

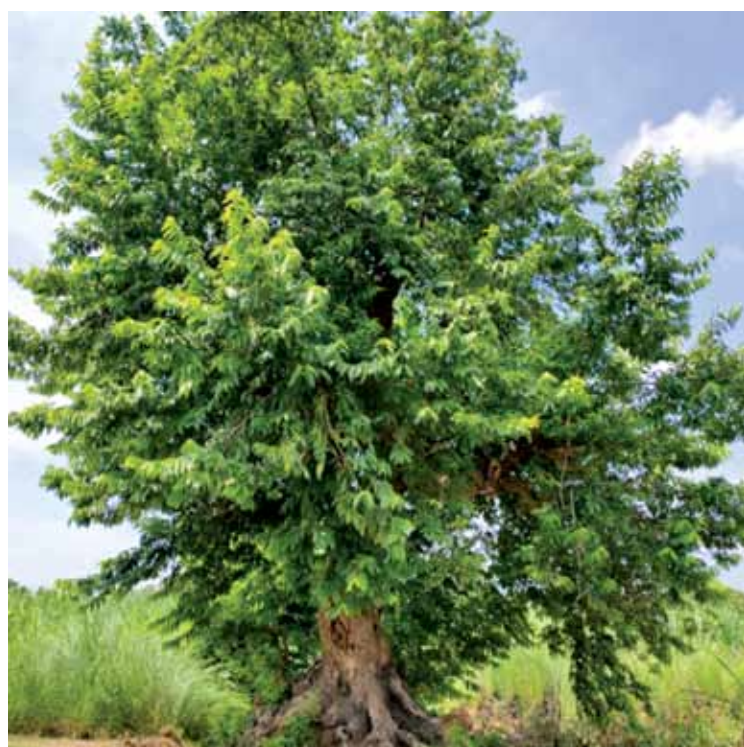
## Importance and uses of underutilized edible fruit Ankol

***Alangium salvifolium* (Linn. F.) Wang. is commonly known ankol, belongs to family Alangiaceae. *A. Salvifolium* is an underutilized edible, small deciduous shrub that can grow up to a height of 10 m. It is mostly found in wild form in forest and in dry region of plains and also in low hills. It has high amount of carbohydrates, of vitamin C, E, potassium and sodium. It also has anthocyanin and flavonoid pigments. The leaves stem and root are a rich source of alkaloid, tannin and phenols. Stem and bark have antifungal and antiferility activity, respectively.**

**A**LANGIUM *salvifolium* is an underutilized edible fruit. It is known by many names like ankol in hindi, ankolaha in Sanskrit and sage-leaved *Alangium* in english. It belongs to the genus *Alangium* and family Alangiaceae. It is found mostly in wild form and much distributed in forest and roadside areas. It is well distributed in Africa, India, Thailand, Indonesia, Philippines and China. In India, it is found throughout the forests of Uttar Pradesh (Mailani forest in Lakhimpur Kheri district, eastern UP, etc.), Bihar, wildlife sanctuary Rajasthan, Hyderabad forests, Tamil Nadu, Gujarat, West Bengal, Tripura, Odisha, Maharashtra, Kerala, Karnataka and Madhya Pradesh.

It is a small bushy thorny deciduous shrub or tree and

height varies from 5-10 m. The bark of tree is pale brown in colour and surface of the bark is rough. Leaves are arranged simply alternate without stipules and are usually unequal in size. Colour of leaves varies from pale to dark green. Leaves are broad oblong lanceolate, and base is acute or rounded. Flowers are borne axillary, bisexual in nature and stigma conical or head shaped. Flowers are fragrant and white to yellowish white in colour. The inflorescence is axillary cyme and may contain 1 to 17 flowers. The plant bears flowers in February-April and fruits become ripe in May-June. Fruits are berry like and drupe in nature, single seeded. Seeds are albuminous. Immature fruit is green and becomes pinkish red to dark



Ankol Tree



Leaves of Ankol Tree

red at ripening stage. The taste of ripe fruits is sweet with mild aroma. The edible portion of this fruit is fleshy portion called aril.

### Importance and uses

Fruits are often referred to as natural functional products because of consumption of its small fruits. This fruit is widely consumed by Kanis (an indigenous tribal community) residing by Southern Western Ghats.

