

The Medicinal Benefits of Tendu Fruits: A Traditional Perspective

(*Leena Preeti Lakra, Harsha Nayak, Anjali Toppo and Yaswant Kumar Patel)

Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur, Chhattisgarh-495009, India

*Corresponding Author's email: leenapreeti01@gmail.com

Tendu tree *Diospyros melanoxylon* Roxb. (Family: Ebenaceae) is called Tendu in Hindi, Malabar Ebony and Persimmon in English and Tinduka in Sanskrit. This fruit is also very popular in tribal communities in Orissa, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Telangana and other states in South-Central India. Although its fruit is edible, the leaves of the tree are economically important. The leaves are used to make simple bidi in Chhattisgarh and



cigarettes, which are smoked by poor and working-class people in India. Every year, the people of the tribal communities living in forest the state government sell the rights to harvest tendu leaves from trees growing in the forest through auction. They harvest the leaves and further use them to make Bidis, which is a big industry in India. Although this fruit is sold by tribes in the local community level; it is not popular in cities. In folk medicine, Tendu fruit is used as a cooling astringent. Foresters use this fruit to resist heat to consume orally. Tribes use this fruit to increase energy and efficiency, so they can work long hours without fatigue. Tendu-Seeta pudding is a famous recipe from Chhattisgarh, India. Immature fruits can be used to relieve flatulence, and ripe fruits can be used to check for excessive bile secretion. Fruit extract can relieve fistula problems works as laxative and can also be used as a skin care agent. In ethnic medicine, it can also be used to treat rheumatoid arthritis and abdominal pain. It is reported that the methanol extract of *Diospyros melanoxylon* has saponins, tannins, terpenes, flavonoids, alkaloids and essential oils. Tendu fruits mature during April to May. The fruit is ovoid or spherical. It turns yellow to light orange when cooked.

The Tendu tree, also known as *Diospyros melanoxylon*, is a medium-sized tree that can grow up to 20 meters in height. It has a straight trunk with a diameter of 60-80 cm and a crown that is dense and spreading. The leaves of the Tendu tree are elliptic in shape, shiny and dark green in color. The flowers of the Tendu tree are small, white or yellowish in color, and are produced in clusters. The fruit of the Tendu tree is a fleshy berry that turns yellow or red when ripe. The Tendu tree is known for its valuable and versatile uses, from its leaves that are used to make traditional Indian cigarettes (beedis) to its durable timber that is used in construction and furniture-making. The tree is also an important source of food and shelter for many birds, animals, and insects, and its leaves and fruit are a source of food for many animals. The Tendu tree plays an important role in maintaining the ecological balance of the forest, as it is a hardy tree that can grow in a wide range of soil types and climatic conditions.

Botanical Description

The Tendu tree (*Diospyros melanoxylon*) produces small, round, and hard fruits known as tendu. The fruit is a capsule that contains numerous seeds surrounded by a sweet, edible pulp. The fruit is green when young and turns blackish-brown as it ripens.

Fruit: Tendu fruit is a drupe which develops from superior ovary. Calyx remain attach with fruits which provides better attachment of fruits with branches. Fruits olive green, ovoid or

globose 3-4 cm across; 1, 2-, 3-, 4-, 5-, 6-, or 8- seeded berries. Pulp is yellow, soft and sweet. Seeds compressed, oblong, shiny, often banded. Some times tendu set fruit parthenocarpically. It has double sigmoidal growth pattern. During the fruit developments, dropping of unfertilized and insect damaged fruits become a severe problem which can be controlled by spray of GA3 at full bloom stage. Fruits are available in the month of May and June.

Flowers: Tendu plants bear 3 types of flowers i.e. pistillate, staminate and perfect, but sometimes dioecious situation do exists. Under such conditions, suitable pollinizers are needed. The male flower with non-functional ovary usually appears axillary in the clusters of 3-4 flowers. Male flowers are mauve in colour, tetramerous to sextamerous, 1-1.5 cm long, sessile or nearly sessile in short peduncles, mostly 3-flowered. Female flower can be easily distinguished by presence of four lobbed large dark green calyx. The flowers appear singly. Female flowers are mauve, mostly extra-axillary or sometimes solitary, axillary generally 2, opposite each other, larger than the male flowers. The hermaphrodite flowers are intermediate in size and occasionally found in the cluster of male flower. Dried flowers are observed to be useful in urinary, skin and blood diseases.

