**Solanum mauritianum**

**Common name**
- pula (English, Tonga), wild tobacco (English), pua nana honua (English, Hawaii), woolly nightshade (English, New Zealand), bugweed (English), flannel weed (English, New Zealand), kerosene plant (English, New Zealand), rau 'ava'ava (English, Cook Islands), tobacco weed (English, New Zealand), igayintombi (Zulu), tree tobacco (English), umbanga banga (Zulu), groot bitterappel (Afrikaans), isigwayana (Zulu), luisboom (Afrikaans)

**Synonym**
- Solanum auriculatum, Aiton 1789
- Solanum carterianum, Rock 1913
- Solanum tabaccifolium, Vell. 1829
- Solanum verbascifolium, L. var. auriculatum (Aiton) Kuntze 1891
- Solanum verbascifolium, L. ssp. auriculatum (Aiton) Hassl. 1918
- Solanum verbascifolium, L. forma typicum Hassl. 1918

**Similar species**
- Solanum stelligerum, Solanum densevestitum

**Summary**
Solanum mauritianum is a widespread invasive weed belonging to the nightshade family. It has the ability to crowd out native plants if growing densely, but, if occurring sparsely, it may act as a nursery crop. All parts of Solanum mauritianum plant are poisonous to humans, especially the berries. This plant is dispersed by birds, with the fruit being especially favoured by some species. Biological control of this species has been undertaken in South Africa.

**view this species on IUCN Red List**
Species Description
"Shrubs or small trees 2-10m tall, branched above to form a rounded canopy, unarmed, all parts densely pubescent with sessile to long-stalked stellate hairs, loose and floccose on young growth. Leaves paler on lower surface, simple, alternate, elliptic, up to 0 cm long and 12 cm wide on young vigorous growth, usually ca 8 cm long and ca 7 cm wide, on mature stems. When crushed they give off a smell of diesel fuel. Margins entire, apex acuminate, base cuneate, often oblique, petioles 3-9 cm long, each with 1-2 smaller auriculate leaves in axils, these sessile, rounded, sometime absent from weak or distal shoots. Flowers perfect, actinomorphic, numerous in branched corymb, peduncles up to 15 cm long to first fork, pedicels 2-3 mm long; calyx tube short, 2-3 mm long, the lobes narrowly triangular, 2-3 mm long; corolla lilac blue with a pale star-shaped area at base, stellate, 1.5-2.5 cm in diameter; stamens 5, inserted low on corolla tube; filaments ca 1 mm long; anthers oblong, 2-3.5 mm long, opening by terminal pores; ovary densely pubescent; style pubescent in lower part, 5-7 mm long; stigma green, terminal. Berries green, ripening to dull yellow, succulent, globose, 1-1.5 cm in diameter, pubescent at least in early stages. Seeds numerous, flattened, 1.5-2 mm long, testa minutely reticulate. Self-compatible."
(Wagner et al., 1999, in PIER, 2002)

Lifecycle Stages
Flowers and fruits all year round (Wildy, 2002). Germination of seeds stored in soil is stimulated by fire (ESC, 2003). Seedlings that become established in summer can flower by autumn. Plants can grow to a height of several metres within 2-3 years. Mature plants begin to die after 15 years (Haley, 1997).

Uses
Can be used as a nursery crop in countries where it is less invasive than elsewhere (e.g. Australia). This is because it can provide a protective environment for native vegetation to germinate and grow underneath. This is dependent on the situation though, as it will not be effective if S. mauritianum is so thick that it shades out plants growing beneath it. The fruit may be a valuable food source for native bird species, although these tend to facilitate long-distance dispersal and further invasion (CGC, 2003; T. Olckers, pers. comm.).

Habitat Description
In Hawai'i, naturalized on slopes and ridges in disturbed wet forest (Wagner et al. 1999 in PIER, 2002). A coloniser of disturbed sites (KZN Wildlife). Tolerates various soil types and is shade-tolerant to a certain degree (Haley, 1997). In South Africa, the plant invades riparian zones, forestry plantations, natural forest, agricultural lands, urban open space and any other disturbed areas (e.g. along roadsides, powerlines etc.), particularly in the eastern, higher rainfall regions of the country (Henderson, 2001).

Reproduction
Seed. Some 20-80 berries are borne on each inflorescence, each of which contains about 150 seeds (T. Olckers, pers. comm.).
General Impacts
Can invade urban areas, native forest margins and pastoral land. May form dense stands that inhibit the growth of other species through overcrowding and shading (Haley, 1997). Can retard the growth of young pine trees (Pinus spp.) (Wildy, 2002). All parts of the plant are poisonous to humans, especially the green berries (ESC, 2003). These berries also provide winter food for the Mediterranean and KwaZulu-Natal fruit flies, which are horticultural pests. The fine hairs on the leaves can be an irritant, especially when they are dislodged during removal operations (Wildy, 2002).

