



**Medicine at Your Feet:  
Healing Plants of the  
Hawaiian Kingdom**

**Single Plants: A PDF file**

**David Bruce Leonard, L.Ac.**

**Medicine at your Feet:**  
**Healing Plants of the Hawaiian Kingdom**  
***Artocarpus communis* ('Ulu)**

**by David Bruce Leonard, L.Ac.**

*"A weed is a plant whose virtues have not been discovered"*

Ralph Waldo Emerson

Just what you need... another  
Roast Duck Production



*"A peasant must stand a long time on a hillside with his  
mouth open before a roast duck flies in."*

-- Chinese proverb

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E kala mai, please do not pirate (copy or give away) this PDF file. It has taken eight years to research and write the book from which this material is taken. Your purchase allows us to continue research on the healing properties of medicinal plants and the restoration of our native Hawaiian ecosystems. Ten percent of the profits from this work are given to Hawaiian cultural and environmental restoration groups.

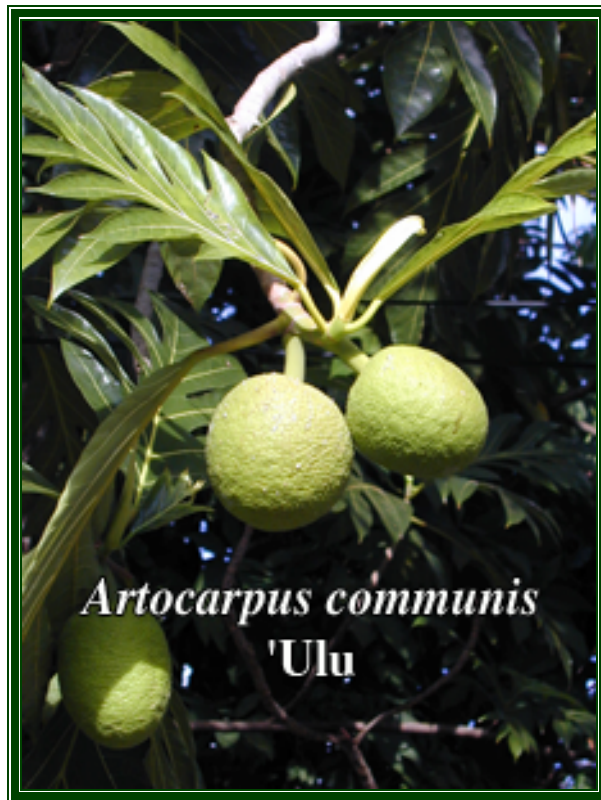
Thank you for your kind support of this work and our 'Āina. Aloha no kākou.

Mahalo,

David Bruce Leonard

## **WARNING**

**Caution: Many plants used as medicine are poisonous! They can kill you. Never attempt to use herbal medicine without the guidance of a traditional elder or a licensed healthcare provider. If you wish to act on some of the information in this book, you must consult with a professional. Do not try to be your own doctor.**



## ***Artocarpus communis* ('Ulu)**

**PLANT NAME:** *Artocarpus communis*

**OTHER NAMES:** *A. altilis*, *A. incisa*

**SIMILARLY USED SPECIES:** *A. odoratissinus*, *A. elasticus*, *A. elastica*, *A. mariannensis*, *A. integer*, *A. cumingiana*, *A. lakoocha*, *A. elastica*, *A. vrieseanus*

**COMMON NAMES:** 'Ulu [Hawai'i]; **breadfruit** [English]; fruit a pain [French]; fruta pao, pao de massa [Portuguese]; broodvrucht, broodboom [Holland]; pan de ano, pan de palo, topan [Venezuela]; mazapan (seedless), castana (with seeds) [Guatemala, Honduras]; marure [Peru]; castano de malabar (with seeds)[Yucatan]; panapen (seedless), pana de pepitas (with seeds) [Puerto Rico]; timadang, kadazan, dusun (*A. odoratissinus*) [Borneo]; suku (seedless), kulur (with seeds) [Malaya & Java]; sa-ke, [Thailand]; rimas (seedless) [Philippines].

**NOMENCLATURE:** It doesn't resemble bread, nor does it taste like a fruit.

**FAMILY:** Moraceae (Mulberry family).

**PLANT PART USED:** All of it. The male flowers are called ule'ulu (breadfruit penis), and the female flowers are called 'ula pua (breadfruit flower).

**TOXICITY:** None noted

**CAUTIONS AND CONTRAINDICATIONS:** Some varieties of 'ulu are purgative if eaten raw.

**PREPARATION OF MEDICINE:** I have used 'ulu almost exclusively as food, and have little clinical experience with it as medicine.