Flowering: Flowering in tendu starts after 5-7 years of planting. In case of seedling plants under forest eco-system, flowering and fruiting get further delayed. The flowering takes place on new growth. In most of the case of tendu, flower bud differentiation starts in early June and continues up to August. The tendu plants inters into floriferous phase during spring. The flowers appear from April to June on new shoot and the fruits ripen after 1 year.

Leaves: The leaves are reported to contain crude fibre (25.28%) and crude protein (7.12%). Leaves are used as a styptic in the treatment of scabies and old wounds and as a laxative and carminative medicine. The leaves possess antimicrobial properties due to the presence of "Pentacyclic triterpenes". The leaves are commonly used for making beedis (an indigenous conventional cigarette which uses the tendu leaf for wrapped around of tobacco instead of paper).

Seeds: Powdered seeds are also sold in markets along with fruits, and the seeds have been prescribed in India as a cure for mental disorders, nervous breakdowns, and palpitations of the heart.

Bark: The bark colour is as pelican, exfoliating in rectangular scales. The bark is used to "cure" small-pox by native people. The bark of Tendu tree found in India has determined to have significant antiplasmodial effect against Plasmodium falciparum, which causes malaria in humans.

Timber: Wood is hard, whitish-pink, tough, fairly durable, and used for building shoulder poles, mine props and shafts of carriages. The wood of this tree is also utilized for making boxes, combs, ploughs and beams.

Traditional Uses

The tendu fruit has several traditional uses in India:

- ❖ The tendu fruit is commonly used in traditional medicine to treat various ailments such as dysentery, diarrhea, and respiratory problems.
- ❖ The dried tendu fruit powder is used as a carminative (gas-relieving) and astringent agent, and is useful in treating urinary, skin and blood diseases. This may be attributed to the high tannin content (15-23%) of the fruit.
- ❖ Traditional medical practitioners use the tiny fruits to treat malaria, diarrhea and dysentery.
- ❖ Due to antimicrobial properties, the leaves are also applied on cuts and bruises.
- ❖ The seeds can be intoxicating and have been prescribed in traditional medicine as a cure for mental disorders, nervous breakdowns, and palpitations of the heart.
- ❖ The leaves have been extensively used in Indian traditional medicine as a diuretic, styptic (astringent), laxative, and carminative. They are also used to cure night blindness.

So, the tendu fruit, leaves, bark and seeds have a wide range of traditional medicinal uses in India to treat various ailments and conditions. The fruit and leaves in particular are commonly used in traditional remedies.

Health Benefits of Tendu Fruit

Tendu fruit is a versatile and nutritious addition to a balanced diet, offering a range of health benefits.

- ❖ Rich in fiber, which helps regulate digestion and maintain a healthy weight.
- ❖ Contains antioxidants and tannins that benefit heart health by reducing blood pressure, lowering inflammation, and decreasing cholesterol.
- ❖ Helps reduce inflammation, which is linked to conditions like heart disease, arthritis, diabetes, cancer, and obesity.
- ❖ Beneficial for eye-related diseases. Provides relief from ear pain and helps for healing mouth ulcers.
- ❖ Reduces cough and fever and stops diarrhea and dysentery
- ❖ Helps in dissolving kidney stones.
- ❖ Reduces leucorrhea (vaginal discharge) in women.
- ❖ Aids in paralysis and facial palsy, also restores skin glow and complexion.
- ❖ Assists in fighting cancer due to its antioxidant properties.
- ❖ Supports a healthy digestive system, regulates blood sugar levels, and is good for diabetics and hypertension.
- ❖ Moderates water retention, strengthens immunity, improves vision, and enhances red blood cell production.

Effects of Excessive Consumption of Tendu Fruit

- ❖ Excessive consumption of tendu fruit, being fiber-rich, can lead to stomach-related issues such as stomach ache, vomiting, and other gastrointestinal problems.
- ❖ Individuals who are on excessive diabetes medications should avoid consuming tendu fruit in excess as it may impact blood sugar levels, potentially leading to uncontrolled blood sugar levels.