



Cordyline fruticosa (Lā'ī / Ti)

PLANT NAME: *Cordyline fruticosa* (L.) A. Chev.

OTHER NAMES: *Cordyline terminalis*; *Dracaena terminalis*.

COMMON NAMES: La'ī, ki [Hawai'i]; ti [USA]; asikuga [Solomon Islands]; cana la india [Venezuela]; Dracena, bloddracena [Sweden]; jeluang [Sumatra]; litik, idahan [Borneo]; mak pu mak mia [Thailand]; sawang [Borneo]; si [Tonga]; ti kouka, cabbage tree (*Cordyline australis*) [New Zealand].

NOMENCLATURE: The name *Cordyline* comes from "kordyle," the Greek word for club. This is a reference to the root ball that is club-like. The epithet "*terminalis*" describes the flowers resting at the terminal end of the leaf cluster. The term "cabbage tree" refers to the fact that the sailors of Captain Cook ate the young shoots of *Cordyline* like cabbage.

FAMILY: Agavaceae.

CATEGORY: Clear heat, cool the blood.

PROPERTIES: Bland, sweet, cool.

PLANT PART USED: Flower, leaf, root.

TOXICITY: Some leaves are reported to contain calcium oxalate raphides, so they should be cooked. However, the young raw leaf shoots are sweet and edible.

CAUTIONS AND CONTRAINDICATIONS: Not recommended in pregnancy until more research is done.

ENERGETIC CAUTIONS: Caution with cold Spleen / Stomach~.

PREPARATION OF MEDICINE: Preparation: Infused, decocted. Used fresh. Gather flowers in summer. Roots and leaves can be gathered all year. Leaves are "de-boned" by removing the midrib (kua) and the shiny side (the "alo" side) is placed against the skin.

DOSAGE: Dosage: Leaves 6-10 grams, Roots 3-5 grams, Flowers 10-15 grams.

WESTERN FUNCTIONS REPORTED: Antiseptic; aphrodisiac; depurative; diuretic; febrifuge; hemostatic; laxative; purgative; and tonic.

TRADITIONAL CHINESE ENERGETIC FUNCTIONS (~ = extrapolated):

- 1) Cools the blood and stops bleeding.
- 2) Clears heat, quells fire.
- 3) Reduces swelling.
- 4) Clears the lungs and opens the chest.
- 5) Clears lower burner damp heat.

Lā'ī (Ti) Common Medicinal Uses

- Blessings & Offerings
- Lung infections
- Bandages
- Topical for fevers and headaches

Lā'ī (Ti) Cross-Cultural Medicinal Uses

CARDIOVASCULAR

- Bleeding [Hawai'i]; bleeding hemorrhoids [China].

COSMETIC

- **Baldness** [Fiji (root)].

DERMATOLOGICAL

- **Skin ailments** (juiced); **dermatosis** [Malaya].
- Topical for **boils** [Hawai'i]; **burns** [Samoa].
- **Eczema** [Fiji (leaf juice)].

DIGESTIVE

- **Indigestion** [Java]; **stomach problems** [Caroline Islands].
- **Abdominal disease and pain** [Fiji (leaf juice), Samoa, Tahiti]; **gastritis** [Fiji (leaf juice)]; **lower chest pain** [Fiji (leaf bud)].
- **Diarrhea** [Malaya, Samoa, Tahiti]; **enteritis, dysentery** [China, hawai'i, Malaya].
- **Severe constipation** [Hawai'i].
- "Lump in the stomach" [Hawai'i].

HEAD AND THROAT

- **Eye problems** [Samoa, Tonga]; **eye strain and inflammation** (juice; unfurled terminal leaves stirred in water and used as an eye wash) [Hawai'i]; **eye infection** [Fiji (leaf juice)].
- **Gingivitis, gum abscess, and toothache** [Fiji (root), Sumatra, Tonga (leaf with oil)]; **laryngitis** [Fiji (root)].
- **Headache** [Hawai'i (leaf topical)].
- **Nasal polyps** [Hawai'i (flowers juiced and snorted)].
- **Earache** [Fiji (leaf juice), Samoa, Tahiti].

HEPATIC

- **Liver cancer** [China]; **malarial fevers** [Malaya].

INFECTION

- **Fevers, dry fevers** [Hawai'i (leaves topical), Samoa (leaves infused), Tonga (leaf juice), Trinidad]; **smallpox** [Malaya, Philippines]; **abscess** [Tahiti, Tonga].

LYMPHATIC

- **Elephantiasis** [Samoa].