**STATUS IN HAWAII:** Polynesian introduction.

**WESTERN FUNCTIONS REPORTED:** **Anodyne** (*A. altilis*) [Trinidad]; **antibacterial** (root bark); **antitumor**; **aperient** (*A. elastica*) [Malaya]; **astringent** (root) [Pacific Islands]; **contraceptive** (*A. elastica*) [Java]; **hemolytic** (leaves); **laxative** (*A. altilis*) [Dominican Republic]; **masticatory** (*A. cumingiana*); **purgative** (root) [Pacific Islands]; **styptic** (*A. cumingiana*); **vermifuge** (*A. communis*) [Samoa].

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## 'Ulu Cross-Cultural Medicinal Uses

### CARDIOVASCULAR

- **High blood pressure** (yellow leaf decocted) (*A. altilis*) [Bahamas, Haiti, Trinidad, West Indies].
- **Chest pain and vomiting** from heart problems [South Pacific].

### DERMATOLOGICAL

- **Boils, abscess, and skin infection** (*Artocarpus* spp. sap topical) [Dominican Republic, Haiti, Hawai'i, Malaya, Java, Samoa, Tahiti & Tonga (leaf ash, macerated root, or latex topical)].
- **Cracked-skin & dermatosis** (*A. communis*) [Hawai'i, Java].
- **Burns** (*A. altilis*) [Haiti].
- **Rashes** (sap topical) [Tahiti, Tonga].

### DIGESTIVE

- **Stomach pain** (*Artocarpus* spp. diluted latex internal) [Samoa (bark), Solomon Islands, Tonga (bark)]; **diarrhea or dysentery** (diluted latex or roots boiled internal) [Borneo, Java, Pacific Islands, Samoa]; **vomiting blood** [South Pacific (juice from young fruit)].
- **Fish poisoning** [South Pacific (leaf sprouts), Micronesia (sap from the shoots)].

### ENDOCRINE

- **Diabetes** (yellow leaf as tea) [Trinidad, West Indies].

### HEAD AND THROAT

- **Headache** (*A. communis*) [Bahamas (leaves poulticed on head for headache); Samoa (bark), Pacific Islands (bark)].
- **Toothache** (toasted flowers topical on gums) (*A. communis*, *A. integra*) [Java, Malaya]; **thrush** (crushed leaf buds & latex topical on tongue) [Bahamas, Trinidad, Pacific Islands]; **tonsillitis** [Tahiti].
- **Eye problems** (*A. communis* leaf or petiole juiced, topical) [Futuna, Samoa]; **puncture wounds to the eyes** [Micronesia (sap)].
- **Ear Infections** (leaves juiced or diluted latex topical) [Pacific Islands].

### INFECTION

- **Herpes** (*A. communis*) [Amboina]; **fever** [Bahamas, Malaya, Samoa, Sumatra]; ashes of leaves topical for **infection** [Hawai'i].

## HEPATIC

- **Liver disease** [Taiwan].

## LYMPHATIC

- **Enlarged spleen** (*A. communis*) [Java]; **inflamed spleen** (*A. lakoocha*) [India];

## MUSCULOSKELETAL / TRAUMA

- **Wounds** [Hawaii, Java, Samoa, Tahiti (sap topical), Tonga (sap topical)]; **fractures, broken bones** [Fiji (*A. altilis*); Pacific Islands (latex topical)]; **bone pain** [South Pacific (stem bark juice)]; **sprains, contusions, swelling** [Samoa (*A. communis*), Tahiti (sap)]; **spasms** [South Pacific (leaf sprouts)].
- **Back pain & sciatica** (latex topical) [Pacific Islands, Samoa (*A. communis*) Java (*A. elastica*)]; **rheumatism** (*A. altilis*) [Haiti]; **gout** (*A. altilis*) [Haiti].

## ONCOLOGY

- **Tumor** (fruit crushed topical) (*A. altilis*) [Brazil].

## PEDIATRICS

- **Crushed leaves for thrush** [Hawai'i].
- **Pediatric anal thrush** (smoke from a burning branch, topical) [Samoa, Tonga].
- **Cough in children** [Polynesia].
- **Childrens facial rash** (bark infused topical) [Tonga].

## PSYCHOSPIRITUAL

- In old Hawai'i, 'ulu was considered a symbol of creation and the generosity of the Creator.
- The volcano goddess Pele, said to be angry with King Kamehameha I for not making offerings to her, destroyed his 'ulu orchard in a volcanic eruption.
- Near Moanalua Gardens in Honolulu grew an 'ulu tree from which the spirits of the dead leaped into the afterlife.
- A Hawaiian hero named Niheu was said to have stolen a breadfruit from a god who had used it to roll across the underworld causing thunder.
- Both *Cocos nucifera* (niu / coconut) and *Artocarpus communis* ('ulu / breadfruit) are kinolau (physical manifestation) of Kūka'ilimoku (Kū), the war god. It is said that Kū was married to a Hawaiian woman and had a family with her. One year there was a drought and they were without food. Kū placed his head in the earth and his body became an 'ulu tree (or a niu palm, depending on who you ask). The tears of his wife watered the plant and gave it life. Thus he sacrificed himself and bore food for his family to eat. Unlike other kinolau of Kū, 'ulu was not kapu for women.
- 'Ulu is also said sometimes to represent the goddess Haumea.

