Guide to Selected Plants of the Māla Lāʻau Lapaʻaʻai
Mahalo
We would like to express our sincerest mahalo to all of those who have helped us with the Māla Lāʻau Lapaʻau and would like to recognize former Dean Ed Cadman, MD, Dean Jerris Hedges, MD, ME, MMM, JABSOM Facilities Management, Malcom Nāea Chun, PhD, Rick Barboza from Hui Kū Maoli Ola, the Alakaʻi Māla (leaders), and the faculty, staff, students, and community members for all their kōkua (assistance) in helping us mālama (care for) the Māla. We look forward to working together to honor our kūpuna’s knowledge for many years to come.

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References

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ʻŌlelo Mua
The Department of Native Hawaiian Health at the University of Hawaiʻi at Mānoa are involved as kahu (stewards) of the Māla Lāʻau Lapaʻau (Medicinal Plant Garden) since the garden’s conception. Our vision was to create a living outdoor classroom that would provide opportunities for learners to appreciate Hawaiian ancestral knowledge and reestablish a connection to the land. This Directory is intended to support this vision and was created as a reference tool for kumu (teachers), haumāna (students), and others to identify and understand the imbedded knowledge provided by the Māla.

Faculty and staff of the Department organize regular workdays in the Māla to promote service learning opportunities, reconnect with ʻāina (land), and provide discussion opportunities about lapaʻau (medicinal) practices. We regularly invite guest and others from the school and community to join us.

The most commonly used plants for lāʻau lapaʻau practices that are growing in our Māla are described in this guide: ʻawa, ʻawapuhi kuahiwi, kō, koʻokoʻolau, kukui, māmaki, noni, ʻōlena, pōpolo, and ʻuhaloa.

For each plant, the following information is provided:
- Native Hawaiian and Scientific Names
- Distribution Status (endemic, indigenous, or Polynesian introduced)
- Habitat
- Nā Inoa È A’e (Other names): Other Hawaiian and/or English names by which the plant is also known.
- Kinolau (Multiple manifestations or body forms): Identifies the specific god for whom a particular plant is an alternate form.
- Nā Hiʻohiʻona (Features and characteristics): Describes the physical features of the plant.
- Ka Hoʻohanana ʻAna (Uses): Identifies and describes uses for the plant.
- ‘Ike Pili (Related information/additional knowledge pertaining to the plant): Focuses on Hawaiian knowledge and highlights significant cultural information.
- Lāʻau Lapaʻau (medicinal uses within the Native Hawaiian community): Describes some common medicinal uses.

Contributors
Māla Alakaʻi: Mele Look, Kimberly B. Yamauchi, Miliani Trask-Batti, Kamuela Werner, and Dr. Winona K. Lee
Designed by: Kamakaʻaina Seipp, Rhinehart K. Numazu, Jr., Kenneth Tsukayama, and Miala Leong
Pule Hō‘ola
Written by Kekuhi Kanahele
A pule (prayer) of blessing and inspiration for the Māla Lā‘au Lapa‘au

‘O Kū ka hikina o ka lā,
‘O Hina komohana o ka lā,
Nā aumākua lau nāhelehele, ho‘oulu kānaka,
E malu mai.

‘O nā ‘aumākua,
E aloha mai ka mea i maʻi ʻia,
E kala wale i kona haumia me kona hemahema āpau
Eia ka wai, he wai huikala,

E kala!
Eia ka lā‘au,
He lā‘au kū, he lā‘au moe, he lā‘au kolo ka lā‘au,
‘O Kū ka ‘ākau, ‘O Hina ka hema,
E hō mai i lā‘au, i lā‘au, i lā‘au lapa‘au, i lā‘au akua,
He a’a, he ʻili, he lau,
He liko, he puʻa, he hua ka lā‘au,
‘Ai ka lā‘au! E ola!

