

How to Grow a Complete Diet with Permaculture Principles: Tropical Subsistence Gardening. 24 part class series

Oil Crops: Coconut / Niu in Hawaiian Part 16 of 24



Acknowledgements: A special thanks to Hawaiian Sanctuary, County of Hawaii Research and Development and all others involved to make these classes a reality! We are still looking for support to complete and enhance this amazing FREE program.

<http://hawaiiansanctuary.com/donate>

Introduction: Oil or fat supplies our bodies energy and helps us absorb fat soluble vitamins. Coconuts are a canoe crop that was brought to Hawaii by the polynesians. Coconuts thrive in the humid tropics at lower elevations and are excellent source of oils. Beyond its uses as food, coconut provides: fronds for thatching and weaving, wood for carving and building, shells for bowls, and husk for a very strong rope. Thus the coconut earned the well-deserved moniker “tree of life.”

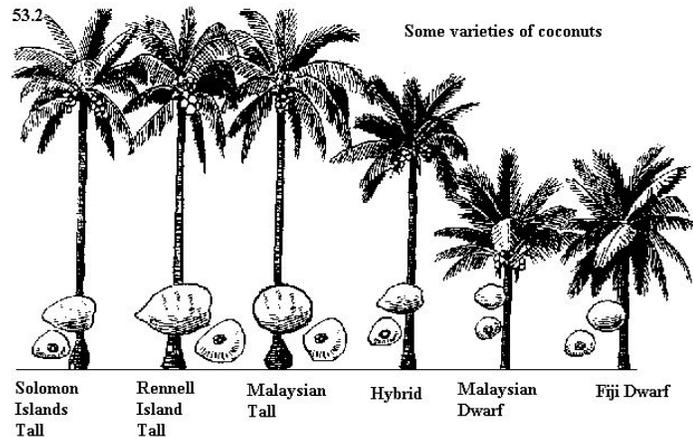
Anatomy: Tall palm 25-40 ft wide and up to 100ft tall. Dense spreading fibrous root system. Hurricane resistant.

Varieties:

Tall: up to 100 ft tall and 30-40 feet wide, bear in 5-10 yrs, lifespan 100 years, slightly higher oil content than dwarf trees, more resistant to high winds. Jamaican, Malaysian and more varieties exist with green, bronze, yellow and gold nuts.

Semi Dwarf (hybrid): somewhere in between tall and dwarf

Dwarf: up to 50 to 80 ft tall and 25-30 ft wide, bear in 3-6 yrs, Lifespan 50 yrs, slightly higher yield. Many varieties exist: Samoan dwarf, Malaysian dwarf, Fijian dwarf, etc.

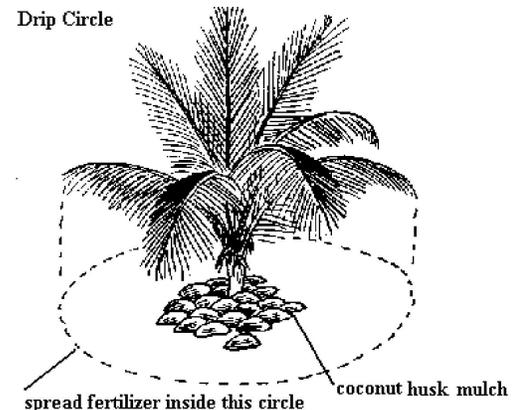


Niche in a Food Forest: Full sun, overstory tree, emergent palm layer, these tall palms may grow much taller than the other overstory trees creating the layer below them.

CAUTION FALLING COCONUTS: can be deadly, plant away from dwellings, plant beds around base of trees so people don't walk directly under the trees. Post warning signs, and/or trim all nuts from high traffic area trees “hotel trim”. Site trees properly when planting to avoid problems in the future.

Propagation: Coconuts are planted by setting a mature intact brown nut on the ground, burry 1/3 if desired.. Seed should be selected from a top quality healthy productive parent tree with the growth type you are seeking (eg. dwarf or tall). Coconuts are fairly true to seed, meaning if you plant a seed you will tend to get a tree closely resembling the parent tree.

Cultivation: Plant 30-40 feet apart. 20ft is plantation spacing. Mulch well with fronds, husks, etc. Benefits from application of salt up to 2 lbs per tree per year (separated into two or more applications) can increase production up



to 30%. Ideally under 1000 ft elevation. Trees may grow at higher elevations but will grow slowly and may produce little if any fruit.

Diseases / Pest Control: Crown rot is currently the most serious disease affecting coconut trees in Hawaii. Affected trees: central frond dies then the rest of the tree dies. Cut down infected trees and burn or bury away from other coconut trees, to reduce the chance of this fungal infection spreading to other coconut trees.

Harvest: Ripe coconuts will fall from the tree and can be collected off the ground. Young coconuts can be harvested by climbing usually with the help of a climbing apparatus. The racks of young coconuts are gently lowered to the ground using a rope so they do not break.

Usage: Coconut can be used in almost every stage of ripeness. The water of young coconut (drinkers) is a good source of potassium and electrolytes. The young (jelly) meat can be eaten and when it becomes half-ripe (spoon meat) can be used raw as a noodle substitute. The mature brown coconuts have hard white crunchy meat (where the highest fat content is). When hard coconut meat is dried it is called copra. Good brown mature nuts will have a splashing sound when shaken and no sign of rot at the stem. Coconut cream and milk are made from grating mature coconut meat and squeezing it in a strainer bag or cloth to extract the liquid from the pulp. Hot water can then be added to the same pulp and it can be squeezed again to make a second (more dilute) pressing. Coconut oil can be made from the milk.

Storage: Mature brown nuts can keep for several months, store out of direct sunlight in a cool dry shady place. Young green coconuts also need to be kept in the shade and will last around 1-3 weeks depending on age.

Preservation: Mature kernel can be sliced or grated and dried, or toasted to preserve it. Freshly made coconut milk can be frozen for later use as its shelf life under refrigeration is only a couple days.

Important Oil Crops for Growing a Complete Diet at Home in Hawaii

Nutrient Content per 100g

<u>Crop</u>	<u>Fat</u>	<u>Protein</u>	<u>Magnesium (%RDA)</u>	<u>Iron</u>	<u>B-6</u>	<u>Calcium</u>	<u>Carbs</u>
Coconut	33g	3.3	8%	13%	5%	1%	15g
Avocado	15g	2g	7%	3%	15%	1%	9g
Mac Nut	76g	8g	32%	20%	15%	8%	14g
Pili Nut	80g	11g	75%	19%	5%	14%	4g

Next Class: June 1

Sweet Tropical Fruits: Papaya, Lilikoi, Citrus, Pineapple part 17 of 24

This class will focus on Papaya, Lilikoi, Citrus, and Pineapple, which are easy to grow and nutritious. Many other more exotic sweet fruits will be covered as well.

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