; ripens 3–4 months after flowering.
- **Lifespan:** 30–50 years under favorable conditions.

Root System

- **Type:** Shallow, spreading, fibrous root system.
- **Depth:** Most roots in top 50–70 cm of soil.
- **Adaptation:** Sensitive to waterlogging; prefers well-drained soils.
- **Function:** Efficient in nutrient uptake but vulnerable to drought stress; root pruning is not recommended.
- **Implications for Growing:**
    - Plant on raised beds or mounds in heavy soils.
    - Mulching recommended to maintain moisture and temperature.
    - Intercropping with deep-rooted crops can reduce competition.
    - Careful irrigation management is necessary to avoid root rot.

Sunshine and Shade Demand

- **Light requirement:** Full sun (6–8 hours/day) for optimal flowering and fruiting.
- **Shade tolerance:** Partial shade possible but reduces flowering and fruit yield.
- **Microclimate:** Sensitive to strong winds; windbreaks recommended in exposed areas.

Table: Growing Characteristics of Atis Tree

Feature	Description	Implication for Cultivation
Tree height	5–9 m	Requires sufficient spacing; manageable pruning needed
Canopy	Dense, spreading	Provides shade; intercropping requires careful planning
Soil	Well-drained loamy or sandy soils	Avoid waterlogged areas; amend clay soils
pH	6.0–7.5	Neutral to slightly acidic; liming may be needed if acidic
Water	Moderate; sensitive to waterlogging	Drip irrigation recommended; mulch to conserve moisture
Temperature	18–30°C	Avoid frost; sensitive to prolonged cold
Sun	Full sun	Partial shade reduces yield
Root depth	Shallow, fibrous	Avoid deep tillage; maintain topsoil fertility
Fertility	Medium to high	Requires organic matter; respond well to compost/fertilizer
Spacing	5–7 m between trees	Allows sunlight penetration and air circulation
Flowering	3–4 years after planting	Pruning can enhance flower production
Fruit maturity	3–4 months after flowering	Requires regular monitoring for harvest

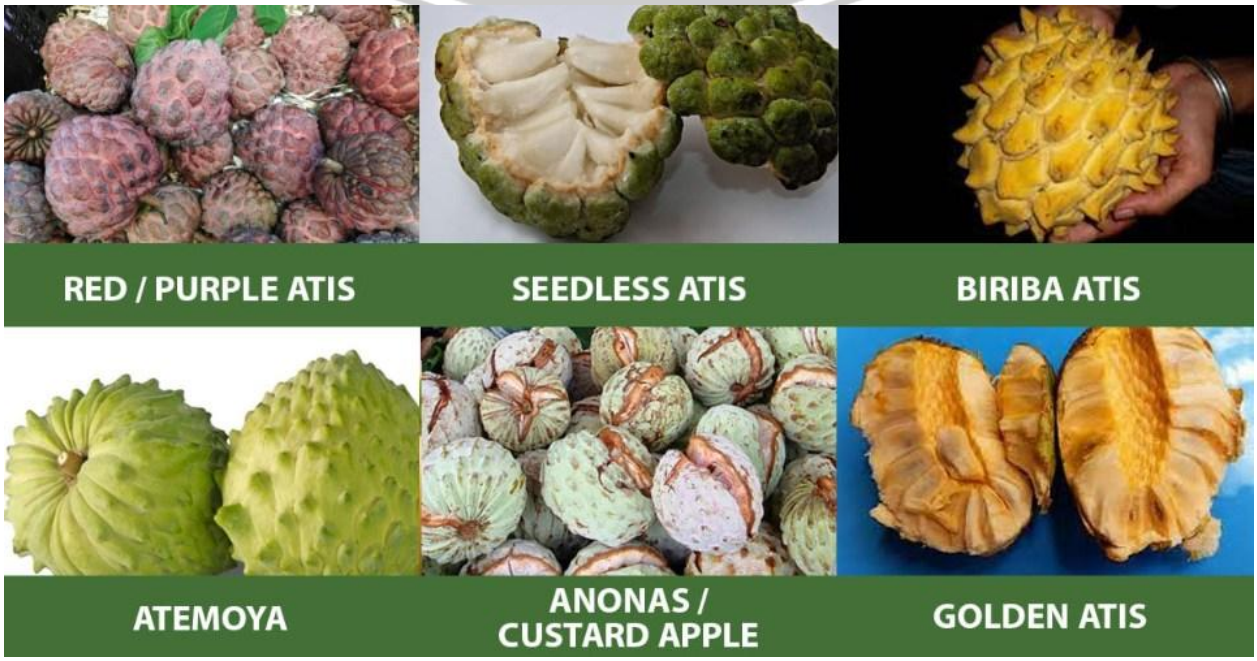
Summary

Cherimoya (Atis) is a tropical evergreen tree suited for small to medium-sized orchards. Its shallow, fibrous root system demands well-drained soils and careful irrigation. Full sun promotes optimal flowering and fruiting, while partial shade reduces yield. Proper spacing, wind protection, and soil fertility management are essential for commercial cultivation. Overall, Atis is a moderately low-maintenance tree, prized for its creamy, sweet fruits and nutritional value, making it a valuable addition to tropical fruit farms.

