

Seven Trees, Seven Practices

Starting you forest garden with seven fast to fruit trees

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Fast to fruit trees

- Fruit trees bearing fruit in 3-4 years.
- For many new farmers establishing agroforestry or fruit tree plantings
- Provides a quick economic return and local market impact than fruit trees taking 5-7 years or longer to fruit.
- In recent years chefs on Guam have expressed the desire for more variety in local fruits.
- Offers the potential of commercial quantities of fruit in only a few years.

Land Preparation

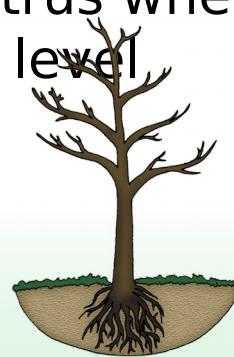
- If planting on new or overgrown land, clear unwanted vegetation but do not remove topsoil
 - If using heavy equipment, do not scrape the soil
 - Steeply sloping land should not be stripped of plant cover due to susceptibility to erosion
 - Consider using sheet mulching
- Do not operate any machinery on wet soil; this can compact the soil and negatively impact plant growth and development and also increases soil erosion

Planting Preparation

- Break up and prune any of the roots that are circling the root ball - “pot bound roots”
- Inspect roots for “j” root; make sure tap root is straight
- *“It's better to plant a \$1 plant in a \$10 hole than it is to plant \$10 plant in a \$1 hole”*

Planting and Care

- Minimum:
 - Dig a hole at least the same depth and twice as wide as the root ball
 - The crown (point where root & stem meet) should be level with the ground surface
 - Except with citrus where the crown should be above ground level



Mulch and Sheet Mulch

- Mulch or Sheet Mulch Your Plants
 - Acts as a weed barrier
 - Provides slow release of nutrients
 - Conserves water
 - Protects your plants from bushcutters
- Bushcutters
 - Often damage desired plants
 - “Bushcutter disease” - careless cuts can girdle tree; kills many trees on Guam
 - Throw up clippings and soil/rocks which can damage trees and spread disease

Keep soil and mulch away (several inches) from the base of the stem to avoid rot.



Young breadfruit tree with mulch around base

Common Causes of Plant Death

- Bushcutter damage
- Planted too deep
- Mulched too deep
- Over-watered or under-watered
- Improper shoot-to-root ratio in transplanting

Species Height

- Short Species: 20 feet and under
 - Calamansi
 - Key lime
 - Pomegranate
 - Fig
 - Soursop
- Medium to Large Species: over 20 feet
 - Mulberry
 - Breadfruit

Spacing

Fruit Trees:	Windbreak:	Orchard:
Calamansi	8-10 feet	10-14 feet
Soursop	8-12 feet	12-15 feet
Pomegranate	6-8 feet	10-15 feet
Key Lime	8-12 feet	12-15 feet
Fig	8-14 feet	12-18 feet
Breadfruit	12-16 feet	15-40 feet
Mulberry	10-14 feet	10-20 feet

Propagation

Fruit Trees:	How to Propagate:
Calamansi	Seed, Air Layering, Grafting
Key lime	Seed, Air Layering, Grafting
Soursop	Seed, Air Layering
Pomegranate	Seed, Cutting, Air Layering, Grafting
Mulberry	Cuttings, Air Layering
Breadfruit	Root shoot & root Cuttings, Air Layering
Fig	Cuttings, Air Layering

Calamansi

- *Citrofortunella microcarpa*
- Also known as Calamondin
- Drought tolerant
- Cannot tolerate waterlogged soils
- Can tolerate a wide range of soil types
- Keep crown clear of soil
- Can be used as a living fence

Calamansi

- Prune water suckers/sprouts
- Prune to an open center to improve airflow through canopy and increase light to branches
- Flowers and fruits most of the year if irrigated
- Peel can be used in animal feed mixes
- Juice can be used as a lemon or lime alternative

Calamansi



Key lime

- *Citrus aurantifolia*
- Also known as Mexican key lime
- Cannot tolerate waterlogged soils
- Keep crown clear of soil
- Can be used as living fence
- Prune to an open center to improve airflow through canopy and increase light to branches

Key lime

- Harvest when the color has changed from dark to light green, the surface is smooth and the fruit feels slightly soft to the touch
- Commonly the fully ripe, yellow limes are gathered from the ground
- Fruit is fragrant and acidic
- Used in kelaguen, finadene, jams, jellies, marmalades, and juices
- Caution: Key lime has sharp spines or thorns

Key lime



Soursop

- *Annona muricata*
- Also known as guayabano (Tagalog) and laguana (Chamorro)
- Tolerates a wide variety of soil types
- If soil is too dry, the tree will drop all its leaves; mulching and irrigation are recommended
- Plant can be easily shaped by pruning
- Flowers and fruits more or less throughout the year

Soursop

- Harvest fruit when full grown and still firm but slightly yellow-green
- If allowed to soften on the tree for too long, it will fall and break open
- Juice and pulp can be used in drinks or fruit can be dried
- Fruit and pulp may be used as animal fodder if seeds are removed
- Caution: Seeds are poisonous and the oil can cause eye inflammation