‘O Hoaka ka mahina, puka ke ao,
‘O Kū ka mahina, puka ke ao,
‘O Kāloa ka mahina, puka ke ao,
‘O Kāne ka mahina, puka ke ao,
‘O Lono ka mahina, puka ke ao,
A hoʻi hou ka maui ola!
‘O ka panina kēia. Ua ola!
Ola a kolopupū a haumaka ʻiole.
A palahauhala a ka i kōkō,
ʻAmama, ua noa!

Hail Kū of the rising,
Hail Hina of the setting,
Ancestors of profuse herbage, of the procreation of humanity,
I entreat you.

Oh ancestors,
Bestow your compassion upon the ailing one,
And justly forgive any defilement or neglect on his part,
Here is the water, the purifying element,
Absolve any wrong doing!

Here is the medicine,
The upright plant, the prostrating plant, the vine is the medicine,
The right belongs to Kū, the left for Hina,
Grant me herbs, medicinal herbs, herbs imbued by the gods,
The stem, the bark, the leaf,
The new shoots, the flowers, the tuber or fruit
Take the medicine, the curing begins!

Hoaka is the moon, day breaks,
Kū is the moon, day breaks,
Kāloa is the moon, day breaks,
Kāne is the moon, day breaks,
Lono is the moon, day breaks,
Until full health is restored!
The period of confinement is ended. You are cured!
A healthful life until you are bent with age and the eyes blur.
Until you are like a ripened hala leaf and must be carried in a carrying net.

It is done, it is freed!

ʻUhaloa
Waltheria indica

Indigenous. Found in dry, disturbed or well-drained, moist habitats between 0–1,300 ft in elevation on all main Hawaiian Islands.

Nā Inoa ‘Ē Aʻe: ‘ala‘ala pū loa, hala ‘uhaloa, hi‘aloa, kanakaloa, waltheria, sleepy morning, basora prieta, hierba de soldado

Kinolau: Kanaloa

Nā Hiʻohiʻona: Small, shrubby plant can reach 6.6 ft in height. Flowers are small, yellow, and densely clustered. Fruits are tiny capsules with one seed.

Lā‘au Lapa‘au: Used to treat sore throat, the bark is removed and chewed several times a day. To treat asthma, flowers, leaf buds, older leaves, and the bark from the taproot are mixed with several other ingredients, heated, cooled, and drunk daily for five days (Krauss, 2001). The flowers are considered good medicine for children who are more than ten days old. To treat sore throats with the beneficial sap, the taproot can be chewed and the fibrous sediment spit out.
Indigenous. Occurs in a variety of habitats, including open sites, coastal forests, wet forests, subalpine woodlands, and disturbed roadsides.

Nā Inoa ʻĒ Aʻe: ʻoloʻhua, pōpolohua (Niʻihau), American nightshade, glossy nightshade

Kinolau: Kāne

Nā Hiʻohiʻona: Shrub-like herb 3 ft tall. Leaves are thin, smooth, and about 4 in long on new growth. Flowers are white or light purple with a yellow stamen. Fruit is a shiny black berry with many small seeds.

Ka Hoʻohana ʻAna: Used as dye. To treat asthma, bark, leaf buds, and older leaves are mixed with noni (Morinda citrifolia), mature niu (Cocos nucifera), and kō kea (Saccharum officinarum), pounded, then drunk after being cooked and cooled. It is also used to treat abdominal trouble in a similar fashion.

Lāʻau Lapaʻau: Juice from the leaves and ripe berries is used alone and in compounds for respiratory ailments, skin eruptions, and as a healing agent for cuts when mixed with salt (Abbott, 1992). Sap from the leaves and juice from the berries can be used to treat respiratory ailments and skin eruptions. Muscle, tendon, or joint soreness is treated by applying juice from the leaves to the affected area while it is being sunned (Abbott, 1992). It is commonly used as an ancillary ingredient in many medicines. The leaves, when combined with the bulbs of ʻakaʻakai (Schoenoplectus lacustris), hinaʻalo tap roots, and salt, are used to treat sore throat (puʻuʻe’ha) and enlarged or swollen tonsils (puʻukohekohe). To cure a cold, steamed leaves that have been wrapped in kī (Cordyline fruticosa) leaves were eaten every evening for five consecutive days (Krauss, 2001). To treat chills and high fever, leaves and bark of the halapepe (Pleomele spp.) are combined with the tap roots of pōpolo and ʻuhaloa (Waltheria indica) and a section of kō kea, mashed, heated with water, and drunk cold four times daily until chills subside (Chun, 1994).
‘Awa
Piper methysticum

