Aeschynomene indica

Axillary inflorescences and immature pods

Sub-shrub, 0.3–2.5 m tall

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Scientific name

Aeschynomene indica L.

Note: The genus, *Aeschynomene,* is separated into two sections: Aeschynomene and Ochopodium. The former encompasses predominantly species from humid environments, such as *A. americana*, *A. indica* and *A. villosa*, while the latter includes a number of dryland species, such as *A. brasiliana*, *A. falcata* and *A. histrix*.

Synonyms

Aeschynomene hispida auct.; *Aeschynomene virginica* auct. mult.

Family/tribe

Family: *Fabaceae* (alt. *Leguminosae*) subfamily: *Faboideae* tribe: *Dalbergieae.*

Flower commonly 8-9 mm. long

Pods 5-10-(-12-) articulate, upper edge essentially straight, lower edge crenate

Seeds 3-4 mm long, 2-3 mm wide

Morphological description

An erect, annual (sometimes perennial) herb or sub-shrub, 0.3–2.5 m tall. Stems hollow, pithy, mostly to about 5 mm diameter (to 2.5 cm diameter at the base); glabrous to moderately hispid with sometimes glandular hairs. Leaves pinnate, occasionally sensitive, 5–10 cm long, mostly to 50- (sometimes to 70-) foliolate; leaflets linear-oblong, 3–13 mm long, 1–3 mm wide, glabrous. Inflorescences comprising 1–6 flowers; standard yellow or whitish, mostly lined and suffused with red outside, or purplish, elliptic, 7–10 mm long, 4–7 mm wide; wings and keel greenish white or pale yellow. Pod linear, straight or slightly curved, 2.4–4.8 cm long (excluding the stipe), 5–13 jointed, one suture more or less straight, the other slightly scalloped between the articles. Articles oblong, 3–5 mm long and wide, compressed with sparse, short, tubercular-based hairs, central part raised. Seed dark olive-black or brownish, oblong, slightly beaked, 3–4 mm long, 2–3 mm thick. 80,000–300,000 (av. 140,000) seeds/kg (22 accessions).

Similar species

***A. indica*:** pod segments almost square.

***A. americana*:** lower suture of the pod pronouncedly scalloped between the joints i.e. lower border of the segments curved.

Common names

Asia: □□ he meng (China); dinding, gedeyan, katisan, lorotis, peupeuteuyan, tis (Indonesia); kusanemu (Japan); makahiyang lalaki (Philippines); sano haag kai (Thailand)

English: budda pea, curly indigo, Indian jointvetch, hard sola, kat sola, northern jointvetch, sensitive jointvetch, sensitive Malayan vetch, sensitive vetch, southern joint vetch

Europe: eschynomene (French); indische Schampflanze, virginische Schampflanze (German); pianta modesta bastarda (Italian)

India: didhen, phulan, chhuimui, laugauni (Hindi); nalabi (Marathi); chatai, kitai, kitaichchi, netti, takkaippuntu (Tamil); neli-tali, nelitali, nellittali (Malayalam); jeeluga, tella jeeluga, bendu (Telugu); bedukasa, bendukasa, bendu kasa (Kannada); kath shola (Bengali); surlo (Oriya); ■■■■■■ kuhila (Assamese)

Latin America: angiquinho, maricazinho, papquinha, pinheirinho (Brazil); anil rizado (Spanish)

Pacific: ikin sihk (Pohnpei)

Distribution

Native/naturalized:

Northern America: Mexico (Tabasco, Tamaulipas); USA (Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas)

Caribbean: Puerto Rico

South America: Brazil

Africa: Angola, Botswana, Burundi, Cameroon, Chad, Democratic Republic of Congo (Zaire), Ethiopia, Gabon, Ghana, Guinea Bissau, Kenya, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome & Principe, Senegal, Somalia, South Africa, Sudan, Tanzania, The Gambia, Togo, Uganda, Zambia, Zimbabwe

Asia: Afghanistan, Bangladesh, Bhutan, Brunei, Cambodia, China, India, Indonesia, Iran, Japan, Korea, Laos, Malaysia, Myanmar, Pakistan, Philippines, Ryukyu Is., Sri Lanka, Taiwan, Thailand, Vietnam

Australasia/Pacific: Australia, Fiji, Papua New Guinea, Northern Marianas, Society Is., West Papua Niugini (Irian Jaya)

Indian Ocean: Madagascar, Mauritius, Réunion, Rodrigues

Note: The exact native range is obscure.

