

## Ethnomedicinal Uses of *Millettia pinnata* L. and *Cassia tora* L.

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### Abstract

*Millettia pinnata* L. belongs to the family Fabaceae. It is also known as Indian beech, Pongam oil tree, karanj (Hindi). It is a medicinal plant, used in Jharkhand, India for treating various diseases. It is a medium-sized evergreen or briefly deciduous tree. *M. pinnata* L. is used for anti-inflammatory, antiplasmodial, antidiarrhoeal, anti-ulcer, antihyperammonic and antioxidant activity. *M. pinnata* L. is used for the treatment of piles, head pains, leucoderma, skin diseases, wounds, leprosy, lumbago, chronic fever and liver pain. *Cassia tora* L. belongs to the family Fabaceae. It is a dicot legume known as sickle senna, sickle pod, tora, coffee pod, tovara, chakvad. It is a herbaceous annual herb. The whole plant as well as specific parts such as roots, leaves and seeds has been widely used. The leaf and seeds are acrid, laxative, antiperiodic, anthelmintic, ophthalmic, liver tonic and cardiotoxic. The leaf and seeds are useful in leprosy, ringworm, dyspepsia, constipation, cough, bronchitis and cardiac disorders. The present investigation provides a novel broad spectrum protocol for further research.

**Keywords:** Medicinal plant, diseases, *Millettia pinnata* L., *Cassia tora* L.

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### INTRODUCTION

India consists of 48,158 species of plants in its ten biogeographical regions [1]. Several studies have focused on important medicinal plant species [2, 3].

*Millettia pinnata* L. (Family: Fabaceae) is found in tropical and temperate Asia. It is often known by synonym *Pongamia pinnata* as it was moved to the genus *Millettia* only recently. It is known as **Indian beech**, **Pongam oil tree**, **karanj** (Hindi), **pungai** (Tamil), **karach** (in Bengali), **naktamala** (Sanskrit). *M. pinnata* L. is a medium-sized evergreen or deciduous tree that grows to about 15–25 m in height. The root is branched tap root system. The stem is greyish green or brown, smooth or covered with tubercles. The leaves are imparipinnate, leaflets opposite. Inflorescence is raceme-like, axillary, bearing pairs of strongly fragrant flowers. The brown seed pods appear immediately after flowering and mature in 10–11 months. The pods contain one or two bean-like brownish-red seeds.

*Cassia tora* L. belongs to the family Fabaceae. It grows in tropical parts of India. It is a dicot

legume. It is known as **sickle senna**, **sickle pod**, **tora**, **chakvad**, **thakara** in Malayalam and **foetid cassia**. *C. tora* is an annual herb. It has pinnate leaves. The flowers comprises of five petals. The seeds of *C. tora* are rhombohedral and brown in color. The whole plant as well as specific parts such as roots, leaves and seeds have been widely used and was suggested to combat different diseases. *C. tora* is considered as an annual weed and has a high stress tolerance. It exhibits various pharmacological properties viz., laxative, antihelminthic, liver tonic, cardio tonic and expectorant.

### MATERIALS AND METHODS

Due to its unique location in the vicinity of different habitat types, the campus consists of suitable environmental conditions to supports a variety of floral species. *M. pinnata* L. and *C. tora* L. have been collected from the college campus. Both the plants were identified by plant taxonomist. Ethnomedicinal uses of plants were identified with the help of relevant floras, book chapters and published literature [4–11]. Tools used in collection of data were camera, diary, questionnaire etc.

## Ethnomedicinal Uses

Field survey was conducted to collect information related to ethnomedicinal uses of *M. pinnata* L. and *C. tora* L. Information was collected concerning the different parts used in different diseases etc.

### 1. *Millettia pinnata* L.

The crude extract of *M. pinnata* L. have been widely used for the treatment of large number of human ailments. *M. pinnata* L. is among many plant species which have been reported to have ethnomedicinal uses [12, 13]. In Ayurveda and Unani medicine, the plant is used for anti-inflammatory, antiplasmodial, antidiarrhoeal, anti-ulcer, anti-hyperammonic and antioxidant activity [14]. Muruganandan *et al.* [15] reported the use of extracts of *Pongamia pinnata* seeds for anti-inflammatory activity. Kurkure *et al.* [16] studied *Pongamia pinnata* stem bark therapeutically as an antiseptic in skin diseases and for its wound healing properties.

The root, leaf, flower, seeds and bark of *M. pinnata* L. possesses medicinal properties and used as drug by the Indian folks. *M. pinnata* L. is used for the treatment of piles, head pains, leucoderma, tumors, skin diseases, wounds, leprosy, ulcers and liver pain. It is good for tumour, wounds, ulcers, itching and urinary discharges. It also cures biliousness, piles, head pains, leucoderma, skin diseases and wounds. Seeds of *M. pinnata* L. are used in ear ache, chest complaints, lumbago, and chronic fever. Seed oil is used in leucoderma, and cutaneous infection including herpes and scabies.

The pharmaceutical significance of *M. pinnata* L. is mainly because leaf and seed contain bioactive alkaloids such as glabrosaponin, kaempferol, kankone, kanugin, karangin, neoglabin, pinnatin, pongamol, pongapin, and quercitin.

### 2. *Cassia tora* L.

*C. tora* L. is most widely found in India as a weed and a well known herb used in Ayurvedic medicine. It shows various pharmacological properties such as laxative, antihelminthic, ophthalmic, liver tonic, cardio tonic and expectorant.

The root, leaf, flower, fruit and seed possess medicinal properties. According to Ayurveda the leaves and seeds are acrid, laxative, anthelmintic, ophthalmic, liver tonic, cardiogenic and expectorant. The leaves and seeds are useful in leprosy, ringworm, flatulence, colic, dyspepsia, constipation, cough, bronchitis, and cardiac disorders. Other medicinal provisions from plant parts include balm for arthritis using leaves of *C. tora*. It acts as a liver stimulant, mild laxative and heart tonic. It maintains the normal level of cholesterol. *C. tora* L. is used in treating piles and hemorrhoids as well as relieving the pain caused on excretion. The juice extracted from its leaves is used in case of skin ailments, rashes and allergies. It is also used as an antidote in case of various poisonings.

The ethnomedicinal significance of *C. tora* L. is mainly due to the presence of chemicals such as emodin, stigmaterol, palmitic, stearic, succinic and d-tartaric acids uridine, quercitrin, isoquercitrin, cinnamaldehyde, tannins, mannitol, coumarins and essential oils in the leaves and seeds.

## RESULTS AND DISCUSSION

*M. pinnata* L. is locally known as **karanj** in Jharkhand, India. Vaidhyas used different parts of this plant in many diseases such as piles, head pains, leucoderma, skin diseases, wounds, leprosy, lumbago, chronic fever and liver pain. Seeds of *M. pinnata* L. are used in ear ache, chest complaints, lumbago, and chronic fever. Oil of seed oil is specially used in leucoderma, cutaneous infection including herpes and scabies (Figures 1 and 2).

*C. tora* L. is known as **tovara, chakvad**. Roots, leaf and seeds of plant are used in various diseases. Leaf and seeds are useful in cough, bronchitis, leprosy, ringworm, dyspepsia, constipation and cardiac disorders. Leaf of *C. tora*. is used as balm for arthritis and also used in the treatment of eczema and dermatomycosis. It maintains the normal level of cholesterol. The juice extracted from its leaves is used in case of skin ailments, rashes and allergies. It is used as an antidote in various poisonings.



Fig. 1: *Millettia pinnata* L.



Fig. 2: *Cassia tora* L.

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