## REPRODUCTIVE

- **Post partum infections** [South Pacific (stem bark juice)]; **post partum weakness** [South Pacific (roots)]; to help **expel afterbirth** [Polynesia].

### RESPIRATORY

- **Asthma** (yellow leaf decocted) [West Indies, Trinidad, Bahamas]; **cough** [Tahiti]; **difficult or painful breathing** [South Pacific (root juice or young fruit juice)].
- **Tuberculosis** (*A. elastica*) [Java].

### URINARY

- **Decreased urination** [Trinidad (*A. altilis*)].
- **Blood in the urine** [Tahiti].
- **Urinary problems** [Samoa (root or bark infused)].

### VETERINARY

- **The leaves and uncooked fruit are fed to livestock and fruit peelings are used to fatten pigs** [Hawai'i].
- **Fractured bones in animals** (*A. lakoocha*) [India].

### OTHER MEDICINAL USES

- **Recurring illness** [Tonga (bark)].
- **Abdominal pain** (crushed stem tips internal) [Cook Islands].

### USE AS FOOD:

- The uses of breadfruit as food are unlimited, although in old Hawai'i it was not a primary food but a secondary one. It was made into poi, baked in an imu (underground "oven"), and over ripe 'ulu was also made into a pudding called pepeie'e 'ulu. This could be dried and if put in the sun occasionally it could last for months.
- 'Ulu may be eaten ripe as a fruit or unripe as a vegetable, although (*caveat emptor*) some varieties can cause vomiting if eaten raw.
- Ripe pulp is mixed with coconut milk, salt and sugar to make a pudding.
- In Melanesia and New Guinea, 'ulu seeds are called "breadnut" and are roasted or boiled like a chestnut.
- It was possibly used as baby food. The fallen male flower spikes are sometimes candied.
- In other parts of Polynesia, 'ulu was specially prepared by a young male and stored in pits (called mā) and lined with *Cordyline* spp. (la'i) leaves as a hedge against famine. The breadfruit would ferment and could last years. The young man who would mash the Breadfruit with his feet had to be specially circumcised and abstain from sex.
- A delicious use of breadfruit is to steam it, marinate it in coconut water or coconut milk and orange juice, and then lightly sauté it.
- In Barbados and Brazil highly nutritious breadfruit flour is mixed with wheat flour and made into bread. In Jamaica the flour is made into breakfast porridge.

### OTHER USES:

Arrow poison (*A. bracteata*) (?) [Malacca].

Breadfruit leaf designs are often used in Hawaiian quilt patterns.

**Starch:** In Central and South America, the starch has been explored for use in textile manufacturing.

**Wood:** The wood of *Artocarpus communis* has uses as timber for houses, canoes, drums, surfboards, furniture, statues (ki'i), firewood, & poi boards (papa ku'i ai). It is resistant to termites and marine worms. It was used in canoes (wa'a) for gunwales and bows.

'Ulu surfboards (papa he'e nalu) were stained black. After use, they were dried in the sun and oiled with coconut oil (this helped waterproof the board). They were then wrapped in kapa and hung in a dry place for storage.

**Sap:** The sticky sap is used as an adhesive and caulk for catching birds, sealing canoes, and joining gourds into a drum. In Kosrae the sap is mixed with coconut oil to make a kind of "flypaper" and used as "chewing gum" in the Caribbean and Hawai'i.

**Bark:** The bark is used for cordage and the inner bark was made into a coarse kapa cloth called pō'ulu. The cordage has been used for shark nets and Water Buffalo harnesses.

**Leaves:** Used to wrap food and as livestock feed. The dried leaves have been used as fishing kites. The sheath of the leaf (malo 'ulu) was used as a type of "sandpaper" for finishing wooden bowls. The leaf pattern is also a common theme in Hawaiian quilt making.

**Male flowers:** Used as mosquito repellent [Vanuatu (dried flowers burned)]. The male flower was mixed with *Broussonetia papyrifera* (wauke) fiber to make elegant malo (loincloths). The flowers were used as a yellow to brown dye [Hawai'i].

