



Review on New Species of Ravenala Plant

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Abstract: *Ravenala madagascariensis* Sonn., travellers tree is one of the most popular medicinal plants in Madagascar, India and the several of African countries. *Ravenala* is a genus of *Ravenala* Adans containing monocotyledonous flowering plant. It is not a true palm (family Arecaceae) but it is the member of strelitziaceae family. It is used as antiseptic and used traditionally in India as tea made from young leaves for treatment of diabetes. Purpose of this article is to know or understand the study of whole ravenala plant including their morphological characters.

Keywords: *Ravenala madagascariensis* sonn., Stretziaceae, Madagascar, Cultural conditions.

Introduction: *Ravenala madagascariensis* Sonn. (Stretziaceae) is one such fascinating ornamental plant belonging to bird of paradise, also known as Visirivazhai in Tamil, is a native of India, Madagascar. *Ravenala* is a chiefly herbaceous angiospermous plants having an embryo with a single cotyledon (monocotyledonous) usually parallel-veined leaves. *Ravenala* tree is commonly known as Traveler's for the treatment of diabetics and kidney stone problems¹. Also the ravenala seeds were reported to be antiseptic². The leaves show close resemblance with that of banana (*Musa paradisiaca*). The scientific name *Ravenala* comes from Malagasy ravenala meaning "forest leaves"³. Such a plant used as food, for building purpose, for medicinal use such as antiseptic, antidiabetic, stomach ache. In this article we are studying about leaves, fruits, bark and seeds of ravenala plant. Five other species were described in all from Madagascar⁴. *Ravenala agatheae* Haev. Razanats., *R. blanchi* Haev., *V. Jeannoda* and *A. Hladik*, *R. grandis* Have., *Razanats*, *A. Hladik* and *P. Blanc*, *R. hladikorum* Haev., *Razanats*., *V. Jeannoda* and *P. Blanc*, *R. madagascariensis* Sonn., *R. menahirana* Have. And *Razanats*.

Plant Profile: *Ravenala madagascariensis*



Use in urban setting at [Jakarta, Indonesia](#)



In a park of [Phnom Penh, Cambodia](#)



Travellers Palm and flower, [India](#)



Detail of a leaf's structure



Seeds



Bark



The old petioles dry out brown



Young ravenala

Organoleptic Features:

Macroscopic and microscopic analysis:

The macroscopy and microscopy of the leaf was studied according to the method of Brain and according to the method of Turner⁵. For the microscopically studies the cross sections were prepared and stained as per the procedure of Johansen⁶ and the quantitative microscopy was studied as per the procedure given by Wallis⁷ ad P.K. Lala⁸. The powder analysis is carried out according to the method of Brain, Turner⁹ and the method of C.K. Kokate¹⁰.

Synonyms:

Tavellers plant, Traveller's palm.

Geographical source:

Ravenala is a genus of monocotyledonous flowering plants. It found in India, Madagascar.

Scientific Classification:

Kingdom	Plantae
Order	Zingiberales
Family	Strelitziaceae
Genus	Ravenala Adans.
Species	R. madagascariensis

Morphological Characters:

Region Of Origin: Madagascar, India.

Dimensions: Height:30 ft.0 in.- 50 ft. 0 in.

Width: 15 ft. 0 in.- 25 ft. 0 in.

Plant Types: Tree

Woody Plant Leaf Characteristics: Broadleaf Evergreen

Cultural Conditions:

Light: Full sun (6 or more hours of direct sunlight a day)

Soil Texture: High organic matter, Loam (slit)

Soil Drainage: Good drainage, moist.

Available space to plant: 12-24 ft.

24-60 ft.

Fruit:

Fruit Type: Capsule

Fruit Length: >3 inches

Fruit Description: Woody capsules 3 ½ long with edible blue seeds

Flowers:

Flower colour: White

Flower Inflorescence: Cyme

Flower Value To Gardener: Good dried, Showy

Flower Petals: 2-3 rays/petals

Flower Description: A seasonal bloomer 3 petaled white boat shaped spathes of flowers appear in cymes

Leaves:

Woody plant leaf characteristics: Broad evergreen

Leaf Type: Simple

Hairs Present: No

Leaf length: >6 inches

Leaf Width: >6inches

Leaf Description: Huge eaves form a fan shape, cup-shaped petioles collect rain water hence the common name, as it was thought travellers used this water.

Bark:

Bark Description: It contain 12 diameters unbranched trunk with leaf scar rings.

Cultivation: The plant requires a sunny spot until it is larger. It responds well to fertiliser, especially when nitrogen is high during the growing season. This produces better growth and foliage during cultivation. The height of growing plant is 7 m (23ft) and it requires moderate water for the process of cultivation.

USES:

Medicinal use: Ravenala plant is used in diabetic and kidney stone problem¹. The oil of ravenala seed is used as antiseptic².

Other uses: The leaves are used for roofing and as a packing materials. The leaf petioles and midribs are used for making the walls. The bark is used for making floors in houses and stem for making constructions of houses.

Materials and Methods:

A. Selection of plant: The fresh leaves of the plant were collected from the PDEAS Shankarrao Ursal college of pharmaceutical sciences and research centre Kharadi pune -14 Maharashtra, India.

B. Authentication of plant: The plant was Authenticated by Head of department of PDEAS Shankarrao Ursal college of pharmaceutical sciences and research centre Kharadi pune 14

C. Plant Material:

- 1) The fresh leaves of plant were collected from the Pune city, Maharashtra.
- 2) The leaves are cleaned by washing with running water and air dried at room temperature for four hours and later milled into powder using a grinding machine.
- 3) The powdered sample was stored in a sterile polythene bag and kept at $28 \pm 2^{\circ}\text{C}$ for 4 days for subsequent analyses.

D. Preparation of Extract:

- 1) The powdered sample (40g) was mixed with 200ml of n-Hexane (99.99%) and ethanol (95% v/v) respectively.
- 2) Aqueous extract was prepared by mixing 40g of the powdered leaf samples with 200ml of cold distilled water ($28 \pm 2^{\circ}\text{C}$) and hot distilled water (100°C), respectively.
- 3) The mixtures were allowed to stand for 72h with constant stirring, and then filtered with a clean white muslin cloth.
- 4) The ethanol and n-Hexane extracts were later air-dried at $28 \pm 2^{\circ}\text{C}$ for 48h and reconstituted in 30% Dimethylsulphoxide (DMSO) by mixing 10g each extract with 50ml of 30% DMSO to make a concentration of 200mg/ml.
- 5) The reconstituted ethanol and n-Hexane extract were allowed to stand for 24h before sterilization was achieved using Millipore membrane filter (0.22μ).

RESULT AND DISCUSSION

Different parts of the ravenala plant was studied including their morphological characteristics. The most commonly used part is trunk, leaves and seeds which are mostly used in medicinal use. Leaves of ravenala plant are used for diabetics as per extraction.

CONCLUSION:

Ravenala madagascariensis is very important in cultural, edible and traditional as well as medicinal purpose. The sale of Ravenala madagascariensis is used for building materials can also provide an additional source of income to the family.

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