MUSCULOSKELETAL / TRAUMA

- **Arthritis** [Hawai'i, Malaya, Samoa]; **back pain** [Hawai'i]; **gout** [Samoa]. For **rheumatic pain**, a Hawaiian "hot pack" is made with heated leaves and sometimes heated "lomi stones" wrapped in lā'i leaves and applied topically. Also **used for massage** in Samoa.
- **Traumatic injury, broken bones** [Hawai'i]; **as a bandage** [Hawai'i (terminal leaf unfurled)]; **wounds** [Hawai'i, Malaya, Samoa].

- For **blisters on the feet** a leaf can be placed into the lining of shoes. **Burns** [Cook Islands (topical, leaves infused)].
- **Swelling** [Samoa (leaves infused)].
- **Aching limbs** [Tonga (leaf juice)].

NEUROLOGICAL

- Leaves infused for **inflammations** [Samoa]; **swelling and neuritis** [Hawai'i].

ONCOLOGY

- **Lung tumors** [China], **growths** [Hawai'i].

In New Guinea, warriors placed their life spirits into a red lā'i plant before going off to battle, and it was a "Wise Woman" tradition for a wife to place a red *Cordyline* flower on the outside of her house to let her husband know when she was menstruating.

PARASITES

- Used to kill "guinea worms" [Fiji (young shoots)].

PEDIATRIC

- **Croup** [Samoa].

PSYCHOSPIRITUAL

- **Blessings and purifications, offerings** (ho'okupu) [Hawai'i].
- **For exorcisms, to ward off evil spirits, to dispel curses** with pa'akai (Hawaiian salt) [Hawai'i] and to **relieve astral possession** (occult traditions) [USA]. Some Hawaiian women have been known to wear lā'i leaves under their bras for protection.
- **Agitated psychological states** [Hawai'i (leaves brushed down the body)]; **insanity** [Malaya]; and the "evil eye" [Philippines].

REPRODUCTIVE

- **Venereal disease, vaginal discharge, "groin swelling"** [Hawai'i]; **scrotal swelling** [Samoa]; **amenorrhea** [Trinidad]; **pregnancy** [China, Hawai'i]; **threatened miscarriage** [China].
- **Post partum sickness** [Fiji (stem juice)].
- **To expel afterbirth** [Fiji (stem juice)].

RESPIRATORY

- **Asthma** (flowers and leaves) [Hawai'i, Samoa].
- **Cough** [Fiji (leaf juice), India, Malaya, Trinidad]; **common cold** [Fiji (leaf juice), Samoa].
- **Chest congestion, bronchitis, sticky phlegm** ("pa'a") [Hawai'i (leaves and shoots), Samoa].
- **Shortness of breath** [Samoa].
- **Tuberculosis, cough with blood.**

URINARY

- **Urinary complaints** [Samoa].

OTHER MEDICINAL USES

- A body cover or a "girdle" was made with the leaves **to induce sweating** [Hawai'i].
- **Inflammation** [Samoa (leaves infused), Tonga (root)].

USE AS FOOD:

- The lā'ī roots were boiled or baked and made into food, a sweet candy, and into a fermented drink (see below).
- The leaves were used in Hawai'i to preserve breadfruit. Also used for cooking in underground ovens (called an 'imu) in Hawai'i, and as a sweetener in Fiji.
- While the leaves of various introduced and native New Zealand *Cordyline* reportedly have been eaten by the Maori [Cambie 2003], it would be hard to find an edible preparation for lā'ī leaves unless one is eating the young shoots.



Cordyline fruticosa: Lā'ī in native forest

OTHER USES:

- The most sacred of all Hawaiian plants, lā'ī leaves have been used as wrappers, house thatching, sandals, cheerleader pom poms, plates, cooking utensils, rain coats, cordage, bandages, and almost anything else you can imagine.
- Lā'ī was used to make whistles, balls, and even used for sledding (holua) down muddy or grassy slopes.
- Used to wrap meat or yams before cooking in an underground oven (imu).
- As fringing for fishnets and to add spiritual power (mana) to fishing lures.
- Used as a lei carrier.
- In New Zealand the Maori used lā'ī to make string, rope, and even paper.
- In Hawai'i, stones wrapped in lā'ī leaves are often seen placed along hiking trails as a blessing. This is a popular activity among non-Hawaiians.

CONSTITUENTS: Imidazole alkaloids, linoleic acid, saponins, sarsapogenin, smilagenin, sterols, tyramine.

Lā'ī (Ti)**Local Combinations**

Bronchitis with sticky phlegm: Young leaves. Add *Commelina diffusa* (honohono / wandering Jew).

