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CHARACTERIZATION OF *Pongamia pinnata* L.Pierre. A REVIEW

*S.Rout[1], N.Khare[1], S.Beura[2], S.Nayak[3] and S.S. Patra[1]

[1]School of Forestry & Environment, Sam Higginbottom Institute of Agriculture Technology and Sciences, Allahabad-211007 (Uttar Pradesh), INDIA.

[2]Biotechnology-cum-Tissue Culture Centre, Orissa University of Agriculture and Technology, Bhubaneswar-751003 (Odisha), INDIA.

[3]Department of Forest Products and Utilization, College of Forestry, Orissa University of Agriculture and Technology, Bhubaneswar-751003 (Odisha), INDIA.

*Corresponding Author email:sandeeprout1988@gmail.com

ABSTRACT

Pongamia pinnata L.Pierre belongs to Leguminaceae family is underutilized tree. It's traditionally used as illuminating oil and for lubrication and as curing medicine. In the present study *Pongamia pinnata* was studied for its multipurpose uses as watershed afforestation, avenue plantation and ethnomedicinal information. Overall, this paper gives an overview on covering the biology, and various industrial uses.

INTRODUCTION

Plants role is considered very promising for the human development out of which *Pongamia pinnata* has recently been recognized as a viable source of oil for bio fuel industry. Keeping in view the importance of the species the purpose of this review is to provide information about the species.

DESCRIPTION

Range:

Native to Indian subcontinent and it is found almost from tropical dry to subtropical dry forest up to an altitude of 1200m (Chaturvedi, 1975). It is a medium sized evergreen or briefly deciduous tree.

Common Name of *Pongamia pinnata*:

In some part of the world *Pongamia pinnata* is referred to as *Pongamia glabra*, in English known as Indian Beech, where as in others it is known as the Karanja, Pongam. It is chiefly found along the bank of stream and river or near sea coast, beach and tidal forest (Troup, 1921).

Classification of *Pongamia Pinnata:*

Kingdom:	Plantae
Division:	Magnoliophyta
Class:	Magnoliopsida
Order:	Fabales
Botanical Name:	*Pongamia pinnata*
Common Name:	Karanja, Pongam
Family:	Leguminaceae

History:

Pongamia pinnata were historically, been used in India and neighbouring regions as a source of traditional medicines (Meera *et.al.*, 2003), animal fodder (Mandal *et al.*,1982), green manure, timber, fish poison and fuel. The tree is known for its multipurpose benefits.

Morphological Character:

Pongamia pinnata is a medium sized evergreen or briefly deciduous glabrous tree, 15-25m high, with straight or crooked trunk 50 -80 cm or more diameter and broad crown of spreading or drooping branches. The bark is greyish green or brown, smooth or covered with tubercles, leaves compound, imparipinnate, leaflets opposite, 5-9 in number ovate or elliptic. Flowers white tinged with pink or violet, fragrant, in axillary racemes pods are compressed woody, elliptic to obliquely oblong pointed at both ends, Indehiscent, yellowish gray when ripe, varying in size and shape, 4.0-7.5 cm long and 1.7-3.2 cm broad, seeds usually one, rarely two, elliptical or reniform, 1.7-2.0 cm long and 1.2-1.8 cm broad, wrinkled with reddish brown leathery testa (Warrier *et.al.*, 1995).

Uses of *Pongamia pinnata*:

Pongamia pinnata is one of the suitable species for afforestation especially in watershed areas and drier parts of country. Andrapradesh, Harayana, Karnataka, Madhya Pradesh,

Odisha, Rajasthan, Tamil Nadu and Uttar Pradesh are the potential states in the country. Large numbers of Karanja trees have also been planted in roadside both in highways and also in urban area during last two decades as avenue plantation. The tree starts bearing at an age of five to seven years. The fruiting season is extended in general from November-December to May-June. The pods are collected and the shells are removed by hand. The yield of fruits varies from 9 to 90 kg per tree for different age trees (CSIR, 1966).

The oil yield is reported to be about 32 %. The oil can be used for the production of biodiesel because of its favourable physiochemical properties. It has no polyaromatic compound reduced toxic smoke and soot emission (Naik *et. al.,* 2008). Besides its use for production of bio-diesel the oil is also used for tanning leather, soap, as illuminating oil and for lubrication. The oil is also used for curing rheumatism, powdered seed is used as febrifuge, tonic and for curing bronchitis and whooping cough. Flowers are used for diabetics (Hewamanna *et al*., 2004) and bark for internal bleeding piles, diarrhoea and curing beriberi (Kirtikar *et.al.,* 1984) .The Fruits of *Pongamia pinnata* were used for abdominal tumors (Hartwell,1967), useful in ailments of female genital tract, leprosy, tumors, piles, ulcers and upward moving of the wind in the abdomen (Rastogi *et.al.*,1960)

CONCLUSION

Pongamia pinnata is one among many oil seeds that can be used to produce biodiesel, soap and poultry feed. The markets of different products from this species have not been properly explored or quantified. It helps in meeting some of the needs for energy services for rural communities, it is considered as one of the most useful trees as ethnomedicinal and industrial purpose and also creating avenues for greater employment.

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