

## **Local Remedies**

**Title:** Production and Marketing Strategies of Pineapple Growers in Calauan, Laguna, Philippines

**Author:** Ryan Jay V. Acula; Rommel Octavius R. Nuestro; Mark Allan L. Flores; Jayson N. Olayta; Charmyne V. Sanglay

**Based on:** Local production practices of smallholder pineapple farmers in Calauan, Laguna, Philippines, documented through field surveys and questionnaires, focusing on soil management, planting materials, fertilization, weed control, pest management, and disease control.

- **Soil and Field Management**
  - Grow pineapples in free-draining loam soil to promote healthy root development and prevent root diseases.
- **Variety Selection**
  - Use Smooth Cayenne (Hawaiian) cultivar due to its adaptability, productivity, and farmer preference in the locality.
- **Planting Material Management**
  - Use slips as planting materials because they are fast-growing, cost-effective, and capable of producing fruits earlier than other materials.
- **Growth Enhancement Practices**
  - Apply rooting hormones such as alpha naphthalene acetic acid (ANAA) or natural extracts like aloe vera to enhance early growth and plant establishment.
- **Nutrient and Fertilizer Management**
  - Apply inorganic fertilizers every two months using side-dressing methods.
  - Common fertilizers used include urea, ammonium sulfate, and complete fertilizer.
- **Weed Management**
  - Conduct regular manual or hand weeding to reduce competition for nutrients and sunlight.
- **Pest Management**
  - Use commercial pesticides to control pest infestations when necessary.
- **Disease Management**
  - Remove and destroy infected plants, including burning, to prevent the spread of diseases within the plantation.

**Title:** 10 Steps to Small Agrofruit Livelihood Technology (SALT-4)

**Author:** ATI-Cordillera Administrative Region

**Based on:** outlines agroforestry techniques for sloping lands, including pineapple as an intercrop, but provides no direct farmer testimonials or personal opinions.

- **Planting Location**

- Plant pineapple in upper 2/3 of farm (fruit tree zones) or as intercrop under developing fruit trees (e.g., with mango, chico, citrus)
- Spacing: 30 x 60 x 90 cm in rows.

- **Soil and Fertility**

- Grow in contour hedgerows system with nitrogen-fixing species (e.g., *Flemingia macrophylla*, *Gliricidia sepium*) pruned every 30-45 days for mulching/fertilization.
- Use hedgerow prunings as green manure around pineapple; supplement with manure/commercial fertilizer in a ring 20cm from trunk.

- **Pest Management**

- Prevent pests/diseases via alternating species, healthy seedlings, proper spacing, hedgerows, and fertilization; spray chemicals only if severely affected.
- Ring weed only; use weeds as mulch.

- **Intercropping and Maintenance**

- Intercrop with banana, papaya, root crops initially; continue shade-tolerant pineapple under mature trees.
- Harvest 1 year after planting, then monthly; replant skips/die-backs.

**Title:** Farm Planning and Organic Agriculture Management Practices

**Author:** Jamesly T. Andres

**Based on:** compiling research-based practices from Benguet State University experts and local organic farmers like Rogel Marzan and Jefferson Laruan for sloping Philippine farms.

- **Soil/Fertility Management**

- Build soil with 5%+ organic matter via composting, cover cropping (e.g., legumes), green manuring, and mulching to prevent erosion.
- Ring-apply manure/commercial fertilizer 20cm from trunk; use potting mix (1:1:1 soil-compost-rice hull/sand) for seedlings.

- **Planting/Propagation**

- Rotate crops (cereal-root-leaf-fruit-legume cycle) to break pest cycles and balance nutrients.
- Companion plant (e.g., onions with cabbage family); space properly (e.g., 30x60x90cm for pineapples per prior SALT-4).

- **Maintenance Practices**

- Irrigate during flowering/fruiting; thin seedlings, hill-up roots, mulch for moisture/weed control.
- Prune, trellis, and integrate animals (goats/chickens) for natural pest control.