Dry cough: Young leaves. Add *Hibiscus tiliaceus* (hau).

Lā'ī (Ti)**Cross-Cultural Combinations**

Please note some of the ingredients in the following combinations are toxic! Do not self-administer without the supervision of a licensed practitioner or an experienced Elder.

To clear heat and reduce inflammation: With *Solanum americanum* (pōpolo) [Old Hawai'i].

Common cold, fever, earache and headache: With *Solanum americanum* (pōpolo) [Old Hawai'i].

As an emetic (causes vomiting): With *Ipomoea* spp. (morning glory) to clear the lungs [Old Hawai'i].

As a laxative: Juiced and mixed with castor oil [Cook Islands].

Boils: With heated *Morinda citrifolia* (noni) [Hawai'i].

Eye swelling (mata pupula) from supernatural causes: With *Euodia hortensis* (uhi) [Tonga].

Asthma: Flowers used as food, mixed with poi or potato [Hawai'i].

Nasal polyps and nose ailments: Juiced with *Zingiber officinale* ('awapuhi pākē / ginger), Liquid snorted with fern fiddleheads (probably *Cibotium* spp. - hāpu'u) as a "cotton ball." [Hawai'i].

RANGE: Globally, tropics and sub tropics. Native to tropical Asia, or possibly the Himalayas.

GATHERING: Kinolau of Kāne and possibly Lono. When possible, I always try to gather lā'ī before other herbs and use it as a gathering lei and medicine bundle. The lei may be offered as a gift to Wao Akua (the forest), or worn to purify the gatherer. As a medicine bundle, it is given to the patient, who removes the herbs for preparation and then replants the "wrapping" in their yard, where it will grow as a reminder of their healing process and relationship to the divine.

PROPAGATION & CULTIVATION: Place a broken stem in the ground and watch it grow.

RESEARCH: Constituents in *Cordyline terminalis* inhibit human breast cancer cells in vitro [Ooi 1993].

"... grows at the place of promising with the highest god.... as man lives or dies the Sawang (*Cordyline*) is used. People always erect it. If there is a promise between the living the wood must be planted, when there is a promise with the dead it is finally thrown into the river. The Sawang is planted for the newly married, for the dead it is thrown into the water."

-- A Ngaju, Borneo ritual practitioner

NOTES 'N QUOTES:

- A symbol of purity and spiritual power in ancient (and modern) Hawai'i, lā'ī is planted around houses, made into healer's leis, and used in ceremonial blessings. It was often grown at temples of the medicine god Lono and the hula goddess Laka. Temples to Lono were thatched with lā'ī leaves and those to Kū (the war god) were thatched with other plants.
- The first Hawaiian settlers brought lā'ī as a canoe plant. It is lovely and indispensable to Hawaiian herbalists. The green lā'ī is sacred to Hawaiians, other varieties are sacred in Malaysia, Philippines, Indonesia, New Guinea, and other places in Polynesia. Red lā'ī is sacred in many parts of Malaysia, and the Iban of Borneo plant both red and green lā'ī after certain ceremonies. In Indonesia green lā'ī is used for white magick

and red lā'ī for black magick. There are almost fifty varieties of *Cordyline* grown by the Maenge of New Britain including thick and thin, striped and mottled leaves. These include a kaleidoscope of red, green, yellow, black and purple leaves.

- Legend has it that a lā'ī stalk was used to test the waters of Waipi'o stream to protect against a shark that lived there.
- A "white lightning" called "Ōkolehao" (bearing a remarkable resemblance to an industrial solvent) was distilled in old Hawai'i. "Ōkolehao" means "iron ass" in Hawaiian, perhaps an *indication* that this beverage burns upon both entry and exit.





Curcuma longa ('Ōlena / Tumeric)

PLANT NAME: *Curcuma longa* L.

COMMON NAMES: 'Ōlena ("yellow") [Hawai'i]; **turmeric** [English]; yu jin ("constrained gold" - tuber), jiang huang ("ginger yellow" - rhizome) [China]; açafrao-da-india [Portuguese]; achirilla [Colombia]; ago, ango [Samoan, Tongan]; azafrán de la india [Spanish]; avea [Fiji]; cu nghe (fresh), bot nghe (dried) [Vietnam]; dilaw [Tagalog]; 'ena [Marquesas]; geelwortel [Holland]; gelbwurz [Germany]; gurkemeie [Norway]; gurkemeje [Denmark]; gurkmeja [Sweden]; haldi [Hindi]; halodhi [Assami]; halud [Bengali]; haridra, gauri [India]; hsanwen [Burma]; kanghwang [Korea]; keltajuuri [Finland]; kha min [Thailand]; klacze kurkumy [Poland]; kunyit [Malaysia]; kurcum [Arabia]; manjal [Tamil]; manjano [Swahili]; re'a [Tahiti]; renga [Cook Islands]; romiet [Khmer]; safran des indes [French]; tærmerik [Iceland]; ukon [Japan]; yuquilla [Costa Rica]; zholty imbir [Russia].