Mulberry

- *Morus nigra*
- Commonly known as black mulberry
- Tolerates most soil types
- Drought and flood tolerant
- Agroforestry uses include shade, shelter, animal fodder, as a windbreak, and as a living fence
- Year-round fruit production with irrigation

Mulberry

- Fruit is ripe when the color darkens to a deep red or purplish black
- Short shelf life
- Used in jams, jellies, marmalades, juices, sauces, and desserts
- Can be dried into a powder

Mulberry



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Breadfruit

- *Artocarpus altilis*
- Lemmai (Chamorro)
- Trees are salt and drought tolerant
- Adapted to most soil types
- Trees can be “kept low” by regular pruning
- Does well inter-planted with other species

Breadfruit

- Indicators of fruit maturity: sap dripping from fruit, bumps on surface become smooth, and color change from green to yellow
- Caution: Roots can damage structures if planted too close and can be easily damaged by mowers and other equipment
(heavy mulching recommended)

Breadfruit



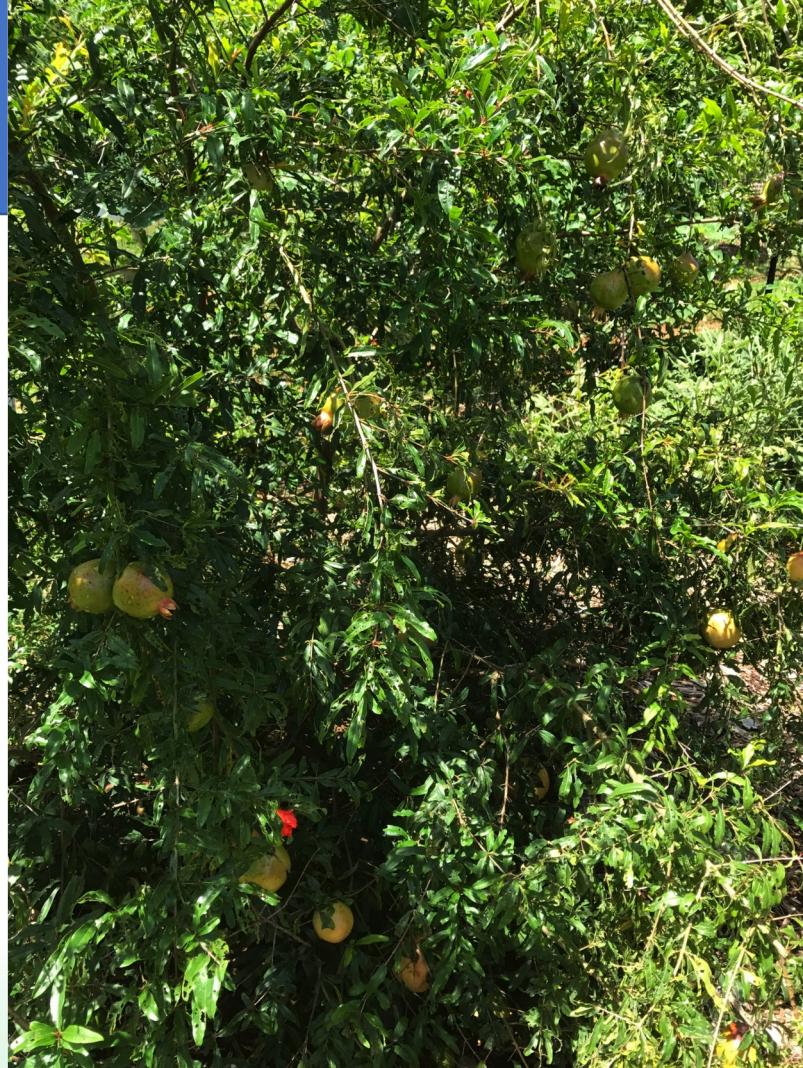
Pomegranate

- *Punica granatum L.*
- Overall a tough, dense, low growing plant ideal for barrier plantings and windbreaks
- Tolerates a wide range of soil types
- Drought tolerant
- Irrigation needed for fruit production during extended dry periods
- Fruits forms only on tips of new growth

Pomegranate

- Fruits are harvested once they turn color
- Fruits should be cut from tree – not pulled off.
- Over mature fruits will crack
- Fruits do not continue to ripen after harvest
- Flesh around seeds is eaten fresh
- Processed for juice or syrup

Pomegranate



Fig

- *Ficus carica*
- Over 1,000 cultivars of fig
- Brown Turkey and White Kadota on Guam
- Grows well in moist, but not saturated soils
- Requires frequent watering during dry season
- Advisable to prune trees to facilitate harvesting

Fig

- Can tolerate severe pruning
- Can be pruned as an espalier or kept very low to the ground
- Harvested fruits are fragile and should be placed in a container so they do not damage each other
- High in fiber
- Caution: Contains latex which may cause skin rash

Fig



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For More Information

- For more information contact your local Cooperative Extension Service at 735-2080