- **Pest/Disease Control**

- Use biodiversity areas, buffer zones (trees/grasses), and biological controls; avoid chemicals.
- Fallow beds, inoculate with beneficial microbes (e.g., Indigenous Microorganism(IMO)).

**Title:** Exchange visit inspires, creates opportunities for disheartened pineapple farmers in the Philippines

**Author:** NGO

**Based on:** direct quotes/testimony from pineapple farmer Felipe Capones (Eastern Samar, Philippines)

**Reference:**

- **Propagation**
  - Start with pineapple suckers (used 500 initially).
  - Use offshoots (ratoon suckers) from mature plants as ongoing seedlings for continuous propagation.
- **Off-Season Fruiting**
  - Apply "inducers" (special fertilizers) to force flowering and fruiting even outside the normal season, enabling annual harvests instead of every 2 years.
- **Pest Management**
  - Apply innovative pest control techniques learned from Dole plantation tour—successfully saved the entire crop from infestation that would have destroyed it.

Practice Category	Key Techniques	Sources
Soil & Planting	Free-draining loam/contour hedgerows with N-fixers (Flemingia); Smooth Cayenne slips + rooting hormones (ANAA/aloe); 30x60x90cm spacing in upper slopes/under fruit trees	Calauan study, SALT-4, Andres technoguide
Nutrient Management	Urea/ammonium sulfate/complete fertilizer every 2 months (side-dress); hedgerow prunings as green manure 20cm from trunk; 5%+ organic matter via compost/legumes/IMO	Calauan study, SALT-4, Andres technoguide
Weed Control	Manual/ring weeding only; use pulled weeds as mulch; hill-up roots	Calauan study, SALT-4, Andres technoguide
Pest/Disease	Commercial pesticides	Calauan study, SALT-4,

Management	only if severe; burn infected plants; biological controls (biodiversity zones, goats/chickens); Dole tour techniques	Capones NGO, Andres technoguide
Irrigation & Maintenance	Irrigate during flowering/fruiting; intercrop initially (banana/papaya/root crops), then shade-tolerant under mature trees	SALT-4, Andres technoguide
Propagation & Harvest	Ratoon suckers/offshoots continuously; harvest year 1 then monthly; off-season inducers for annual yields	Calauan study, SALT-4, Capones NGO

### References for Local Remedies:

- Acula, R. J. V., Nuestro, R. O. R., Flores, M. A. L., Olayta, J. N., & Sanglay, C. V. (2024). *Production and marketing strategies of pineapple growers in Calauan, Laguna, Philippines*. International Journal of Advanced Multidisciplinary Research and Studies, 4(5), 496–499. Available at: [https://www.researchgate.net/publication/384552139\\_Production\\_and\\_Marketing\\_Strategies\\_of\\_Pineapple\\_Growers\\_in\\_Calauan\\_Laguna\\_Philippines](https://www.researchgate.net/publication/384552139_Production_and_Marketing_Strategies_of_Pineapple_Growers_in_Calauan_Laguna_Philippines)
- [https://ati2.da.gov.ph/ati-car/content/sites/default/files/2023-01/salt\\_4\\_brochure.pdf](https://ati2.da.gov.ph/ati-car/content/sites/default/files/2023-01/salt_4_brochure.pdf)
- <https://bsu.edu.ph/wp-content/uploads/Technoguides/Farm-Planning-and-Organic-Agriculture-Management-Pactices.pdf>
- <https://www.peopleinneed.net/exchange-visit-inspires-creates-opportunities-for-disheartened-pineapple-farmer-in-the-philippines-6070gp>

## International Remedies

**Title:** Pineapple Cultivation Guide

**Author:** Virendra M. Verna

**Based on:** United States Department of Agriculture (USDA) project emphasizing disease free seedlings, organic methods, and climate-smart practices via biotechnology, horticulture, and extension outreach to local farmers.

- **Soil and Field Preparation**

- Select well-drained sandy loam soil (pH 4.5-5.5) enriched with organic compost.
- Form raised beds (10-15 inches high) to prevent waterlogging; test and fumigate for nematodes.
- Smooth soil surface post-plowing for optimal root establishment.

