

SOME DOMINICAN MEDICINAL PLANTS IN THE ENID A. HAUPT CONSERVATORY AT THE NEW YORK BOTANICAL GARDEN



Scientific Name: *Costus* spp. (Costaceae)

Dominican common name: *insulina*

English common name(s): crape ginger

Dominican Traditional Uses: Diabetes

Plant species of the genus *Costus* (incl. *Cheilocostus speciosus* and *Costus spicatus*) are frequently used by Dominicans to treat diabetes. For this purpose, the leaves and stems (alone or occasionally mixed with other plants) are boiled and drunk as a tea.

Precautions and adverse reactions:

No health hazards known with proper administration. Gastric complaints and nausea might be experienced, as well as kidney irritation, due to a high content of saponin. Overdose could lead to symptoms of cholera, increased diuresis, and shock (Thomson PDR, 2007).

Scientific Name: *Aloe vera* (L.) Blum.
(Asphodelaceae)

Dominican common name(s): *sábila*

English common name(s): aloe

Dominican Traditional Uses:

Major Uses: asthma, burns, bronchitis, cough, common cold, diabetes, flu, wounds

Minor Uses: arthritis, balding, cancer, cholesterol, constipation, fungal skin infections, intestinal problems, menstrual pain, shingles, skin boils, stomach ulcers, vaginal infections, weight loss,

Aloe vera is one of the most important plants in Dominican traditional medicine. The peeled succulent leaves consist of a transparent inner gel (called *crystal*) and yellow-green colored latex.



There are several major uses of *sábila*. Its most prevalent use is to treat asthma and bronchitis. The gel from the leaves is eaten, mixed in a juice or *botella*, or prepared as a tea, and taken internally. Sometimes the latex is also used in a similar way for this purpose. The gel is sometimes also applied externally to soothe asthma.

The gel is taken internally or applied, either alone or in combination with other plants, for wounds or burns. The flu, common cold and cough are treated by drinking or eating the gel, and by mixing it into a *botella*, tea, or juice. The gel is drunk, eaten, or used in a steam bath with other plants for diabetes.

Precautions and adverse reactions: Aloe extract is considered GRAS by the FDA

The toxic part of aloe is the juicy latex within the leaves that contains barbaloin, an anthraquinone glycoside. Most exposures cause minimal or no toxicity. Large exposure may cause gastrointestinal irritation. Some references suggest that aloe can cause nephritis, or kidney inflammation, although no human cases support this. Contact dermatitis and allergic reactions can occur with exposure to aloe. A case was reported of a patient with hypersensitivity from applying the gel and the leaf, topically and orally. There is no information documenting the safety of usage on children, pregnant or lactating women (Germosén-Robineau, 2005).

Aloe is inadvisable in cases of intestinal problems, including obstruction, appendicitis or abdominal pain of unknown origin. The anthraquinones from the latex may stimulate uterine muscle activity, initiate premature labor, or possibly cause abortion when given orally. Use of the latex may also result in brown discoloration of body fluids, and hemorrhoids may be exacerbated if taken orally.

Long-term use of aloe can lead to albuminuria (the presence of protein, usually albumin, in the urine, which indicates disease) or hematuria (presence of blood in the urine). Long-term oral or topical use of aloe preparations can result in hypersensitivity as eczematous and popular dermatitis. Prolonged use of excessive laxative doses may lead to a significant loss of electrolytes, especially potassium. Patients taking aloe for more than 1-2 weeks may experience hypokalemia (potassium deficiency in the blood) that may lead to lethargy, muscle cramps, and headaches. This deficiency may enhance the effect of heart medications such as digoxin and patients should be advised to avoid concomitant use with aloe to prevent digoxin toxicity. Long-term laxative use may also lead to bloody diarrhea and, in toxic doses, possible kidney damage. Chronic treatment with high doses of aloe may also damage enteric nervous tissue. If aloe and an antidiabetic agent are taken together, blood glucose levels and signs and symptoms of hypoglycemia should be monitored (Thomson PDR, 2007).



Scientific Name: *Crescentia cujete* L.
Dominican common name(s): *higüero*
English common name(s): calabash tree

Dominican Traditional Uses: infertility, cleansing of the womb and body after birth

A popular Dominican use of *higüero* is to treat infertility. The fruit flesh is mixed with other plants to make a *bebedizo* or *botella* (a bottled herbal mixture) that is then drunk in small amounts for several days. The fruit flesh is also used in a drink or *bebedizo* to cleanse the mother after child birth.



Precautions and adverse reactions:

One should not ingest the fruit, due to its toxicity and abortive properties. The pulp of the fruit induces abortion in cattle, due to the presence of oxytocin substances yet to be identified. This toxicity is attributed to the presence of hydrogen cyanide. There is no information documenting the safety of usage in children, pregnant or lactating women (Germosén-Robineau, 2005).

Scientific Name: *Jatropha curcas* L.
Dominican common name(s): *piñón*
English common name(s): physic nut, barbados nut

Dominican Traditional Uses: wounds, skin boils, asthma, diarrhea, syphilis

When any part of *Jatropha curcas* is crushed, an exudate or latex (called milk) is exposed. To treat wounds, this latex is applied alone, or in some cases together with other plants. The leaves are also applied or mixed in a bath for wounds. Skin boils are treated by applying the latex and/or the leaves. The latex is drunk to alleviate asthma, and



the leaves are used to make a tea to treat diarrhea or syphilis; other plants may be added to this preparation as well. The leaves may also be applied directly for treating syphilis.

Precautions and adverse reactions:

The seeds of *piñon* are poisonous, and the toxin contained in this plant is jatrophin (curcin), a plant lectin (toxalbumin) related to ricin. Unlike poisoning with other plants that contain toxic lectins, the onset of effects (nausea, vomiting, and diarrhea) with *piñon* are usually rapid. Other symptoms are probably secondary to fluid and electrolyte loss and the suppression of intestinal function. Severe poisoning may follow ingestion of a single seed (Nelson *et al.*, 2007).

The latex applied during a 24-hour period on the skin of rabbits and observed for 14 days, resulted in some cutaneous toxicity at 4 and 6 ml/kg, and mild irritation in the case of 10 ml/kg. Applied on the mucous membranes of the penises and mouths of rabbits (0.2 ml) it produced mild irritation. There is no information documenting the safety of using *piñon* medicinally in children, pregnant or lactating women (Germosén-Robineau, 2005).



Scientific Name: *Agave* spp.

Dominican common name(s): *maguey*,

maguey de caballo, *maguey de bestia*

English common name(s): century plant

Dominican Traditional Uses: gonorrhea, infertility, kidney problems, syphilis, sinusitis, vaginal infections, flu, bronchitis, back pains, sprains, ulcers

The roots of several species of *Agave* are used in a *bebedizo* to treat gonorrhea, syphilis or infertility. The leaves are also mixed into a tea or *botella* for these conditions. For kidney problems, the leaves are used to make a *botella* or tea that may contain other plants. To cure sinusitis, the leaves are applied or used in a *botella*. For vaginal infections, they are utilized in a *botella*, vaginal rinse or tea that may contain other plants. Other minor uses of *maguey* include remedies for the flu, bronchitis, back pain, sprains or ulcers.

Precautions and adverse reactions: Patients with known allergies to plants in the family Agavaceae should avoid *maguey*. It should be used cautiously by patients trying to conceive due to possible contraceptive effects. A possible compound effect may exist with steroid hormones (Hackman *et al.*, 2006).

Bibliography:

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