Varieties / Cultivars in the Philippines

Here's a summary table + commentary of well-known cherimoya / atemoya cultivars that are *commercially relevant* and have been mentioned in Philippine or tropical-Annona contexts.

Variety (Cultivar)	Species / Hybrid	Notes & Relevance to PH / Tropics
African Pride	*Annona* × *atemoya* (cherimoya × sugar apple)	One of the most widely cited commercial atemoya cultivars for tropical climates. PROSEA mentions *African Pride* as high-yielding. prosea.prota4u.org UPLB (Philippines) also lists "African Pride Atemoya" as a registered technology. ovcre.uplb.edu.ph
Gefner (sometimes spelled "Genfer")	*Annona* × *atemoya*	Known in research literature. Provides good fruit production "without hand pollination." ResearchGate Also noted in cultivars list for atemoya. iplantz.com+1
Page	*Annona* × *atemoya*	A classic atemoya selection. According to Growables, the "Page" cultivar was one of the first named. Growables However, it sometimes has issues (e.g., fruit splitting) in tropical production. ResearchGate
Pink's Mammoth (aka *Pink's Prolific*)	*Annona* × *atemoya* / *cherimoya lineage*	A large-fruited selection. Mentioned in breeding programs. era.dpi.qld.gov.au+1 It is one of the parents used in crossing / selection. era.dpi.qld.gov.au
Hillary White	*Annona* × *atemoya*	Another cultivar used in breeding trials. According to breeding-program literature, crosses have been made using Hillary White. era.dpi.qld.gov.au



Commentary on Local Philippine Varieties

- In the **Philippine context**, *cherimoya (pure A. cherimola)* seems to have very **limited commercial planting**. According to an article, there are "small plantings" in Iloilo and Rizal. agriculture.com.ph
- Most of what *is* grown commercially / semi-commercially under the "atis" or "custard apple / atemoya" category in the Philippines likely involves atemoya hybrids (cherimoya × sugar-apple), rather than pure cherimoya.
- The **"African Pride" atemoya** is specifically developed / promoted in the Philippines (e.g., by UPLB), which suggests it's one of the top commercial varieties there. ovcre.uplb.edu.ph

Intercropping Varieties for Atis

Crop / Tree	Compatibility	Shade Consideration	Planting Distance from Atis	Notes / Risk
Coconut (***Cocos nucifera***)	**Good**	Atis tolerates partial shade from coconuts; full sun preferred	6–8 m	Young Atis may need sun; coconuts grow tall, so minimal competition for root zone
Mango (***Mangifera indica***)	**Moderate**	Mango casts dense shade; Atis fruiting may reduce	5–7 m	Only plant if mango trees are spaced to allow sunlight; pruning may be necessary
Guyabano / Soursop (***Annona muricata***)	**Good**	Similar sunlight requirement; partial shade tolerated	4–5 m	Complementary flowering and fruiting periods; monitor for pests
Guavapple (***Psidium guajava × Acca sellowiana***)	**Good**	Tolerates partial shade; Atis can handle filtered sunlight	3–4 m	Fast-growing; prune to reduce canopy overlap
Mangosteen (***Garcinia mangostana***)	**Moderate to Poor**	Shade-tolerant; Atis prefers full sun	5–6 m	Mangosteen grows slowly; risk of Atis overshadowing young mangosteen
Tabon-Tabon (***Atuna racemosa***)	**Poor**	Tolerates shade	5–6 m	Not ideal; may compete for nutrients; low value compared to fruit trees
Lemon / American Lemon (***Citrus limon***)	**Good**	Similar sun requirement	3–4 m	Compatible; can be planted in rows near Atis

Legend:
Good*: Compatible for intercropping; minimal competition; complementary growth.*
Moderate*: Possible, but needs careful spacing, pruning, or management.*
Poor / Bad*: High competition or growth incompatibility.*

Summary

- **Best Intercropping Choices:** Coconut, Guyabano, Guavapple, Lemon. These trees provide complementary growth, maintain sun for Atis, and avoid excessive competition.
- **Moderate Choices:** Mango and Mangosteen. Can be intercropped with careful canopy management and spacing.
- **Avoid / Poor Choices:** Tabon-Tabon due to low economic value and potential nutrient competition.
- **Shade Considerations:** Atis thrives in full sun for best flowering and fruiting, but can tolerate partial shade from taller companion trees, especially coconuts and Guavapple.
- **Spacing Recommendation:** Maintain 3–8 m spacing depending on companion tree size to ensure sunlight penetration, root space, and air circulation.

