Solanum erianthum D.Don

Protologue
Prodr. fl. nepal.: 96 (1825).
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Family
Solanaceae
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Chromosome number
2*n* = 24
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Synonyms
Solanum *verbascifolium* auct. non L.
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Vernacular names
Potato tree, tobacco tree, tropillo (En). Amourette marron (Fr). Maria mole amarga (Po).
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Origin and geographic distribution
Solanum erianthum originates from the West Indies, Central America and Mexico, but is now a widespread weed in the tropics, although hardly penetrating South A
Caribbean into West Africa at the time of the slave trade and it is believed to have been introduced into the Philippines by the Spanish in the 16th century, from whe
archipelago and to mainland Asia and Australia as a weed.
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Uses
In West Africa a leaf decoction of *Solanum erianthum* is taken for its diuretic and purgative properties to cure malaria, leprosy and venereal diseases and it is also ta
In tropical Asia the leaves are considered a potent medicine for expelling all impurities through the urine, in particular to treat leucorrhoea, and also as an abortifacie
treat haemorrhoids and scrofula. Heated leaves are applied to the forehead against headache. A decoction of the leaves is drunk to treat vertigo. A decoction of the r
relieve digestive troubles; it is also given to treat dysentery, diarrhoea and fever. The root bark is used as an antiphlogistic and to treat arthritis. The fruits are an ingr
Although the fruits are considered poisonous, causing nausea, headache and cramps, in South-East Asia they are sometimes eaten when cooked. In southern India th
the velvety leaves are used to remove grease from dishes. *Solanum erianthum* is considered suitable as a shade plant for coffee, but in Ghana it is considered an unde
erianthum is planted as an ornamental.
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Properties
Solanum erianthum contains steroidal saponins and free genins as well as steroidal alkaloids of the spirosolane group. The spirosolanes are structurally similar to sap
spirosolane alkaloids include solasodine and tomatidine, which are both found in *Solanum erianthum*. The total alkaloid content of air dry leaves and fruits is about
samples was 0.01–0.70%. Leaf samples from Vietnam contained 0.26% solasodine and 0.05% tomatidine.
Steroidal alkaloids such as tomatine, solanine and chaconine inhibit growth and development of a large number of fungi. A flavonoid-rich extract of the leaves of *So*
antifungal activity against gram-positive bacteria and the fungi *Aspergillus flavus* and *Candida albicans*. Steroidal alkaloids from *Solanum erianthum* are useful in i
nitrogen-containing analogue of diosgenin, a compound often used as raw material for the production of medicinal steroids. The synthetic steroids have three main a
corticosteroids, as contraceptive steroids and as anabolic steroids. An aqueous extract of the leaves given orally to mice was effective as a prophylactic against malar
it failed to suppress the malaria parasites.
Active compounds can be produced in vitro, although only in low amounts. Both diosgenin and solasodine have been isolated from 6-month-old callus, established f
revised medium. Blue light stimulated solasodine synthesis and green light stimulated diosgenin synthesis.
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Adulterations and substitutes
Steroidal alkaloids (e.g. diosgenin and tigogenin) are also found in *Dioscorea* and *Smilax* species; these are also used as starting material for steroid hormone semisy
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Description
Shrub up to 4(–10) m tall; stem up to 20 cm in diameter, unarmed, densely woolly hairy with soft stellate hairs. Leaves alternate, simple; stipules absent; petiole 2–3
cm × 3.5–15 cm, base rounded to cuneate, apex acute to acuminate, margin entire or slightly wavy, densely woolly hairy. Inflorescence a terminal or axillary compo
regular, 5-merous; calyx campanulate, c. 5 mm long, lobes ovate; corolla stellate, c. 1.5 cm in diameter, white; stamens alternate with corolla lobes, filaments 1.5 mm
opening with apical pores; ovary superior, almost glabrous, style glabrous. Fruit a globose berry 8–12 mm in diameter, short-hairy, dull yellow to orange when ripe,
in diameter. Seedling with epigeal germination; cotyledons thin, leafy.
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Other botanical information
Solanum comprises about 1000 species and has a cosmopolitan distribution, except in boreal, alpine and aquatic habitats. About 110 species are found in tropical Af
Central and South America, with secondary centres in Africa and Australia. *Solanum* has been subdivided into 7 subgenera and numerous sections and series. *Solanu*
which has another introduced species present as a weed and ornamental in tropical Africa: *Solanum mauritianum* Scop.
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Growth and development
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Ecology
Solanum erianthum occurs in sunny localities, in brushwood and roadsides, on waste ground and in edges of fields and forests. It is also a weed of gardens and fields
drained soil. In Ghana it is frequently encountered as one of the pioneer species of degraded mining sites.
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Propagation and planting
Solanum erianthum is easily raised from seed and can also be propagated from shoot cuttings and by division of rooted shoots.

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Diseases and pests

Many *Solanum* spp., including *Solanum erianthum*, are hosts of diseases and pests that attack economically important *Solanaceae*.

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Yield

In many *Solanum* species the steroidal alkaloid content and sapogenin content decline as the fruit ripens. Leaf alkaloid and sapogenin contents also decline with age. solasodine content in the leaves 3 months after sowing by estimating their N content. At that stage a top dressing or foliar sprays may be applied to increase the sola kg of solasodine per ha is considered reasonable.

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Handling after harvest

The leaves and roots can be used fresh or dried and stored in airtight containers for later use.

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Genetic resources and breeding

In its native range in Central America *Solanum erianthum* is locally under serious pressure. In view of its weedy nature and wide distribution throughout the tropics rather limited.

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Breeding

The large variation in alkaloid content within *Solanum erianthum* offers possibilities for selection. However, the alkaloid content also varies substantially as a result

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Prospects

Solanum erianthum has potential for use in reclamation of degraded sites, and has medicinal and ornamental value. The possibility of its cultivation for extraction of However, introduction in areas where it does not yet occur, should be discouraged as it may become a noxious weed.

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