Status:
**Polynesian
introduction.**
No pest factor.

Habitat:
**Wet, shady,
rich soil to
3000'.**

PHARMACEUTICAL NAMES: Tuber *Curcumae* / *Rhizoma Curcumae Longae*.

NOMENCLATURE: *Curcuma* comes from "kerkum," a yellow dye from the East Indies.

FAMILY: Zingiberaceae.

CATEGORY: Herbs that invigorate blood.

PROPERTIES: Acrid, bitter. In China the tuber (yu jin) is considered cool, and the rhizome (jiang huang) is considered warm.

PLANT PART USED: Tuber and rhizome

TOXICITY:

Curcumin antioxidants are safe and powerful anti-inflammatory agents. [Miquel 2002, Chainani-Wu 2003] Tumeric is known to be safe in low and moderate doses. The constituent curcumin is not toxic to humans at doses ranging from 8-10 g / day [Cheng 2001, Aggarwal 2003].

In mice, 100 mg / kg / day for 90 days dose of *C. longa* ethanol extracts had no acute or chronic toxicity [Qureshi 1992].

CAUTIONS AND CONTRAINDICATIONS

- Not in pregnancy.
- Not with acute jaundice, hepatitis, bile duct obstruction, or gall stones. (Note: in China, the tuber yu jin is considered cooling and is used for damp heat jaundice... your call....)
- High doses may aggravate the GI system. Not with gastric ulcers or hyperacidity.
- In China the tuber is not used with *Eugenia caryophyllata* (ding xiang).

ENERGETIC CAUTIONS: Not in excess pitta. Not with Liver or Gall Bladder Heat. See Cautions above.

PREPARATION OF MEDICINE

Tincture [1:5, 50% alcohol]. Infused, decocted, prepared fresh, dried and powdered.

For increased absorption, some naturopaths recommend taking with Bromelain 20 minutes before meals; or, with essential fatty acids, lecithin, or fish oil during meals. Juice should be refrigerated and used within two weeks. Or just eat it.

Please Note: 'Ōlena will stain ANYTHING within reach, including your hands, blender, aura, dog, kitchen counter and children. If you don't use gloves while straining it, be prepared to have orange hands for a few days.

DOSAGE

In formula 5 - 10 grams in decoction.

I always prefer fresh, but some use 1g / day of dry, powdered curcumin in divided doses. 1 teaspoon of powder in water or juice.

MERIDIAN AFFINITIES: Stomach, spleen, liver

WESTERN FUNCTIONS REPORTED: Alexeteric [India]; alterative [India]; anodyne [India]; antihelminthic [India]; anti fungal [India]; anti-arthritis [India]; antibacterial [India]; antibilious [China]; anticoagulant; antihelminthic [India]; anti-infectious; anti-inflammatory; anti-mutagenic; antioxidant; anti-periodic [India]; anti-pyretic [India]; antitumour; antiviral [India]; aromatic [India]; balsamic [China]; blood cleanser (juiced internal) [Hawai'i, India]; carminative [India]; cholagogue [Brazil, China, India]; depurative [Nepal]; digestive aid; diuretic [Malaya]; emollient [India]; escharotic; eye cleanser [India]; fumitory; hemostatic [China, Hawai'i]; increases intelligence, wisdom, maturity (red on third eye) [India]; lactagogue [Java]; liver protective; maintains balance of intestinal flora [India]; metabolism regulator; stimulant [India]; stimulates the secretion of pancreatic enzymes; stomachic [China]; thermogenic [India]; tonic [India, Malaya]; uterine-stimulant; vulnerary [Philippines].

TRADITIONAL CHINESE ENERGETIC FUNCTIONS (~ = extrapolated):

- 1) Invigorates blood and removes blood stagnation (rhizome and tuber).
- 2) Invigorates menstrual blood (rhizome).
- 3) Moves qi & stops pain (rhizome and tuber).
- 4) Clears hot phlegm in the heart channel and cools the blood (tuber).
- 5) Expels wind and leads to the shoulder (rhizome).

