



ISSN (E): 2320-3862
ISSN (P): 2394-0530
www.plantsjournal.com
JMPS 2022; 10(6): 95-98
© 2022 JMPS
Received: 06-07-2022
Accepted: 10-08-2022

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A review on some ethnobotanical important trees of district Sonbhadra, Uttar Pradesh

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Abstract

Sonbhadra, The Energy Capital of India is the second largest district of Uttar Pradesh. It had been the centre of activities of pre-historic man which is evident from the rock paintings (pre-historic cave art) in the Valley of Son and Belan Rivers. Sonbhadra has a relatively subtropical climate with high variation between summer and winter temperatures which gives moist deciduous forests and dry deciduous forest. About 36-40 percent of its geographical area is covered with dry mixed deciduous type of forest, which has several valuable tree species and medicinal plants. Several tree species are generally found scattered under traditional agro forestry system. These forest and tree become boon for the rural and tribal people of the area for common illness. Here we are presenting ten important medicinal plants and their utilization such as *Acacia catechu*, *Aegle marmelos*, *Albizia lebbek*, *Anthocephalus cadamba*, *Bauhinia purpurea*, *Boswellia serrate* etc. These tree are uses by tribal people for various illness from skin disease to lever problem. So there are several variety of plants belonging to different families are used by tribal and rural peoples. The knowledge of medicinal value can strengthen our links to the natural world. The knowledge (Ethanobotany) help in learning of diverse plants and as well as understanding and interpreting the medicinal properties of plants.

Keywords: *acacia catechu*, *aegle marmelos*, *albizia lebbek*, *anthocephalus cadamba*, *bauhinia* etc

Introduction

Sonbhadra or Sonbhadra is the second largest district by area of Uttar Pradesh. It is vary ancient district as the valley of son and Belan Rivers abounds in caves which were the earliest dwellings of the primeaval inhabitants. This area had been the centre of activities of pre historic man which is evident from the rock paintings found in abundance. These painting s are of the periods ranging from Mesolithic to Paleolithic ages ^[1]. There are several tribal groups in habitating this regions as Gond, musahar, bhil, agariya, baiga, bhuiya, chero, kharwar, panika, pahariya, patari ^[2]. These tribal groups mainly uses plants and plants products as medicine and many other works. The Gond tribe is dominant in the area and uses plants as medicines ^[3]. Sonbhadra geographical area is covered with mixed type of vegetation but most area contain dry and deciduous type of forest. From southern part of region mostly evergreen forest is abundant. Several trees and vegetation found as agroforestry system because peoples largely depend on the most of these trees for therapeutic value ^[4]. There are several plant species distributed throughout the district which provide active compounds for cure of common ailments.

Madhuca longifolia (Mahua)

Madhuka is tree belong to Sapotaceae family. Stem is up to 20 m high, bark grey, thick, vertically cracked, exfoliating in thin scales, reddish-brown or dark red with milky latex. Leaves simple, alternate, clustered at the end of branchlets; stipules lateral, lanceolate, cauducous. Flower is bisexual, axillary; creamy, calyx corolla form tube or funnel structure. Fruit a berry, ovoid, greenish, fleshy with two seeds ^[5].

The tree is recongnised by its fragrance during March April month. Most of the flowers fall down. It is important plant among tribals who use their flower for food and medicinal purposes. Tribal people use alcoholic dring mahua which is fermented product in their culture. Mahua is important in tribal women during mahua. Its fruit is also essential item in tribes during festival. Anthelmintic activity: flowers of *Madhuca longifolia* found to be possible anthelmintic activity in *Pheretima posthuma* (Indian Earth Worm) ^[6], antibacterial ^[7], analgesic and hepatoportective ^[8, 9].

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The stem of Mahua found to be antidiabetic ^[10], used by Tribals for daily practices.

