J. Biodivers. Conservation 9(3): 98-101 ISSN: 2457-0761 (online)
2025 http://www.aprfjournal.in

Review Article

Morphology, distribution and ethnomedicinal uses of *Entada rheedii*: Largest seedpods of Fabaceae

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DOI: https://doi.org/10.5281/zenodo.17093334

Article Details: Received: 2025-07-20 | Accepted: 2025-09-10 | Available online: 2025-09-10

Abstract: *Entada rheedii*, known as African dream herb or snuff-box seed, is a large woody climber of the Fabaceae family, recognized by its massive buoyant seeds and long pods. Native to tropical Africa, Madagascar, South & Southeast Asia, and Australasia. It has diverse ethnomedicinal uses, including dream induction, skin and gastrointestinal treatments, and household applications due to its saponin-rich seeds. Present study consolidates existing knowledge on its morphology, distribution, traditional uses, phytochemistry, pharmacology, conservation challenges, and future research directions.

Keywords: Climber, ethnomedicinal, mimosoideae

Introduction

Large-seeded lianas in coastal and riparian ecosystems occupy a unique niche, characterized by mechanical strength, long internodes, and water-dispersed seeds. *Entada rheedii* embodies this strategy, producing thick, lens-shaped seeds in exceptionally long pods that can drift across oceans and wash up on distant shores. This trait has made it prominent in coastal ethnobotany, where its seeds are used as charms and curios, and in traditional medicine, particularly for dream induction in southern Africa and Asia (Yusuf and Abdullahi, 2019; Saising et al., 2022). This review compiles botanical, ethnopharmacological, and conservation information to support field identification, community documentation, and future research on this species.

Figure 1: Collection of pods of *Entada rheedii* by corresponding author

Figure 2: Seeds of *Entada rheedii*

Morphology: A vigorous, long-lived woody liana that ascends forest canopies along riverine, estuarine, and coastal forest margins. Stems can become thick and rope-like; bark is brown. Leaves are alternate, even-pinnate, typically with 2–4 pairs of obovate leaflets; rachis often ends in a bifid tendril facilitating climbing. Inflorescences are elongated spikes bearing numerous small, cream-colored flowers

consistent with mimosoid floral architecture. Pale-cream to greenish-cream corollas. The fruit is a massively elongated, laterally flattened legume divided by strong constrictions into many single-seed segments. Pod large, maturing from coriaceous green to woody chestnut-brown or black. Seeds are large, thick-coated, lens-shaped, and buoyant, enabling long-distance sea dispersal and frequent beach castings far from the nearest mother plant (Saxena and Brahmam, 1994; Nayak and Kumar, 2023; Figure 1-2).

Distribution, habitat, and ecology: It is distributed in Bangladesh, Bismarck Archipelago, Borneo, Cambodia, Cameroon, China South-Central, China Southeast, Christmas I., Comoros, DR Congo, East Himalaya, Equatorial Guinea, Ghana, Guinea, Guinea-Bissau, Gulf of Guinea Is., Hainan, India, Ivory Coast, Jawa, Kenya, KwaZulu-Natal, Laos, Lesser Sunda Is., Liberia, Madagascar, Malawi, Malaya, Maldives, Maluku, Marianas, Mozambique, Myanmar, Nansei-shoto, Nepal, New Guinea, Nicobar Is., Nigeria, Northern Territory, Philippines, Queensland, Senegal, Sierra Leone, Solomon Is., Sri Lanka, Sudan-South Sudan, Sulawesi, Sumatera, Taiwan, Tanzania, Thailand, Tibet, Togo, Uganda, Vietnam, Zambia and Zimbabwe (Source: PWO). In India, it is reported from Andaman Islands and from semi-evergreen to moist deciduous forests near perennial hill streams and coastal belts in states such as Odisha and along the Western Ghats. It has also observed near perennial streams of Sal (*Shorea robusta*) forest by the authors.

Ethnomedicinal uses: In South Africa, traditional healers (notably among Xhosa and other groups) use preparations of *E. rheedii* to induce vivid or lucid dreams, an aid for communicating with ancestors and for divination. Across Africa and parts of Asia, decoctions or poultices from seeds or other parts are applied for ailments such as diarrhoea, stomach-ache, and skin problems. In Jharkhand, India, the seed pod is used to cure skin infections (Nayak and Kumar, 2023; Kawade et al., 2025).

Phytochemistry and pharmacology: It has diverse pharmacological uses. Reported constituents include triterpenoid saponins (dominant), triterpenes, flavonoids, phenolics, and sugars. Of particular interest are rheediinosides A and B, two entagenic-acid–based triterpenoid saponins isolated from seed kernels and characterized by 1D/2D-NMR and MS; both compounds displayed antiproliferative and antioxidant activities in vitro. Plant parts also showed antioxidant, antitumor and antimicrobial activity (Kawade et al., 2025).

Conservation, trade, and sustainable use: The over-extraction of *Entada rheedii* in Odisha and Jharkhand's forest areas has been observed, highlighting the need for a conservation strategy. As a riparian species, it faces threats from dam construction, bank stabilization, and other human activities. Community-led conservation efforts are essential, and promoting seed collection from mature pods for replanting in natural habitats can help ensure its sustainability.

Future research works

1. There is a need to clarify regional misapplications with *E. gigas*/*E. pursaetha* using plastid and nuclear markers; assemble vouchered DNA barcodes across the Old-World range.

2. Expand isolation beyond rheediinosides A/B; evaluate structure–activity relationships (hemolysis vs. therapeutic windows) and identify safer fractions.
3. Conduct dose-response studies in validated GI-inflammation and sleep/dream-architecture models, with attention to CNS safety.
4. Develop community protocols prioritizing drift-seed collection and cultivation trials on trellises in coastal agroforestry systems.
5. Document ritual contexts and healer training around dream-induction with appropriate cultural permissions and benefit-sharing.

Conclusion

Entada rheedii stands out for its remarkable seed dispersal strategy, featuring giant seeds in long, constricted pods, alongside its rich ethnobotanical significance across multiple continents. Morphologically, it is notable for its large pods and mimosoid floral traits, adapted for climbing. Traditionally, it is used in dream-induction rituals in southern Africa and for gastrointestinal and dermatological treatments, likely due to its high saponin content. While modern research has validated some bioactivity, further work is needed in pharmacology, toxicology, and sustainable use. Coordinated research efforts can help translate traditional knowledge into evidence-based applications that respect cultural practices.

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