Management Info
Chemical: Easily killed with herbicides. In South Africa, several chemicals (e.g. glyphosate, triclopyr, imazapyr) are registered as foliar, basal stem or cut stump applications. Manual control involves ring-barking trees or removing seedlings by hand (Wildy, 2002).

Biological: Biological control has been instituted in South Africa, with the release of a sap-sucking lace bug (Gargaphia decoris) in 1999 (Olckers, 1999, 2000). However, this insect has proved ineffective to date. Permission for the release of the flowerbud weevil (Anthonomus santacruzi) that prevents fruiting is currently being sought in South Africa (T. Olckers, pers. comm.).

Pathway
Introduced to New Zealand as a garden plant. (Mather, 1998). Introduced for flowers and to attract fruit-feeding birds (T. Olckers, pers. comm.). Invaded rangelands (T. Olckers, pers. comm.). Invaded plantations (T. Olckers, pers. comm.)

Principal source:

Compiler: IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Dr. Terry Olckers, ARC - Plant Protection Research Institute, South Africa.

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ALIEN RANGE
[3] AUSTRALIA
[1] FIJI
[1] INDIA
[1] NEW CALEDONIA
[1] NORFOLK ISLAND
[2] SAINT HELENA
[8] SOUTH AFRICA
[4] TONGA

[2] COOK ISLANDS
[1] FRENCH POLYNESIA
[1] MAYOTTE
[12] NEW ZEALAND
[1] REUNION
[1] SOLOMON ISLANDS
[2] SWAZILAND
[1] UNITED STATES

BIBLIOGRAPHY
34 references found for Solanum mauritianum

Management information
SUMMARY:
A useful one-page document with information on Gargaphia decoris, a biological control agent for S. mauritianum. Contains contact details for further information.


Environment Waikato. 2002. Woolly Nightshade (Solanum mauritianum)


Summary: Contains information on identification, habitat, impacts and dispersal, as well as a tiny amount on management. Contains a broken link to an excellent fact sheet on chemical control.


Summary: An unpublished report which outlines the status, current control options and prospects for biological control of S. mauritianum in New Zealand.


Summary: A paper outlining the evaluation process for a potential biological control agent in South Africa. This particular species was determined to be unsuitable for release in South Africa.


Summary: A paper which reviews the biological control programme launched against S. mauritianum in South Africa and the prospects for success.


Summary: A paper outlining the evaluation process for a potential biological control agent in South Africa. This particular species was determined to be suitable for release in South Africa for the biological control of the invasive tree Solanum mauritianum. Biocontrol 45: 373-388.


Summary: Ecology, synonyms, common names, distributions (Pacific as well as global), management and impact information.


Swaziland’s Alien Plants Database., Undated. Solanum mauritianum

Summary: A database of Swaziland’s alien plant species.

Tasman District Council (TDC) 2001. Tasman-Nelson Regional Pest Management Strategy


Summary: This database compiles information on alien species from British Overseas Territories.

Available from: http://www.jncc.gov.uk/page-3660 [Accessed 10 November 2009]


Summary: A paper outlining the prospects for obtaining permission to release Gargaphia decoris for the biological control of S.mauritianum in New Zealand.

General information


Summary: A useful one-page document with information on Gargaphia decoris, a biological control agent for S. mauritianum. Contains contact details for further information.


**Summary:** Tableau synth?tique des plantes exotiques de Mayotte class?es en fonction de leur niveau d envahissement.

**CGC (Community Greening Centre), 2003.** Newcastle City Council.


**Summary:** An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals. Available from: http://www.esc.nsw.gov.au/Weeds/Sheets/trees/T%20Wild%20tobacco%20bush.htm [Accessed 7 April 2003]


**Summary:** A handbook which provides a short description of *S. mauritianum* and a map of its distribution in South Africa (p. 195).


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**Summary:** Eurobodalla Shire Council (ESC), 2003, South Coast Weeds.

**Summary:** An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals. Available from: http://www.esc.nsw.gov.au/Weeds/Sheets/trees/T%20Wild%20tobacco%20bush.htm [Accessed 7 April 2003]

**Summary:** A book which provides more detailed botanical information on *Index de la flore* and a map of its distribution in its native Brazil (pp. 551-554).

**Summary:** A book which provides a short description of *S. mauritianum* and a map of its distribution in South Africa (p. 195).


**Summary:** Available from: http://flore.cbnm.org/index2.php?page=taxon&num=d2a2c1da2accede3ed27003dba9c3c1ccc [Accessed 9 April 2008]

**Summary:** Available from: http://www.fao.org/forestry/webview/media?mediaId=6842&langId=2 [Accessed 18 November 2002]


**Summary:** Available from: http://flore.cbnm.org/index2.php?page=taxon&num=d2a2c1da2accede3ed27003dba9c3c1ccc [Accessed 9 April 2008]


Summary: Contains images, and a small amount of material on description, impacts and distribution. The most useful information covers chemical control methods, which details herbicides to use and where they should be applied. Available from: http://www.geocities.com/wessaaliens/species/bugweed.htm [Accessed 18 November 2002].