***Acacia catechu* Linn. (Khair/Kattha)**

Acacia catechu syn. *Senegalia catechu* is deciduous thorny tree which grow up to 15 m in height. The common name of plant is khair or kaththa. It is belong to mimosaceae family. This plant can be identified by its bark which is dark brown or dark grey outside and red inside. Leaves are bipinnate, alternate, stipulate, stipular spines. Flower form spike, white or pale yellow, 35-75 cm long resembling to lamb's tail. Fruit is brown, pod 5-10 cm long, flate, straight, unlobed or sinuate margins ^[11]. More than 10 effective compounds have been isolated which are antioxidant as well as anticancerous as kaempferol, quercetin, catechin etc ^[12]. There are folk medicinal claims that *Acacia catechu* wood extract helps in the relief of pain and is also useful to diabetic patients to maintain normal sugar levels ^[13] and also in gastrointestinal trouble ^[14].

***Albizia lebeck* (Sirish)**

It is belong to fabaceae family characterized by height of 18–30 m tall with a trunk 50 cm to 1 m in diameter. The leaves are bipinnate, 7.5–15 cm long, with one to four pairs of pinnae, each pinna with 6–18 leaflets. The flowers are white, white to greenish-yellow and borne in rounded, axillary clusters with numerous long stamens, and very fragrant. The fruit is a pod 15–30 cm long and 2.5-5.0 cm broad, containing six to twelve seeds ^[15]. Lebeck is used to treat boils, cough, eye lung and pectoral problems tumors ^[16]. Traditionally lebeck leaf paste is applied externally on the skin for wounds and skin diseases ^[17]. Its leaves are reported to be good for ophthalmic diseases, night blindness, syphilis, ulcer, cold, cough, and respiratory disorders ^[16, 17]. The bark is bitter, cooling, alexiteric, and anthelmintic, and cures diseases of blood, leucoderma, itching, skin disease, piles, excessive perspiration, inflammation, bronchitis, and toothache and strengthens the gums and teeth; it is used for leprosy, deafness, boils, scabies, syphilis, paralysis, and weakness ^[18] as well as proven as antioxidant and antimicrobial activity as well as its nano-particle act as anticancerous agent ^[19]. The flowers are aphrodisiac, emollient, and maturant, and their smell is useful in hemicranias ^[20]. Flowers are used for the treatment of spermatorrhea. Its seeds are eaten after boiling by native people.

***Bauhinia purpurea* (Gulabi kachnar) and *Bauhinia variegata* (Kachnar)**

Bauhinia purpurea is a small to medium-size deciduous tree growing to 17 feet tall. It was mostly found at road side started from Robertganj to Duddhi and in some gardens and parks. The leaves are 10–20 centimetres long and broad, rounded, and bilobed at the base and apex. The flowers are conspicuous, pink, and fragrant, with five petals. The fruit is a pod 30 centimetres long, containing 12 to 16 seeds. Leaves are alternate ^[21]. This plant has been known to possess antibacterial, antidiabetic, analgesic, anti-inflammatory, anti-diarrheal, anticancerous, nephroprotective and thyroid hormone regulating activity ^[22]. The root extract was found to be thyroid stimulant in mice ^[23]. Recently work on leaf extract of this plant found to be antibacterial, antioxidants, anticancerous and catalytic properties ^[24]. *Bauhinia variegata* (Family Caesalpiniaceae) is a small to medium-sized deciduous tree growing to 10–12 metres tall. The leaves are orbiculate shaped, long and broad, rounded, and bilobed at the

base and apex. The flowers are conspicuous, bright pink or white five petals with elongated stamens. The fruit is a seedpod dries completely on the tree begins to twist into corkscrew shaped. *B. variegata* has been widely used as a medicinal plant in the tribal and local peoples for medicines. It is believed to possess anti-tumour, anti-microbial, anti-inflammatory, anti-goitrogenic, hepatoprotective and haemagglutination properties ^[25, 26]. It is traditionally used in bronchitis, leprosy, and tumors. The stem bark is used as astringent, tonic, anthelmintic and antidiabetic ^[26, 27].

***Bombax ceiba* (Semal)**

It belongs to Malvaceae family. Semal is 3-5 meter large tree. It is recognized by its rosette leaf and red flower. In the month Feb to March all the leaves abscised and only flower remain which give it red look. The flower is large, red coloured, leathery petals containing numerous stamens and one carpel. The root extract is used to cure Leucorrhoea, spermatorrhea and sexual problems ^[28, 29]. Leaf extract used in the treatment of skin problem and body pain ^[30]. Stem bark is used in hepatic disorder, anti-inflammatory ^[30] hydrocele, leucorrhoea, gonorrhoea ^[31]. *Bombax ceiba* thorn is also very useful in skin related problems ^[32].