OTHER ENERGETIC FUNCTIONS: Decreases kapha and vata, increases pitta.

'Ölena (Tumeric) Common Medicinal Uses

- Inflammation
- Liver disorders
- Digestive aid
- Shoulder pain
- Sinus and ear problems

'Ölena (Tumeric) Cross-Cultural Medicinal Uses

COSMETIC

- Beauty care treatments [India]; skin dye [India]; to remove excess hair (topical).

CARDIOVASCULAR

- Anemia [India].
- Angina pain.
- Capillary fragility; poor circulation [India].

DERMATOLOGICAL

- Acne pimples [Hawai'i, India].
- Dermatitis, eczema, fungus, itching, psoriasis, rash, & warts [India]; athlete's foot (paste topical); dermatosis [Nepal]; impetigo (paste topical).
- Diabetic wounds (topical after debridement) [India]

DIGESTIVE

- Abdominal pain [China (tuber)]; Crohn's disease [India]; diarrhea [Malaya]; dysentery (fights protozoan parasites) [Brazil, India, Malaya, Research]; ulcerative colitis [India].
- Hemorrhoids [India].
- Indigestion, gas, low appetite, obesity [India].
- Added to high-protein meal to benefit digestion and prevent gas [India].

ENDOCRINE

- Diabetes [India].

HEAD AND THROAT

- Conjunctivitis [India, Java]; eye infections [Arabia]; eye problems, purulent ophthalmia, sore eyes [India].
- Earaches (juice topical) [Hawai'i].
- Hoarse voice [India]; inflammation of the tonsils or throat congestion (chewed raw) [Hawai'i]; pharyngitis, tonsillitis [India].
- Nose growths or odors (juiced topical) [Hawai'i]; sinusitis, runny nose [India].

HEPATIC

"Roots: Curcumæ. Of Turmerick, hot in the third degree, opens obstructions, is profitable against the yellow jaundice, and cold distemper of the liver and spleen, half a dram being taken at night going to bed in the pulp of a roasted apple, and if you add a little saffron to it, it will be the better by far."

- - Nicholas Culpepper

- **Alcohol or acetaminophin induced liver damage** (preventive) [India]; **chronic hepatitis** [India]; **hepatosis** [Malaya]; **jaundice and liver problems** [China, India, Java].
- Specific for **gall bladder infection due to suspected staphylococcus** [India].
- Michael T. Murray compares curcumin to silymarin for its **liver protective** effects.

INFECTION

- **Abscess** [India, Java]; **chronic sores** (tuber topical and internal) [China]; **infections and non-healing wounds** [Arabia, India]; **sores** [Malaya].
- **Common cold** [China, Hawai'i, India, Java]; **fever** [India].
- **Chronic strep** [India]; **tuberculosis** [Hawai'i]; **HIV** [India, Research]; **smallpox** [Brazil]; **tuberculosis** [Hawai'i].

LYMPHATIC

- **Hodgkin's disease.**

MUSCULOSKELETAL / TRAUMA

- **Arthralgia, arthritis, & traumatic arthritis** [India]; **bursitis** [China, India]; **fibromyalgia; shoulder pain** (rhizome) [China]; **sore muscles.**
- **Bruising, pain & swelling from trauma** (tuber & rhizome, topical and internal) [Arabia, Brazil, China, India, Malaya]; **wounds** [Arabia, Brazil, India, Java].
- **Cat scratches** [India].

NEUROLOGICAL

- **Alzheimer's disease; epileptic seizures** (tuber) [China]; **multiple sclerosis.**

ONCOLOGY

- **Breast tumors; lung tumors; lymphoma** [India]; **skin tumors; stomach tumors.**

PARASITES

- **Scabies** [India, Java].

PEDIATRIC

- **Chickenpox; colic** [Brazil, China]; **infant rashes.**

PSYCHOSPIRITUAL

- In traditional Hawaiian thinking, **'ōlena is thought to have much Mana** (spiritual power) and was mixed with pa'akai (sea salt) and sprinkled with a *Cordyline fruticosa* (lā'i) leaf **in ceremonies to purify people and homes.**
- In India, **'ōlena is thought to bestow the energy of the Divine Mother, cleanse the chakras, and is considered a symbol of prosperity** in Ayurvedic

medicine. When the juice is used as a "tikal" (orange dot) on the third eye, **it is thought to increase intelligence, maturity, and wisdom.**

- **Anxiety & agitation** (tuber) [China]; **hysteria** (from "inhaling fumes" - possibly huffing) [India].