Polynesian Introduced. Found naturally on all the main Hawaiian Islands, in or just below the borders of the lower forest zone in moist and shady areas.

Nā Hi‘ohi‘ona: A shrub 4–12 ft tall with green jointed stems and heart-shaped leaves.

Kinolau: The ‘awa plant and ‘awa drinking are both associated with Kāne and Kanaloa.

Ka Ho‘ohana ‘Ana: The root is commonly used as the source of a relaxant drink of the same name. The drink was formerly prepared by chewing, later by pounding. The pulverized particles are then mixed with water and strained. Traditional resources indicate that while ‘awa was used as an element in ceremony, it was likely not the focal point. When drunk in excess, it can cause drowsiness, scaliness of the skin, and bloodshot eyes. Both the root and leaf are used for their analgesic properties.

Lā‘au Lapa‘au: Extract of ‘awa is often mixed with various other substances for healing purposes in addition to its normal uses. ‘Awa is used to treat insomnia, kidney disorders, chills, latent childhood disease (pā`ao`ao), headaches, and tiredness. The ashes are rubbed on lesions caused by ʻa for children. ‘Awa root extract is used to relieve congestion in the respiratory tract, cure difficulty in urinating, and regulate menstrual cycles (Abbott, 1992).

‘Ōlena
Curcuma longa

Polynesian Introduced. Found on all the main Hawaiian Islands except Kaho‘olawe.

Nā Inoa ʻĒ A‘e: ʻēna, ʻālena, turmeric, Indian saffron

Nā Hi‘ohi‘ona: Herbaceous plant with dark green leaves up to 4 ft in length. Leaves arise out of dark yellow– to orange-fleshed rhizomes, commonly mistaken for roots, but they are actually underground branches. Flower emerges from center of leaves, white or purplish-white in color, highly fragrant, and easily distinguished from other members of the ginger (Zingiberaceae) family. Growth life cycle is characterized as deciduous.

Ka Ho‘ohana ‘Ana: Pulverized plant is used as a dye and to color and flavor food.

Lā‘au Lapa‘au: A mild astringent, the juice is introduced into the ear briefly as a cure for earache or into the nasal passage for abnormal nose conditions (Krauss,
Noni
Morinda citrifolia

Polynesian Introduced. Cultivated and naturalized in dry to mesic sites, disturbed hala forests, alien grasslands, and sandy shores.

Nā Inoa ʻĒ Aʻe: Indian mulberry, great morinda, cheese fruit

Nā Hiʻohiʻona: Small trees/shrubs up to 30 ft. Fruit is fleshy with a thin, yellowish skin that becomes solid and white when mature.

Ka Hoʻohana ʻAna: The inner bark of the trunk and roots are used for yellow and red dyes (Krauss, 2001). Fruit can be eaten raw or cooked (Krauss, 1993; Malo, 1951). Oil extracted from fruit is used on hair. In the Ethnology Collection at the Bishop Museum, there is a post-contact example of the wood made into a bowl.

Lāʻau Lapaʻau: Mashed, ripe fruit with the seeds removed is used as a poultice to apply to boils or added to various formulations to treat constipation (Krauss, 2001). The wilted leaves can be applied to cysts or growths on the skin. Made into a salve, the mashed fruit is useful in getting rid of head lice. It may also be useful in treating kidney problems, high blood pressure, diabetes, and bowel problems (Krauss, 2001). For cuts, the stem bark is utilized. Root sap can be applied to skin eruptions. Concussions are treated with a mashed green fruit. For broken bones, the green fruit are mashed and combined with salt as a topical medication. The fresh or dried leaves are brewed into a tea and drunk as a tonic for a variety of illnesses (Krauss, 2001).