- **Planting Best Practices**

- Use disease-free tissue culture seedlings or healthy crowns/slips from resistant varieties.
- Plant in twin rows on raised beds: 1.5-2 ft apart in rows, 3 ft between rows, 6 ft alleys.

- **Nutrient and Fertilizer Tips**

- Apply Nitrogen(N), Potassium(K), and Iron(Fe) frequently in small doses; low first 5 months, then boost for dark green leaves.
- Band Phosphorus(P) and Calcium(Ca) pre-planting; top-dress with organic compost and ensure post-application moisture.

- **Weed and Pest Management**

- Hand-pull or hoe weeds early to block pest reservoirs like nematodes; mulch later.
- Scout daily: Remove infested parts; prioritize neem oil/cake, biocontrols before chemicals.

- **Irrigation and Ratoon Care**

- Keep soil moist without excess water, especially early; avoid waterlogging in rainy zones.
- Post-harvest: Retain 1-2 suckers or pineapple slips per plant, chop side leaves for management.

**Title:** Pineapple Cultivation Guide

**Lecturer:** Madam Anisah Binti Mohammed

**Based on:** Standardized farming tips rather than direct input from real farmers.

- **Site and Soil Selection**

- Farmers select well-drained, slightly acidic soils (pH 4.5-6.5) with full sun exposure; clear weeds, loosen soil, and add compost for aeration and fertility.

- **Planting Practices**

- Use healthy crowns, slips, or suckers spaced 30-50 cm apart in rows 60-100 cm wide, often on ridges or raised beds to prevent waterlogging.

- **Water and Nutrition**

- Water moderately (weekly, more in dry spells) with good drainage; fertilize every 6-8 weeks using N-P-K balanced formulas or manure, avoiding excess to prevent rot.

- **Weed and Pest Control**

- Hand-weed or mulch early to suppress competition; rotate crops every 3-4 years, scout for pests like mealybugs, and use organic options like neem first.

- **Additional Farmer Tips**

- Intercrop with legumes for soil health, keep records of inputs, and harvest timely based on color change for optimal quality.

**Title:** The Ultimate Guide to Successful Pineapple Farming

**Author:** Akin Oyedotun

**Based on:** standard pineapple health maintenance tips, but they stem from general agribusiness knowledge rather than direct farmer testimonials or opinions.

- **Pineapple Health Tips**

- Prepare well-drained acidic soil (pH 4.5-6.5) with organic matter; use raised beds on slopes.
- Plant disease-free suckers/crowns at 12-18 inches spacing for airflow; apply NPK monthly.
- Mulch for weeds, irrigate evenly, monitor mealybugs/nematodes with neem oil; rotate crops every 3-4 years.



**Title:** Pineapple (Revised)

**Author:** Swiss-based NGO, Biovision Foundation and Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)

**Based on:** agroecological tips for healthy pineapple cultivation, emphasizing organic methods suitable for smallholder farmers in tropical Africa.

- **Land Prep**

- Deep plow to remove perennial weeds like couch grass; plant in friable soil during long rains for strong roots.

- **Planting**

- Use healthy shoots (400-500g); space double rows 40-60cm apart, 20-30cm between plants for airflow (70,000-100,000/ha).

- **Cultivation**

- Intercrop with legumes for nitrogen; mulch to suppress weeds; irrigate evenly without waterlogging.

- **Pests/Diseases**

- Monitor for mealybugs, nematodes; use natural controls and crop rotation every 3-4 years.

- Natural Control

- Hot water treatment: Dip planting material (suckers/crowns) in 50°C water for 30 minutes to 2 hours to eliminate mealybugs, nematodes, and Phytophthora fungi; drip-dry afterward to prevent fungal issues.

**Title:** Pineapple Farming Guide

**Author:** Entrepreneushub

**Based on:** pineapple farming guide (WordPress blog) offers basic tips for healthy pineapple growth, but lacks attribution to real farmers or their opinions.