REPRODUCTIVE

- **Lack of menses** (rhizome) [China, India, Malaya]; **menstrual pain** (rhizome or tuber) [China].
- **Gonorrhea** [Brazil, Malaya].

RESPIRATORY

- **Asthma, bronchial asthma, bronchitis** [Arabia, Hawai'i, India]; **catarrh** [Brazil]; **chest congestion** [China]; **coughs** [Arabia, India].
- **Hay fever.**

URINARY

- **Edema** [India]; **gravel** [Java]; **kidney failure** [India]; **urogenital disorders** [India, Malaya]; **white blood cells in the urine** [Java].

VETERINARY

- Used in Trinidad and Tobago **for ruminants having endoparasites.**
- Also for **injuries and pregnancy-related conditions in animals.**

OTHER MEDICINAL USES

- **Chest, flank, or abdominal pain** (rhizome or tuber) [China]; **colic from use of cathartics** [Michael Moore]; **insect or snake bite** [India]; **leech bite** [Brazil]; **parturition** [Java].

USE AS FOOD: A major component of curry powder, providing its color. Sometimes used as an adulterant of mustard.

OTHER USES:

- Used to make yellow-orange dyes in ancient Greece and to color kapa cloth in Hawai'i.
- Used with sandalwood paste in pre-marital bathing rituals.
- In India it is used internally to stretch the ligaments in benefit the practice of yoga.
- Planted outside of homes in Hawai'i to repel termites.
- A paste is used to plug radiator leaks in cars.

ESSENTIAL OIL: Perfume component.

CONSTITUENTS: 'Ōlena contains powerful antioxidant phytonutrients known as curcuminoids. The active constituent is curcumin, an antioxidant that reduces inflammation by reducing histamine levels and possibly by increasing natural adrenal corticoids. Although curcumin is not soluble in water, it is suspected that its

metabolites may be therapeutically active and responsible for its medicinal effects. Other constituents include volatile oils 4-14% (turmerone, atlantone, zingiberone), sugars, resins, protein, vitamin C, & minerals.

Tumeric is native to India and Indonesia. India, which produces and consumes almost all of the whole world's tumeric, has a history of use dating back almost 4000 years.

POSSIBLE DRUG INTERACTIONS: May potentiate aspirin, Coumadin (Warfarin), Persantin, or Heparin (inhibits platelet aggregation) [Srivastava 1995]. Cobalt ion neutralizes the antioxidant effects of curcumin in vitro [Sakagami 2000].

'Ōlena (Tumeric) Local Combinations

Joint pain: Add *Siegesbeckia orientalis* (xi xian cao) and *Portulaca oleracea* ('ākulikuli / purslane).

Hepatitis: Add *Zingiber officinale* ('awapuhi pākē / ginger).

Indigestion, abdominal cramps: Add *Cymbopogon refractus* (wāpine / lemongrass).

Poor memory: Add *Centella asiatica* (pohe kula / gotu kola) and *Bacopa monnieri* ('ae'ae / brahmi).

'Ōlena (Tumeric) Cross-Cultural Combinations

Please note some of the ingredients in the following combinations are toxic! Do not self-administer without the supervision of a licensed practitioner or an experienced Elder.

Scabies: With *Azadirachta indica* (neem) paste topical [India].

Fungus: With *Aloe vera* [India].

Menstrual pain: Tuber with *Paeonia lactiflora* (bai shao), *Cyperus rotundus* (xiang fu / nutgrass) rhizome, *Bupleurum chinense* (chai hu) or *Angelica sinensis* (dang gui) [China].

Torso pain: Rhizome with tuber.

Chest pain from heart disease: Tuber with *Salvia miltiorrhiza* (dan shen) [China].

Urinary stones: Tuber with *Desmodium styracifolium* (jin qian cao) [China].

Sinusitis: Juice snorted with 'alaea (iron oxide) and pa'akai (sea salt). If you've never before felt the inside of your head explode, this will create an indelible memory. Keoki Sousa tells of having a Kupuna (elder) instruct him to snort 'ōlena juice mixed with pa'akai (Hawaiian sea salt) during a bout with hayfever and sinusitis. Apparently (after he "came-to"), it had "cauterized" the inside of his skull. But, he hasn't had hayfever since. For a less-than-explosive healing experience, the "pulu" (hairs) of the hāpu'u fern (*Cibotium* spp.) were soaked in 'ōlena juice and placed in the nostrils. For growth in the nostrils or bad odor in the nose it has been juiced with *Zingiber officinale* (ginger) rhizome and flower, and *Saccharum officinarum* (white sugar cane); soaked in *Cibotium* spp. (hāpu'u) pulu, and sniffed up to ten times a day [Old Hawai'i].