‘Awapuhi Kuahiwi
Zingiber zerumbet

Polynesian Introduced. Commonly found in disturbed habits such as mesic shaded forests on Kauaʻi, Oʻahu, Molokaʻi, Lānaʻi, and Maui.

Nā Inoa ʻĒ Aʻe: ʻōpuhi, shampoo ginger, wild ginger

Kinolau: Kāne

Nā Hiʻohiʻona: Deciduous plant with leafy shoots 2 ft tall. Leaves are thin and slightly hairy on the underside. Branches stem from tubular underground branches called rhizomes. These rhizomes resemble ‘awapuhi Pākē (Zingiber officinale). ‘Awapuhi kuahiwi flowers in late summer with an oblong head 2 or 3 in long consisting of overlapping bracts that hide small yellowish flowers. Mature flower head contains an aromatic sap.

Ka Hoʻohana ʻAna: ‘Awapuhi kuahiwi is sometimes used on kuahu (hula altars) (Pukui, 1986). Aromatic sap is squeezed out of the flowering head and used for shampoo. The dried and pounded rhizome can be used for scenting kapa. The leaves can flavor meat (Wagner, 1990).

Lāʻau Lapaʻau: ‘Awapuhi kuahiwi is used as a compress for sores, cuts and bruises; it is also used to treat toothache, achy joints, sprains, stomach-ache, headaches, ringworm, and other skin diseases. It is said to have anti-inflammatory properties. The ashes of burnt leaves, combined with ashes of the ʻone lau iʻi (Schizostachyum glaucifolium) and milky kukui (Aleurites moluccana) and ‘awapuhi rhizome sap are used to treat cuts and bruises (Abbott, 1992; Chun, 1994). Rhizomes are also pounded with paʻakai (Hawaiian sea salt), placed on a young frond, squeezed, and the liquid drunk. The resulting fibrous residue is applied to the forehead to treat headaches (Krauss, 2001).
Hala
*Pandanus tectorius*

*Indigenous.* Found on all the main Hawaiian Islands except Kaho‘olawe.

**Nā Inoa ʻĒ Aʻe:** pū hala, lauhala, screw pine

**Nā Hiʻoiʻona:** Medium-sized tree up to 30 ft tall with aerial/prop roots (uleule hala or ‘awe‘awe) and long, spiny leaves. Male tree has blossoms called hīnano. Female tree has fruit clusters (‘āhui hala) consisting of individual keys. Hala comes in four types differentiated by fruit color: common hala (yellow), hala‘ula (orange), hala lihili‘ula (red that fades to yellow), and hala pia (small, pale yellow).

**Ka Hoʻohana ʻAna:** Hua (keys) of the fruit used for lei, and when dried, can also be used for dye brushes. Leaves utilized for weaving mats and sails, as well as a primary thatching material. Uleule hala can be woven into cordage and the needles used for lei making. Hīnano used to perfume kapa cloth and placed between mats for sleeping.

**ʻIke Pili:** Lei hala are given to signify new beginnings and/or moments of completion. It symbolizes the passing of momentous occasions such as funerals (completion of life cycle), birthdays (passing another year), and graduations (completion of hard work). Passing of the hīnano was also often associated with romance.

**Lāʻau Lapaʻau:** Blossoms can be a mild laxative. The fruit is part of a treatment for thrush (ʻea) and latent childhood disease (pāʻaoʻao). The root is a good source of vitamin B and C. Medications for skin disorders use the aerial root in combination with pohepohe (*Hydrocotyle verticillata*), keokeohe (*Eleocharis spp.*), hala leaf buds, ‘alā‘ala wai nui pehu (*Peperomia spp.*), ‘ihi makola (*Oxalis corniculata*), naio (*Myosporum sandwicense*) leaf buds, fruit, and leaves; niu (*Cocos nucifera*), kukui (*Aleurites moluccana*) flowers, noni (*Morinda citrifolia*) fruits, and kō (*Saccharum officinarum*). Hala leaf buds and aerial roots with ‘uhaloa (*Walthtera indica*) root, noni fruits, ‘ahu‘awa (*Cyperus javanicus*) leaf buds, kō kea, and ʻalae clay are used for childbirth. For chest pains, a concoction with hala aerial root is drunk (Abbott, 1992).