Uses/applications

Forage

Generally not considered a forage due to low palatability and possible toxicity. May have application as a fodder crop in rotation with rice.

Environment

A freely nodulating nitrogen-fixing species, *A. indica* can be used as green manure.

Other

The leaves can be prepared in various ways for human consumption, and have a role in folk medicine to treat a wide range of conditions. Pith from the stem can be used for floatation, and the woody stems can be used as fuel, either dry or as charcoal.

Ecology

Soil requirements

Largely on soils with texture ranging from sandy loam to clay, with pH from 4.5 to 8; sometimes on black saline soils. Distribution more determined by moisture availability and drainage than by soil texture.

Moisture

Found in seasonally flooded waterlogged grassland, freshwater swamp and aquatic vegetation.

Temperature

Extremely widely distributed throughout the tropics and subtropics, from near sea level to 1,530 m asl, and from about 35º N in North Carolina (USA) and 28º S in NSW (Australia), to near the equator in Africa, Papua New Guinea and South America. This equates to a range in average annual temperatures from about 17 to 27 ºC.

Light

No information available.

Reproductive development

Most lines tested commenced flowering between late January and late February at 21º S, the latest commencing in late March.

Defoliation

No information available.

Fire

No information available, but probably susceptible.

Agronomy

Guidelines for establishment and management of sown forages.

Establishment

Mechanical scarification of hand-harvested seed may be necessary to overcome hardseededness. *A. indica* appears to be somewhat promiscuous, but may nodulate more effectively with *Aeschynomene* inoculum CB 2312. Can form nodules at the base of the stem.

Fertilizer

No information available.

Compatibility (with other species)

No information available.

Companion species

Grasses: Grows in similar environments to *Hemarthria altissima* and *Acroceras macrum*.

Legumes: Often growing together with *Sesbania* spp. and *Acacia nilotica* subsp. *tomentosa*. Could grow with other water-loving, but not overly aggressive species such as *Aeschynomene americana* and *Vigna luteola*.

Pests and diseases

Susceptible to anthracnose caused by *Colletotrichum gloeosporioides* f.sp. *aeschynomene*.

Ability to spread

Spreads by seed in areas where conditions are suitable.

Weed potential

Can be a serious weed in rice paddies. Rarely found in any quantity beyond wet areas such as drainage ditches.

Feeding value

Nutritive value

No information available.

Palatability/acceptability

Low to moderate palatability.

Toxicity

There is evidence of toxicity of green plant material to ruminants. Seeds as contaminants in feed grain can be toxic to pigs, causing a vestibulo-cerebellar disorder.

Production potential

Dry matter

No information available.

Animal production

No information available.

Genetics/breeding

2*n* = 40.

Seed production

No information available.

Herbicide effects

Susceptible to the microbiological herbicide, *C. gloeosporioides* f.sp. *aeschynomene* ATCC 20358, which also attacks other *Aeschynomene* species in the series *Indicae*: *A. virginica*, *A. evenia*, *A. rudis* and *A. scabra*.

Strengths

- Adapted to wet, seasonally flooded land.
- Fixes nitrogen.

Limitations

- Not very palatable.
- At least some lines may be toxic.
- Frequently stemmy (low leaf:stem ratio).

- Weed potential in paddy rice.

Selected references

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Cultivars

None released.

Promising accessions

None reported.