Market Demand & Acceptance

Local Demand

- Bukidnon is a strong agricultural province ("food basket" of Region 10) with high production capacity for food crops. Bukidnon Province+1
- Valencia City has functional public markets (like the Valencia Farmer's Market) that serve as local aggregation points for agricultural produce. Wikipedia
- There is growing consumer interest in *minor tropical / exotic fruits* in the Philippines. TFNet (International Tropical Fruits Network) notes that minor fruits (beyond bananas, mangoes, pineapple) are increasingly being considered for value-chain development. TFNet
- Because atemoya / cherimoya are relatively uncommon, they may be perceived as "premium" or niche fruits—this could drive higher local prices, especially through specialty markets or farm-gate sales.

Export or Value-Added Potential

- The perishability of cherimoya / atemoya is a big factor: post-harvest life is limited, especially without good cold-chain handling. Tropical Lab+1
- On the other hand, Bukidnon is positioning itself for agribusiness investment: there is a 40-ha industrial/agri-zone for food production. Bank of the Philippine Islands
- Exotic fruit demand is rising globally. While atemoya / cherimoya are relatively niche, their novelty and health appeal make them attractive for export or high-end domestic markets. FruitToday+1

Risks & Challenges

Risk / Challenge	Explanation & How It Might Impact Atis / Production in Bukidnon
Post-harvest losses	Cherimoya / atemoya are highly perishable. Without proper storage, transport, and handling, losses during marketing can be high. Tropical Lab+1
Infrastructure	Although Valencia and Bukidnon are agriculturally rich, there may still be insufficient cold-chain infrastructure, especially in rural farms. Poor farm-to-market roads or limited transport capacity can increase costs. This is a common issue for tropical fruit smallholders. FAOHome
Production risks	Diseases and pests: According to PROSEA, *Annona cherimola* is prone to root rot (bacterial wilt), fruit rot, and insect pests. PlantNet Also, some atemoya cultivars may require hand pollination for good yields. Growables
Market scale risk	Because atemoya / cherimoya are niche fruits, scaling up may be difficult unless there is reliable, consistent demand. Small-scale production could struggle without aggregation or value-added. TFNet has pointed out that value chain and postharvest capacity are barriers for minor tropical fruits. TFNet
Capital & knowledge	Investments are needed for good practices, and some growers may lack capacity. While there are incentives (e.g., greenhouses), training and cost barriers remain. PIA

Opportunities

Agri-Industrial Zone

- The Bukidnon Industrial Zone (40 ha) offers a potential hub for processing, packaging, or exporting value-added fruit products. Bank of the Philippine Islands

- Farmers producing atemoya / cherimoya could partner with processors or co-ops to scale their business.

Premium / Niche Market

- Because atemoya / cherimoya are exotic and less common, they can command premium prices in local specialty markets (farmers' markets, high-end grocery) or direct-to-consumer channels.
- There is also potential for **value-added products** (e.g., frozen pulp, sorbet, premium fruit cups) to reduce post-harvest losses and increase profitability.

Agro-tourism & Farm Gate Sales

- Given Bukidnon's scenic landscapes (e.g., Lantapan, mountain ranges) and agritourism potential, farms growing exotic fruits could integrate tourism (farm tours, pick-your-own) to diversify income.
- Direct sales at farm or via Valencia's markets can strengthen profit margins.

Sustainable / Organic Niche

- There is interest in organic and sustainable farming in Bukidnon. MindaNews
- Producing atemoya / cherimoya under organic / agroforestry systems could tap into higher-value markets, benefiting both income and ecological sustainability.

Summary (for Southern Bukidnon / Valencia)

- **Demand & Acceptance:** There is promising local demand for exotic / niche fruits like atemoya or cherimoya, especially among more affluent or health-conscious consumers. Valencia's market infrastructure (public markets) and Bukidnon's strong agricultural base support this potential.
- **Risks:** Key challenges include perishability, lack of post-harvest infrastructure, pest/disease issues, and scaling difficulty. Without proper handling, fruit losses and quality degradation could erode profitability.
- **Opportunities:** The presence of agribusiness infrastructure (industrial zone), the premium nature of the fruit, and possible integration with agro-tourism make atemoya / cherimoya attractive. Value-adding (processing), direct-to-consumer sales, or organic farming could significantly improve viability.
- **Strategic Approach:** For growers in Southern Bukidnon / Valencia, success likely requires combining good agricultural practices (disease control, pollination), strong post-harvest management, and creative market access (farm gate, co-ops, local markets, possibly agri-tourism).