Māmaki
*Pipturus spp.*

*Polynesian Introduced.* Found naturally on all of the main Hawaiian Islands except Kaho‘olawe and Ni‘ihau. Inhabits coastal mesic, mixed mesic, and wet forests.

**Nā Inoa ʻĒ Aʻe:** māmake, waimea

**Nā Hiʻoiʻona:** Large shrub or small tree 5–15 ft and up to 30 ft tall. Broad, light green leaves with whitish undersides and green, pink, or reddish veins. Flowers develop into white mulberry-like fruit. Each plant can produce hundreds of fruit at a time. Fruits contain tiny brown seeds able to propagate new plants.

**Ka Hoʻohana ʻAna:** Bark is useful in making a coarse type of kapa (cloth) when wauke (*Broussonetia papyrifera*) is not available. Long fibers are used for rope and cordage.

**Lāʻau Lapaʻau:** Fruit is used to treat thrush (ʻea) and latent childhood disease (pāʻaoʻao). Fresh leaves from the plant are used to make an herbal tea to treat general debility (Krauss, 2001). The tea also treats a generally run-down person (Abbott, 1992).
Kukui
Aleurites molucana

Polynesian Introduced. Found naturally on all the main Hawaiian Islands in mesic forests from sea level to elevations of approximately 2000 ft.

Nā Inoa ‘Ē Aʻe: candlenut tree, Indian walnut, kemiri, varnish tree.

Kinolau: Lono. Kukui logs are carved into hog’s heads, dyed with red ocher, and placed on the god’s altars with harvest offerings (Handy, 1991).

Nā Hiʻohiʻona: Large trees up to 60 ft tall are easily distinguishable from other trees due to their light green foliage. The nut is round and 1.5–2.5 in. in diameter; the seed inside has a very hard coat and high oil content. The leaves are glossy on the underside and silvery grey on the top side.

Ka Hoʻohana ʻAna: Nuts are strung on a palm midrib (nīʻau) and burned as a candle (ihoiho). Their light lasts approximately 15 minutes each, and they can be strung and lit in sequence. The nuts, leaves, and flowers are used in lei making. The nut oil is used for varnish and as a tool for fishermen to break the reflection. The nut is chewed and spit on the surface of the water to see the fish below. A relish called ‘inamona is made from the roasted nuts. Resin and sap can be used as an adhesive substance (Krauss, 2001). The trunk of the tree is sometimes used to make small fishing canoes.

Lāʻau Lapaʻau: The flowers, nuts, bark, and leaves are used as a laxative or, in higher doses, as a cathartic or purge. Fresh leaves are useful for poultices. Pounded, roasted nuts are the base for a salve to cure sores and external ulcers. Use caution when handling kukui as the entire plant is mildly toxic (Abbott, 1992). The nut oil is a non-irritant and safe to use in all settings. For thrush (‘ea) and latent childhood disease (pāʻaoʻao), the flowers and nuts are combined with other lāʻau. To build strength after illness, nutmeats are ground with cooked kalo (Colocasia esculenta) and the flesh of kikawaioa (Christella cyatheoides), and these are eaten with fish and ‘uala (Ipomoea batatas) poi with an infusion of koʻokoʻolau (Bidens spp.) (Chun, 1994).

Kī
Cordyline fruticosa

Polynesian Introduced. Naturalized in mesic valleys and forests, often found in hala (Pandanus tectorius) forests.