Offensive nose odors: Another old recipe for offensive nose odors (probably a sinus infection) calls for 'ōlena with dried *Cocos nucifera* (coconut), *Syzygium malaccense* ('ōhi'a 'ai) bark, *Saccharum officinarum* (white sugar cane), *Morinda citrifolia* (noni) fruit, *Cordyline terminalis* (lā'ī) root, *Aleurites moluccana* (kukui) bark and flowers, and *Psilotum* spp. (moa) internally. That'd do it [Old Hawai'i].

Bruising or itching: Topical with honey [India].

Vaginal discharge: Internally with honey [India].

To tonify the skin: With milk internally [India].

Bruises or sprains: Topical (crushed rhizome) with rum, salt, *Siparuna guianensis* (leaves), *Justicia pectoralis* (leaves) [Creole]. Or with honey or *Aloe* gel [India].

Painful menses and post partum pain: Rhizome with *Cinnamomum cassia* (rou gui) [China].

Shoulder pain: Rhizome with *Astragalus membranaceus* (huang qi), *Cinnamomum cassia* (gui zhi), *Ledebouriella divaricata* (fang feng) or *Notopterygium incisum* (qiang huo) [China].

Sore throat: As a gargle and internally with coconut milk, *Syzygium malaccense* ('ōhi'a 'ai) bark, *Aleurites moluccana* (kukui) bark and flowers, and *Psilotum* spp. (moa) [Old Hawai'i].

As a "blood cleanser": The rhizome juiced with the *Curcuma longa* ('ōlena) leaves, *Punex giganteus* shoots and leaves, *Syzygium malaccense* ('ōhi'a 'ai) bark, *Acacia koa* (koa) bark, and *Saccharum officinarum* (white sugar cane) [Old Hawai'i].

RANGE: Hawai'i, India, China, Philippines, Java, Malaya, Nepal, and Brazil. Native to India.

GATHERING: Any time.

PROPAGATION & CULTIVATION: 'Ōlena dies back in winter, so remember where you've planted it if you want to partake during Makahiki (winter) season.

"Roots: *Curcumæ*. Of Turmeric, hot in the third degree, opens obstructions, is profitable against the yellow jaundice, and cold distemper of the liver and spleen, half a dram being taken at night going to bed in the pulp of a roasted apple, and if you add a little saffron to it, it will be the better by far."

- - Nicholas Culpepper

RESEARCH

- Redneck rodents take note: Ethanol extracts of both *Curcuma longa* and *Alpinia galanga* when given to mice resulted in an increased weight of sexual organs and sperm motility [Qureshi 1992] plus curcumin is neuro-protective for ethanol-induced brain damage [Rajakrishnan 1999].
- Ischemia induced damage is reduced by pretreatment with curcumin in cats [Dikshit 1995].
- Antioxidant [Reddy 1994; Selvam 1995].
- Reduces death rate in mice with cystic fibrosis [Egan 2004].
- Prevents the formation of gall stones in rats [Hussain 1992, 1994].
- Creates faster closure of wounds in lab animals [Sidhu 1998].
- Curcumin lowers cholesterol and inhibits LDL oxidation in rabbits [Ramirez-Tortosa 1999].

Immunity

- Curcumin stimulates macrophage activity in mice [Antony 1999], although some constituents may reduce lymphocyte proliferation and activity [Ferreira 1992].

HIV

- Curcumin is a modest inhibitor of HIV protease [Sui 1993]. It may inhibit "LTR" (long terminal repeat) sequence in HIV, which is a part of viral functioning [Barthelemy 1998]. In Trinidad, the Indian population eats large amounts of turmeric in curry while the African population does not. Persons of African descent in Trinidad are 10 times more likely to have HIV than persons of Indian descent [Cleghorn 1990]. This may be due to genetic, dietary, or other factors.

Alzheimers disease

- Oxidative stress, disturbed protein metabolism, and the formation of beta-amyloid fibrils appear to be key factors in Alzheimer's disease [Calabrese 2003]. In lab animals, Curcumin has been shown to be protective against amyloid beta-protein damage [Lim 2001, Ono 2004(a & b)].
- Phenolic constituents in *Curcuma longa* appear to induce an anti-oxidant and anti-degenerative "heat shock response" that reduces oxidative stress [Calabrese 2003]. Curcumin has been shown to reverse cognitive deficits in rats [Frautschy 2001]. Rosmarinic acid, another constituent in *Curcuma longa*, may also play a part [Ono 2004(b)].
- Other substances that may prevent the beta-amyloid plaque formation include red wine and Vitamin E [Ono 2004(a), Ono 2004(b)].

