

PESTICIDAL PLANT LEAFLET

Lippia javanica (Burm.f.) Spreng



Taxonomy and nomenclature

Family: Verbenaceae

Vernacular/common names:

(English): Fever tea/ Lemon Bush

(Afrikaans) Koorsbossie/Lemoenbossie

(Swati): mutswane, umSutane

(Xhosa): in Zinziniba

(Zulu): um Suzwane, umSwazi

(Tswana): musukudu, bokhukhwane

Distribution and habitat

Lippia javanica is a woody shrub found throughout eastern and southern Africa, usually on forest fringe, grasslands on hillsides and banks of streams. In Tanzania, it can be found in Musoma district, Serengeti, Seronera –Soit Ayai, Arusha district, little Meru, Mt. Kisimiri, Ngurudoto area, Arusha National Park, Momela, Lushoto district, Kwai Valley. In Kenya, it can be found in Cherangani Hills, Kiambu district, Masai district and on the Naraok-Naivasha road. In southern Africa, *Lippia javanica* is found from Eastern Cape through to Botswana, Swaziland, Mozambique and Malawi. The species is drought resistant and can grow in a variety of soil types.

Uses

Pesticidal - The volatile oil produced by *Lippia javanica* is used to repel and control insects such as bark beetles. It is also used in pre and post-harvest pest management and ecto parasite control in livestock. Plant extracts from leaf powder at 12.5% w/v using 0.1% v/v soap can be used against rape aphids and tomato spider mites. The oil chemistry varies between populations and seasons and can impact efficacy. There is potential for commercial use.

Medicinal – Leaves are medicinal and used as a herbal tea to treat coughs, aching muscles and sometimes

to treat malaria. Skin disorders, such as heat rash and other rashes, as well as scratches, stings and bites and parasites such as lice and scabies can be treated with the *Lippia javanica* leaves mixed in hot water tea that is usually cooled and then applied like a lotion. Leaves, twigs and sometimes roots can be used.

Cosmetics – Masai people use its red ointment to decorate their bodies. Gardeners use it in pot- pourri and some people use it to make perfume.



Botanical description

Lippia javanica is a 1 to 2m high woody shrub that stands erect and is multi-stemmed. The stems are heavily branched and appear square when observed in a cross section. The leaves are elliptical, 3-4 cm in length with sunken veins, when crushed they give off a lemon like odour. The leaf margins are dentate, lightly toothed and hairy on both sides. The flowers are creamy white, clustered together in a dense round spike at the apex of the stem. Flowers are creamy white, densely clustered together, in round spikes. Flowers are inflorescence 1-3 per axils, globose to hemispherical or oblong to ovoid, 0.5-2 cm. Bracts 3 x 2 mm, broadly ovate; calyx 2-lobed, 2mm long; tube 3-4mm long, puberulous and glandular above corolla tube 4 mm long.

Fruit and seed description

The fruits are rather inconspicuous, small and dry and are borne at the base of flower clusters. They are mericarp half ellipsoid, 1.5 mm long, 1mm wide, densely pubescent outside. Seeds appear as tiny nuts and are brown in colour.

Flowering and fruiting habit

In Kenya flowers appear between July and November but can be produced all year round. Fruits appear between December and January in Kenya.



Harvesting

Fruits are harvested when the colour turns from green to dark brown. Collection time is best at onset of natural dispersion.

Processing and handling

After harvesting, fruits are placed in open trays at room temperature to dry and open to release the seeds. Seeds are separated from the fruits by light threshing and hand sorting.

Propagation

Lippia javanica grows easily from seeds and from cuttings too. It grows relatively fast and prefers sunny areas. Lemon bush is not very particular and seems to do well in most soil types.

Safety measure

Always use gloves, protective clothing and caution when handling and applying plant materials to field crops or stored commodities and minimise exposure of consumers. Avoid contact with the skin. In case of accidental contact, immediately wash the affected area with clean running water.

Caution: Known to colonize disturbed areas. This plant can be invasive.

Selected readings

Lukwa, N., Molgaard, P., Furu, P and Bogh, C (2009) *Lippia javanica* (Burm F) Spreng: its general constituents and bioactivity on mosquitoes. *Trop. Biomed.*, 26, 85-91

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Van Wyk, B., Gericke, N. 2000. *People's plants: A guide to useful plants of Southern Africa*. Briza, Pretoria.

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Pesticidal plant leaflets are a series of species wise extension leaflets on botanical pesticides. Leaflets are compiled from existing literature and research available at the time of writing. In order to currently improve recommendations, ICRAF and the University of Greenwich encourage feedback from users and researchers who have experience with the species. Comments, corrections, improvements and amendments will be incorporated into future edited leaflets. Please write your comments to: p.anjarwalla@cgiar.org or p.c.stevenson@greenwich.ac.uk