- Soil Prep
  - Well-drained sandy loam (pH 5-6.5); plow, add manure/compost, form ridges 30-45cm high.
- Planting
  - Use healthy crowns/suckers/slips; space 30x60cm; plant during rainy season.
- Care
  - Irrigate regularly but avoid waterlogging; apply NPK fertilizers; mulch for weeds; scout for mealybugs/rot with neem sprays.
- Harvesting
  - Pick 12-18 months post-planting when base turns yellow.

**Title:** Cultural Practices for Successful Pineapple Cultivation

**Author:** Agriculture Notes by Agriculture.Institute

**Based on:** five key cultural practices for successful pineapple cultivation, focusing on irrigation, mulching, weed control, earthing up, and flowering induction.

- **Irrigation Management**
  - Apply water during dry months to maintain soil moisture for shallow-rooted pineapple plants. Use drip irrigation to deliver water directly to roots, avoiding waterlogging that causes root rot.
- **Mulching Benefits**
  - Spread organic mulch around plants to conserve soil moisture, regulate temperature fluctuations, and suppress weed growth. Stable soil temperatures enhance root development and nutrient uptake in tropical climates.
- **Weed Control Methods**
  - Hand weeding: Remove weeds near plant bases manually to protect shallow roots, ideal for young plantations.
  - Mechanical cultivation: Use shallow tillage between rows when weeds are small and soil is workable.
- **Earthing Up Technique**
  - Pile soil around plant bases to prevent lodging (plants falling over), especially important during fruit development when plants become top-heavy.
- **Flowering Induction**
  - Apply chemicals like Ethephon to synchronize fruit development across plants. Uniform flowering ensures consistent harvest timing for better market quality and yield.

Practice Category	Key Techniques	Sources
Soil & Land Prep	Well-drained sandy loam (pH 4.5-6.5); raised beds/ridges (10-45cm high) to prevent waterlogging; deep plow + compost/manure; fumigate for nematodes	Verna (USDA), Anisah, Afrimash, Biovision, EntrepreneursHub, AgInstitute
Planting Practices	Disease-free tissue culture/crowns/slips/suckers (400-500g); twin/double	Verna (USDA), Anisah, Biovision, EntrepreneursHub

	rows (20-60cm between plants, 1-3ft between rows); plant during rains for root establishment	
Nutrient Management	Frequent small N/K/Fe doses (low first 5 months); band P/Ca pre-plant; NPK every 6-8 weeks or monthly; organic compost top-dress with moisture	Verna (USDA), Anisah, Afrimash, AgInstitute
Irrigation	Moderate/weekly watering (more in dry spells); drip irrigation for root delivery; avoid waterlogging especially early growth; hot water treatment (50°C, 30min-2hr) for planting material	Anisah, AgInstitute, Biovision, EntrepreneursHub
Weed Control	Early hand-weeding/hoeing to eliminate reservoirs; mulch with organic materials/legumes for suppression; shallow mechanical tillage between rows	Verna (USDA), Anisah, Afrimash, Biovision, AgInstitute
Pest/Disease Management	Daily scouting; neem oil/cake first, then biocontrols/chemicals; crop rotation every 3-4 years; ratoon management (1-2 suckers/plant)	Verna (USDA), Anisah, Afrimash, Biovision
Maintenance & Harvest	Earthing up to prevent lodging; intercrop legumes for N; uniform flowering induction (Ethephon); harvest 12-18 months when base yellows	AgInstitute, Anisah, Biovision, EntrepreneursHub

### **References for Local Remedies:**

- <https://www.discover-suriname.com/downloads/pineapple-cultivation-guide.pdf>
- <https://www.cliffsnotes.com/study-notes/27360941>
- <https://afrimash.com/the-ultimate-guide-to-successful-pineapple-farming/>
- <https://www.infonet-biovision.org/crops-fruits-vegetables/pineapple-revised>
- <https://enterprenuershub.wordpress.com/2020/03/28/pineapple-farming-guide-%F0%9F%8D%8D%F0%9F%8D%8D%F0%9F%8D%8D/>
- <https://agriculture.institute/production-tech-fruit-crops/successful-pineapple-cultivation-practices/>