**Nutritional value:** Fruits are excellent source of macro and micronutrients, and particularly contain carbohydrates, vitamins and minerals. Fruits are also rich in sugar and dietary fibres. They have vitamin C (62.46 mg/100 g), E (0.71 mg/100 g). and provitamin A, and contain antioxidants like phenols, flavonoids and anthocyanin. Fruits contain antiaging compounds. They have high value of moisture (83.9 g/100 g), carbohydrates (11.67 g/100 g) which is higher than strawberry, protein 2.07 g, fats 0.12 g, ash 1.61 g/100 g and energy 50 kCal. Fruits have minerals like K (168 mg), Ca (12 mg) and Fe (1.37 mg) per 100 g.

**Medicinal and biological activities:** In India, it is a traditional medicinal plant used in folk medicines. It has a wide spectrum of biological activities like antifungal, antimicrobial, antifertility, anti-inflammatory and antioxidant. Almost all plant parts are beneficial and different parts are used in herbal medicines treating diarrhoea, paralysis, piles, vomiting, leprosy and skin diseases. In India, the twigs of this plant are also used for brushing. The fruit is used for treatment of dental pain. Its leaves are also used for curing rheumatic pain.

The leaves and bark of the tree contains flavonoids and alkaloid, and both are more in leaves than bark. The bark also has tannins and steroids compounds. In India, *Alangium salvifolium* is used in traditional medicines for properties like laxative, antiepileptic, antiprotozoa and anticancer. It has been also reported for treatment of skin diseases and leprosy. The stem and bark of this fruit are used as an antifungal and antibacterial activity. The fruits and roots are used in *Ayurveda* for treatment of burning sensation and rheumatism. The bark of root is externally applied on wound for antidote against snake, rat, rabbit and dog bites. In china leaves of this fruit tree are used for the treatment of asthma.

*Alangium salvifolium* contains an alkaloid Alangine that acts on the parasympathetic nervous system. The leaves of *Alangium salvifolium* showed antimicrobial activity and it can be attributed to the presence of compounds like flavonoids, terpenoid, and tannins. The leaves also showed antioxidant activity. Its leaves have larvicidal property against the larvae of *Artemia salina*. The leaves of *Alangium salvifolium* also showed pesticidal property against the

storage pests like *Sitophilus oryzae*. Hexane extracts of its leaves showed maximum zone of inhibition of bacteria growth against the bacteria *Listeria monocytogenes* and *Pseudomonas aeruginosa*.

**Antimicrobial activity:** The stem bark of *Alangium salvifolium* has a great significant value of antimicrobial activity against the selected strain of fungi, yeast and bacteria. Methanol extracts of flowers of *Alangium salvifolium* have great spectrum value of antibacterial activity against the both Gram positive and Gram negative bacteria. The ethanol extracts of its root showed maximum antibacterial activity against *E. coli*, *Pseudomonas aeruginosa*, etc.

**Antioxidant activity:** The extracts of *Alangium salvifolium* contain high level of compounds like phenolic and flavonoids content that's why it has contributed directly to the antioxidant activity.

**Antidiabetic activity:** It is very beneficial for diabetic patient. Ethanolic extracts of leaves and bark of *Alangium salvifolium* reduced the blood glucose level to near normal. Ethanolic extracts of leaves of *Alangium salvifolium* have maximum antidiabetic activity in comparison to bark extracts.

**Antifertility activity:** Methanolic extracts of *Alangium salvifolium* showed androgenic and anti-androgenic activity due to presence of the total alkaloid fractions. The total alkaloid fraction produced abortifacient and less anti-implantation activity.

**Antitoxic activity:** Various plant parts of *Alangium salvifolium* fruit tree like bark, root, flower bud, flowers, seed, etc. are having potential for anti-poisonous effects. Its plant parts also externally applied and internally applied used for treatment of various types of poisoning especially like snake bite, spider bite, dog bite and teeth poisoning. Its plant parts also used as antitoxic either single or with combination of others plant parts which have similar properties. Due to pungent and astringent in nature it is used as an anti-poisoning drug.

The fruits of *Alangium salvifolium* are rich in carbohydrates, vitamins and minerals. *Alangium salvifolium* is commonly available in forest area. It is used to cure and prevent a lot of diseases like jaundice, diabetes, asthma, scabies and hepatitis. Its leaves can be used as a potential agent against diabetic and bacteria. The leaves also have significant pesticidal properties against the storage pests like *Sitophilus oryzae*, and used as larvicide.

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**Flowers always make people better, happier, and more helpful;  
they are sunshine, food and medicine for the soul.**

**– Luther Burbank**