Along with *Zingiber officinale* ('awapuhi pākē / ginger), 'ōlena is our best Hawaiian food-quality anti-oxidant. It is not universally used in the way ginger is, and warrants a bit more attention to create an "energetically balanced" formula.

Oncology

- As an anticancer agent curcumin down-regulates transcription factors, inflammatory response, cell surface adhesion molecules, and growth factor receptors [Aggarwal 2003]. Known to inhibit tumor cells, [Aggarwal 2003] it is chemoprotective for various cancers in both lab animals [Kuttan 1995, Ambegaokar 2003] and in humans [Cheng 2001].
- Oral and esophageal cancer: Curcumin inhibits human oral squamous carcinoma cell in vitro [Elattar 2000], as well as chemically induced esophageal cancer in lab animals [Ushidi 2000].
- Skin cancer: Curcumin may inhibit squamous cell carcinoma through the inhibition of arachidonic acid metabolism [Spingarn 1998].
- Lymphatic cancer: Antioxidant and cytotoxic against adenocarcinoma in vitro [Fujisawa 2004].
- Nervous system cancer: May reduce human neuroblastoma in vitro [Liontas 2004].
- Breast cancer: Of 150 medicinal herbs tested, *Curcuma longa* was among the 6 best in terms of binding to progesterone and estradiol receptors in human breast cancer [Zava 1998]. It increases cytochrome P-450 detoxification in human breast cancer cells [Ciolino 1998].
- Lung cancer: Smokers who used turmeric daily for

one month had less urinary excretion of mutagens than did controls [Polasa 1992].

- Stomach cancer: Curcumin inhibits *H. pylori* and is chemoprotective in rats [Ikezaki 2001, Mahady 2002].
- Duodenal cancer: The ethanol extract can prevent duodenal ulcers in rats [Rafatullah 1990].
- Colon cancer: Curcumin inhibits human colon carcinoma cells in vitro and in rats [Chen 1999, Kawamori 1999].

NOTES 'N QUOTES

- 'Ōlena is listed in an Assyrian herbal written around 600 BC.
- Marco Polo compared the similarities of turmeric to saffron in 1280.
- In India, tumeric is stored in 20' deep pits and can last as long as 3 to 4 years.
- In the 1870's, turmeric was used to test the acidity or alkalinity (pH) of substances. Alkaline substances would turn the orange tumeric powder brown.
- Potent snakebite antivenom is made in Brazil from *Curcuma longa*.
- And just in case you were wondering... *Curcuma longa* is believed to ward off snakes, ghosts, evil spirits, and used as a paste to repel crocodiles. (It is not yet known if it repels telemarketers.)



***Cymbopogon citratus*
(Wāpine / Lemongrass)**

PLANT NAME: *Cymbopogon citratus* (R. Br.) A. Camus.

SIMILARLY USED SPECIES: *Cymbopogon bombycinus*; *C. ambiguus*; *C. citrates*; *C. citrates*; *C. excavatus*; *C. flexuosus*; *C. martini*; *C. nardus* (Citronella- not internally); *C. obtectus*; *C. procerus*; *C. proximus*; *C. winterianus*.

Status:
Alien
but not
naturalized.

COMMON NAMES: Wāpine, lāpine, lūkini [Hawai'i]; xiang mao, xiang ma, mao ju ma, yun xiang cao [China]; lemongrass, west indian lemongrass (*C. citratus*); east indian lemongrass (*C. flexuosus*) [USA]; fever grass [Caribbean]; moegalo [Samoa]; moengalo [Tonga]; yerba de limón, zacate de limón [Costa Rica]; calmarosa, palmarosa (*C. martini*), citronella (*C. nardus*); ilintji, kalpalpi (*C. ambiguus*) [Australian Aboriginals]; tanglad (*C. citratus*) [Philippines]; yerba luisa [Amazonia]; suyuis, qulla waji [Aymara]; jampi ali, jich'u suqus [Quechua]; capiicati [Chiriguano]; pirhegans [Nepal].

Habitat:
Dry disturbed
areas to
3000'.

NOMENCLATURE: *Cymbopogon* comes from the Greek "kumbe," a cup or boat, and "pogon," beard. Parts of the flower are thought to resemble a "hairy

Cymbopogon citratus (Lemongrass)