Nā Inoa ‘Ē Aʻe: lāʻī, lauʻī, kānāwai, ti leaf

Kinolau: Kāne

Nā Hiʻohiʻona: A woody plant growing up to 13 ft tall, with leaves 12–24 in long and 2–4 in wide at the top of a woody stem. It produces 16–24 in–long panicles of small, scented, yellowish to red flowers that mature into red berries.

Ka Hoʻohana ʻAna: Leaves are used to thatch shelter. In cooking, the leaves are used to cover food placed in an imu (underground oven), wrap food, and serve food from as platters. Clothing articles such as hula skirts, sandals, and rain capes are made by bundling leaves together. The leaves are also used in lei-making and lashed together to make lava sleds. Kī is used as an important part of religious ceremonies, and when denoting a kapu (forbidden/sacred), it was called kānāwai (law). When raised like a kāhili (feather standard), stalks represented a truce in battle. The plant is used to designate protected persons or places. Only kahuna (high priests) and aliʻi (chiefs) are able to wear leaves around their necks during certain ritual activities. Plants outline borders between properties and are planted at the corners of the home to keep spirits from entering the home or property.

Lāʻau Lapaʻau: In psychological and spiritual healing, kī plays an important role. “The leaves are believed to have potent properties as protective agents against psychic evil” (Handy, 1991). To treat shortness of breath/asthma (nae, nae‘oiku, nae hokale ‘ano ohaohao), flowers and leaf buds are mixed with other lāʻau. For absence of perspiration (wela hou ‘ole o ke kino), leaves are wrapped about the head and chest (Abbott, 1992).
Kō  
*Saccharum officinarum*

*Polynesian Introduced.* Found on all the main Hawaiian Islands.

**Nā Inoa ʻĒ Aʻe:** sugar cane

**Kinolau:** Kāne

**Nā Hiʻōhiʻona:** Generally, they are large grasses with hard stems (stalks) and long blades. This plant can reach heights of up to 15 ft. The stalk color ranges from light yellow (kō kea) to dark red (kō honua ʻula). Many varieties have different striped combinations like maroon and green (kō manulele) or yellow, pink, and green (kō halāliʻi).

**Ka Hoʻohana ʻAna:** The juice of certain varieties is used as a potion to induce the love of another person, while other varieties are used to block that love spell. When the more preferred pili grass is not available, the blades are used for house thatching. The bloom stalk and tassel served as darts in the children’s game keʻa pua. The skin of the stalks has been used for plaiting hat braids. It resembles cellophane.

**Lāʻau Lapaʻau:** Juice was extracted from the fibrous stalk and used to make medicines more palatable. The sweet stalk was chewed to strengthen and clean teeth and gums. Young leaf buds of the kō are mixed with kowali pehu vines (*Ipomoea alba*) and salt for pouring on deep cuts, wounds, and compound fractures (Abbott, 1992; Chun 1994).

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Koʻokoʻolau  
*Bidens spp.*

*Endemic.* Found throughout main Hawaiian Islands, from coastal lowland forests to mesic forests.

**Nā Hiʻōhiʻona:** Small, herbaceous shrub with dark green leaves and bright yellow daisy-like flowers. It is similar in appearance to Spanish needle weed (*Bidens pilosa*), though the tiny koʻokoʻolau seeds do not have prongs that latch on to animal fur or feathers. The seeds are spiral in shape and float easily on the wind.

**Ka Hoʻohana ʻAna:** Naturally sweet and very tasty, the leaves are used in herbal teas. The flavor is more subtle than that of commercial black teas. (Abbott, 1992).

**Lāʻau Lapaʻau:** Recommended as a tonic to treat throat and stomach ailments or severe cases of asthma. The entire plant is used to treat thrush (ʻea) and latent childhood disease (pāʻaoʻao). For adults with ʻea and pāʻaoʻao, koʻokoʻolau is used in conjunction with other lāʻau. For cleansing or purification, as well as appetite restoration, the leaves, leaf buds, and flowers are used in conjunction with other lāʻau (Abbott, 1992).