**CONSTITUENTS:** Alpha amyryl, artocarpin, artocarpine, beta amyryl acetate, cycloaltilisin, cycloartenol, cycloartenone, cycloartenyl acetate, cyclomorusin, flavonoids, folic acid, hydrocyanic acid, lectin, linoleic acid (seed oil), linolenic acid (seed oil), oleic acid (seed oil), papayotin (enzymes), pectins, starch, vitamin C,

#### **CROSS-CULTURAL COMBINATIONS:**

**Skin ulcerations or mouth sores:** The sap with powdered *Cyperus laevigata* (makaloha) and powdered wood of *Diospyros spp.* (lama) [Old Hawai'i].

**Skin disease and boils:** The sap with *Cassia occidentalis* and tobacco ashes [Old Hawai'i].

**Shingles:** Leaf ashes with banana sap [Cook Island Maoris].

**Post partum weakness:** The bark with *Citrus sinensis* (moli kai) leaves [Tonga].

**Thrush:** The leaf buds were mixed with 'alaea (iron oxide), and put in the mouth topically. A small fish called aeāea was then eaten [Old Hawai'i].

**RANGE:** Global distribution near the equator. Probably native to Java

**HABITAT:** Likes it hot and moist: temperature of 60° to 100°F, rainfall around 80 to 100 in per year with humidity of 60 - 80% Likes fertile, deep, and well drained soil, but some seedless varieties do well in sandy areas.

#### **GATHERING:**

- Sticky. Gather when the fruit begins to "weep." There is an old Hawaiian proverb: *He has become a breadfruit that oozes gum.* (He has become wealthy) Breadfruit sap can stain, and will often spew forth its "wealth" on your brand new seat covers, so cover your covers. Cooking oil rubbed on the hands before handling may prevent staining of the skin.

- Do not climb breadfruit trees to gather 'ulu, the branches are known for breaking off.
- Gather in the summer, June, July and August. Some trees have a brief winter season.

**PROPAGATION & CULTIVATION:** Propagate by root cuttings. Will bear fruit within 5-7 years.

**RESEARCH:**

- Flower inhibits arachidonic acid-induced ear edema in rats [Koshihara Y 1988].

**NOTES 'N QUOTES:**

- Legend has it that the first breadfruit trees were brought in the 1100s by chief Kahai from an island in Samoa called Upolu. They were then planted at Kualoa on O'ahu for another Mō'i (chief).
- In old Hawai'i there was a special class of Kahuna (experts) called "Kia Manu" (bird catchers). They would catch specific birds whose feathers were then sewn into the cloaks of the Ali'i (royalty). They would use either the sap from the 'ulu tree or the pāpala kēpau (*Pisonia* spp.) to catch the birds on a long stick. After a few feathers were plucked from the birds, it is said that (by order of Kamehameha I) these Kahuna would then use kukui oil to release the birds' feet from the sticky sap, freeing them.
- The first 'ulu was seen by Europeans in the Marquesas in 1595.
- Captain Cook's botanist, Solander, was introduced to breadfruit in Tahiti in 1769 and raved about it back in England. As a result, King George III sent Captain Bligh to the Pacific to propagate and collect Breadfruit. H.M.S. Bounty was filled with breadfruit during the ill-fated voyage when officer Fletcher Christian and the crew mutinied in 1788. Bligh survived, and within four years of the mutiny, he had returned to Polynesia and delivered 1200 breadfruit trees to Jamaica.
- Coming across a breadfruit tree while hiking is always a gift. Some of my most memorable meals have included 'ulu as the main entrée. It is said that when a Marquesan child was born, the family would plant one coconut palm and one breadfruit tree, and that would supply enough food for that person for life.
- 'Ulu is technically not a fruit but a "collective" fruit, similar to noni or pineapple.
- 'Ulu trees are thought be native to the East Indies, although speculation ranges from Western Micronesia to New Guinea. They can grow to 30 - 80 (?) feet tall, with up to three-foot leaves and ten-pound fruits. Trees can produce 25 - 200 fruits per year.
- A close relative of the breadfruit is called jackfruit (*Artocarpus heterophyllus*) and it is native to India.
- Kahanu Gardens in Hana, Maui, grows nearly 100 varieties of breadfruit.
- A long pole with a hook on the end called a lou was used to pick 'ulu fruit.
- Legend has it that on Kauai some breadfruit trees were planted by a bow-legged menehune with a deep voice. (Quite an image...)
- In old Lāhainā there was a young man named Kaulā'au who was the son of the ruling chief of Maui. Being kolohe (mischievous), he would spend his time uprooting breadfruit trees. As a punishment he was sent to the island of Lāna'i. Lāna'i was uninhabited at the time because it was believed to be haunted with evil spirits. Not to be outdone, Kaulā'au, hid from these spirits in 'ulu trees and used 'ulu sap to blind them. Eventually he was allowed to return to Lāhainā.

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