

Indigofera arrecta

Hochst. ex A. Rich.

Fabaceae - Papilionoideae

LOCAL NAMES

Arabic (nilaj, Nil); English (Natal indigo, Java indigo, Bengal-indigo, Bengal indigo); French (Indigotier chessé, indigotier); Indonesian (tom katemas); Swahili (Mnili)

BOTANIC DESCRIPTION

Indigofera arrecta is an erect, woody, large shrub up to 3 m tall.

Leaves arranged spirally, imparipinnate; stipules subulate-setaceous, 2–9 mm long; petiole up to 1.5 cm long, pulvinate; rachis up to 6 cm long, strigulose; stipels subulate, up to 1 mm long; petiolules 1 mm long; leaflets 7–21, narrowly elliptical-oblong, up to 2 cm x 0.7 cm, usually glabrous above and strigulose below.

Inflorescence a many-flowered axillary raceme up to 5 cm long but usually much shorter, often sessile; bracts lanceolate, to 1 mm long, caducous. Flowers bisexual, zygomorphic; pedicel to 1 mm long, strongly reflexed in fruit; calyx to 1.5 mm long, the tube about as long as the 5 triangular lobes, brownish strigulose; corolla to 5 mm long, pinkish or reddish, brown strigulose outside, standard longer than wide, narrowed gradually to the base, keel laterally spurred, wings with very short claws; stamens 10, 3–4 mm long, upper filament free, the others united, anthers dorsifixed, apiculate; ovary superior, 1-celled, with long style.

Fruit a linear pod 12–25 mm long and to 2 mm wide, straight, slightly tetragonal, brown when ripe, 4–8-seeded.

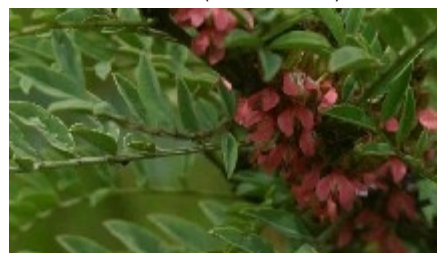
Seeds shortly oblong, rhombic in cross-section.

I. arrecta, *I. suffruticosa* and *I. tinctoria* are closely related and intermediate specimens (possibly of hybrid origin) have been found.

BIOLOGY



Leaves and flowers (Bart Wursten)



Leaves and flowers (Bart Wursten)

ECOLOGY

Natal indigo occurs in open deciduous forest, upland evergreen bushland, often in forest margins, and secondary regrowth. Plants prefer a hot, moist climate with a rainfall of no less than 1750 mm/year. The crop withstands waterlogging for up to 2 months.

BIOPHYSICAL LIMITS

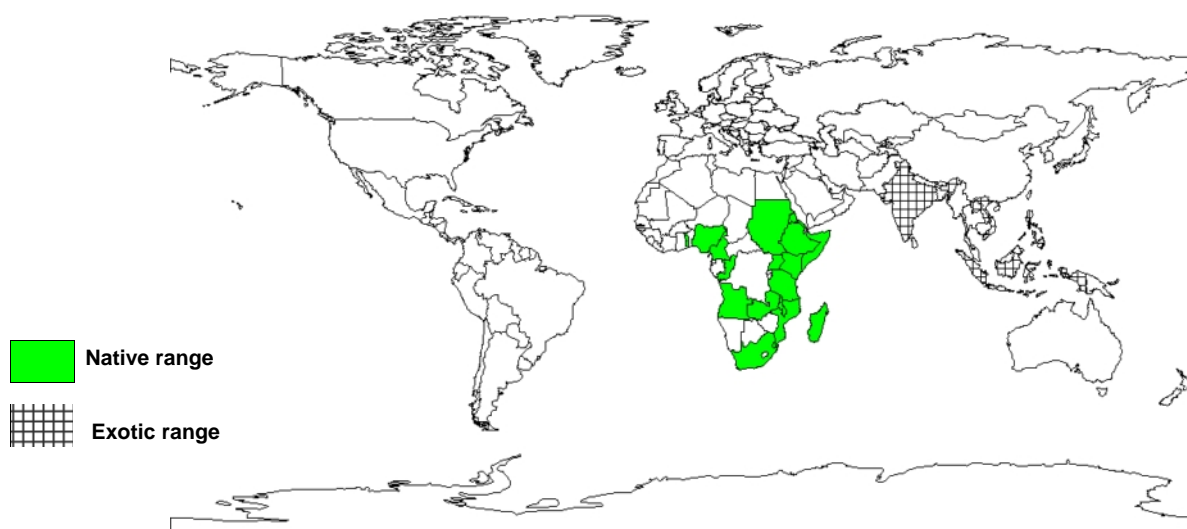
Altitude: 200-2700 m

Annual rainfall: 400-1800 mm.

DOCUMENTED SPECIES DISTRIBUTION

Native: Angola, Cameroon, Congo, Democratic Republic of Congo, Eritrea, Ethiopia, Gambia, Kenya, Madagascar, Malawi, Mozambique, Nigeria, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia

Exotic: India, Indonesia, Laos, Philippines, Vietnam



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS

Fodder: Browsed toward the end of the dry season, when the young subsidiary shoots are readily eaten.

Tannin or dyestuff: *I. arrecta* is the chief source of blue dye. The harvested branches are placed in a tank containing water to which some lime has been added and weighted down with planks. After some hours of fermentation, during which enzymic hydrolysis leads to the formation of indoxyl, the liquid is drained off and stirred continuously for several hours to stimulate oxidation of the indoxyl. Afterwards the solution is left to rest and the insoluble indigo settles to the bottom as a blueish sludge. The water is drained and after the indigo has dried, it is cut into cubes or made into balls.

Medicine: The leaves are used in traditional medicines for epilepsy and nervous disorders and to heal sores and ulcers.

SERVICES

Soil improver: It is also used as a cover crop and a green manure.

TREE MANAGEMENT

When used as a cover crop, *I. arrecta* can only be grown in gardens with little or no shade. Weeding and earthing up is done about 1 month after planting and again 1 month later. Cover crops are slashed at regular intervals. Branches are harvested, usually early in the morning, when the plants are 4-5 months old and the crop has made a closed stand.

This is usually the flowering stage. About 3-4 months later the plants can be cut again; a crop can be harvested three times a year. The total life span for dye crops is 2-3 years for cover crops. The yield of this species is higher than from any other species of *Indigofera*. Annual yields of 22-100 t green matter per ha have been reported in India; the recorded output of indigo cake is 137-325 kg/ha per year. The plant is deep-rooting and withstands drought well.

GERMPLASM MANAGEMENT**PESTS AND DISEASES**

Diseases: *I. arrecta* can be attacked by *Bacillus solanacearum*.

FURTHER READING

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SUGGESTED CITATION

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