***Delonix regia* (Gulmohar)**

It belongs to fabaceae family. Gulmohar is 3-4 meter long tree recognized by its red flower and long pod fruit during month of April to May. Flowers are found as cluster of flame red. Each flower has spoon shaped spreading petals. Leaves are bipinnate, alternate, feathery, 20-60 cm long, bearing 10-25 pairs of pinnae, each with 30-60 opposite leaflets ^[33]. The plant is used for treatment of chronic fever, antimicrobial, constipation, inflammation, arthritis, hemiplegia, piles, boils, pyorrhea, scorpion bite, bronchitis, asthma and dysmenorrhoea. Root bark shows antibacterial activity ^[34]. Leaf is found to have phytochemical, cytotoxic, hepatoprotective and antioxidant properties ^[35].

***Cassia fistula* (Amaltash)**

Cassia fistula belongs to subfamily Caesalpinoideae of Fabaceae family. This plant is native to Indian subcontinents. It is identified by pendulous racemes yellow flower during March to May. The tree is medium sized growing up to 10-20 m. The leaves are deciduous, pinnate, broad and dark green. The fruit is legume, long and broad. Traditionally it is considered as disease killer. The roots are used in the treatment of skin disorders, syphilis, leprosy, and tuberculosis ^[34]. The leaf paste is used as antimicrobial treatment ^[35]. Bark extract used as antibacterial activities ^[36]. Traditionally bark of *Cassia fistula* used in treatment of inflammatory swellings and as a cleaning agent for ulcers and wounds ^[37].

***Butea monosperma* (Dhak)**

Butea monosperma is a small-sized dry-season deciduous tree, growing to 15 m (49 ft) tall. It is a slow-growing tree: young trees have a growth rate of a few feet per year. The leaves are pinnate, with an 8–16 cm (3.1-6.3 in) petiole and three leaflets, each leaflet 10-20 cm (3.9-7.9 in) long. The flowers are 2.5 cm (0.98 in) long, bright orange-red, and produced in racemes up to 15 cm (5.9 in) long. The fruit is a pod 15-20 cm (5.9-7.9 in) long and 4-5 cm (1.6-2.0 in) broad. It is also called flame-of-the-forest, palash, and bastard teak as per the ancient Ayurvedic text book Charaka Samhita, seeds of *Butea monosperma* are insecticidal and Ayurvedic physicians used them to compound medicines for diarrhoea

and dysentery. Juice made from the *Butea monosperma* roots, bark, and leaves are administered for regulating menstrual flow, colic and intestinal worms. The ointment made from the leaves is useful for boils, pimples, swellings, and for shrinking haemorrhoids. Flowers of *Butea monosperma* are useful as astringent, depurative and tonic [38]. Root was found to be antibacterial [39], stem bark as wound healing properties [40], flower as anti-inflammatory activities [41] and fruit as well as seed found to be antimicrobial and anti-inflammatory [42, 43].

Diospyros melanoxylon (Tendu)

Tendu is flowering tree belong to Ebenaceae family. Its leaves used to wrap around tobacco to create Indian *Beedi*. It is medium sized tree (up to 25 m, and 1.9m girth), stem is hard, erect, branched, sheathed with hard bark. Leaves are alternate, opposite, coriaceous, upto 35cm long, tomentose on both sides when young, becoming labourious above when fully grown. Tendu tree is dioecious possess male and female flower on separate trees. Male flower are borne in clusture of three, female flower is single. Floweres are yellowish white or greenish white, tubular, petals and sepals four, ovate, curved back. Sepals are persistant with fruit. Fruit is spherical, olive green, pericarp hard. Tendu tree is commonly used for medicinal importance and for food. Its barks is used against diabetic [44]. Tendu fruit is found cooling, antioxidant and astringent during summer season [45]. Leaves are found to be antifungal used to wrapped tobacco making *Beedi* [46].

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