Studies on Alangium salviifolium (L.f.) Wang from Orissa

Abstract

Alangium salviifolium (L.f.) Wang, belonging to family Alangiaceae is a small tree, bearing fragrant flowers. It is represented by only one species in the state of Orissa. It is common medicinal plant found throughout greater part of India. Different parts of the plant like stem bark, leaf and fruit are used as medicine among different ethnic communities of Orissa. New and less known folk medicinal uses of this species gathered from traditional healers and folk practitioners like Kondh, Saora, Bhumij etc. inhabiting different geographical regions of Orissa have been reported in this communication. Besides, plant species is also recorded as ‘Ankol’ in Unani and Ayurvedic systems of medicine and prescribed in the treatment of bleeding piles and bite of wild animals. It is suggested that scientific validation studies may be taken up on some of the reported claims before recommending this species as recipe by the practitioners of organized traditional systems of medicine.

Keywords: Alangium salviifolium (L.f.) Wang, Akol, Ethnomedicine, Traditional healers, Orissa

Introduction

Genus Alangium belonging to a flowering plant family Alangiaceae is a small genus comprising of 17 species of small trees, shrubs and lianas. It is native to Western Africa, Madagascar, Southern and Eastern Asia (India, China, Malaysia, Indonesia and Philippines), tropical Australia, Western Pacific ocean islands and New Caledonia (http://www.herbsnspicesinfo.com). It is represented by only one species in the state of Orissa i.e. Alangium salviifolium (L.f.) Wang.

Botany

Botanical name: Alangium salviifolium (L.f.) Wang.

Syn. Grewia salviifolium L.f.; A. lamarckii Thw

English name: Sage-leaf Alangium

Hindi: Ankol, Vang, Dhela, Akola, Aankol

Local name: Ankol, Ankulo, Dholang

Sanskrit name: Ankol, ankula, Ankolah

Unani: Ankol, Akol

Short description

It is a small bushy and thorny tree with ash-coloured rough bark, often warty. Leaves alternate, exstipulate, oblong-lanceolate, acute, thinly coriaceous and shortly
petioled. Flowers white, 1-2.5 cm, in axillary fascicles or on old wood. Fruits are sub-globose or ovoid, 1.3-1.6 cm across, glabrous, black, succulent with bony endocarp (Haines, 1921-25).

Flowering: February – March; Fruiting: May – July

Distribution

The tree is commonly found in waste grounds, waysides near villages and mixed scrub forests in Orissa and generally distributed throughout India (Saxena & Brahman, 1995). It has been collected from different geographical regions of Orissa such as Coastal districts namely Bhadrak, Balasore, Kendrapara and Jagatsinghpur; Central region like Dhenkanal, Balangir, Kandhamal and Eastern Ghats region of Koraput, Rayagada etc. Different parts of the plant are used to treat various diseases in Traditional systems of medicine (Kirtikar & Basu, 1935; Najmulghani, 1914; Ayur http://www.ayurvedaconsultants.com).

Materials and Methods

Traditional health knowledge and folk medicinal uses recorded from different tribal/rural people of Orissa for *Alangium salviifolium* (L.f.) Wang; form the subject matter of this paper. It is based on the compilation of ethno-medicinal folk uses collected as a result of extensive ethno-botanical field trips (each of 25-30 days duration) undertaken by Survey of Medicinal Plants Unit of Regional Research Institute of Unani Medicine (RRIUM), Bhadrak during 1982-2005 in different tribal pockets of Orissa. Basic methodology of plant collection, identification and documentation of traditional knowledge (folk medicinal uses) followed is same as published earlier (Girach 1992). Disease-wise folk medicinal uses recorded are enumerated alphabetically as under: Different disease/conditions, followed by detailed folk medicinal claims. Locality (district), Informant, and voucher specimen numbers are given in brackets at the end of folk claim. Voucher specimens are deposited in the Unit herbarium of RRIUM, Bhadrak. Other folk uses available in published literature from Orissa are added at appropriate places.

Results

Ethnomedicinal uses of *Alangium salviifolium* (L.f.) Wang

*Boils/Wounds*: (a) Warm leaf paste is applied to boils and wound to hasten healing and for suppuration. (Bhadrak; Munda, 4277); (b) Leaf paste mixed with cow’s butter (2:1) is applied locally for ringworm-scars (Satapathy & Brahman, 1996; Saxena and Dutta, 1975).
Alangium salviifolium (L.f.) Wang. (a fruiting twig)

**Constipation:** Stem bark decoction is taken (one teaspoon, two times daily, for three days) to get relief from constipation (Bargarh, Saora, 2002).

**Dental care:** Tender twigs are used for brushing teeth and strengthening gums (Dhenkanal, Kondh, 2484). The use of twigs for brushing teeth is very popular in other districts of Orissa as well. Namely Balasore (Murmu, 2978), Jajpur (Mrs. Benga, 3491), Sundargarh (Routia, 3667), Bolangir (Saora, 4080), Bhadrak (Sahu, 4773), Keonjhar (Bhumij, 5311) and Kendrapara (Mohapatra, 6387).

**Diarrhoea:** Powdered stem bark is given for the treatment of vomiting and diarrhoea. (Ganjam, Saora, 8277).

**Excess bile secretion:** A handful of roots are boiled in sufficient water, cooled and strained. One cup filtrate is taken every morning on empty stomach to treat excess secretion of bile and headache (Bolangir; Saora, 4080).

**Fever:** (a) A handful of leaves are boiled in a bucketful of water, strained. The patient suffering from high fever is advised to bath with this water to alleviate fever (Balasore; Naik, 2695); (b) A handful of leaves are boiled in 1000 ml water, till it remains 250 ml. It is cooled and strained. Filtrate is taken (20 ml, two times daily) to alleviate fever (Jagatsinghpur; Das, 7123); (c) A handful of leaves are boiled in water, strained, cooled, patient is advised to take bath with this water to alleviate fever (Ganjam; Saora, 8277).

**Hydrocele:** A handful of root bark is powdered with 21 black peppers. The powdered drug is taken (5 gm, once at bed time, for 21 days) to treat hydrocele and reduce scrotal swelling (Keonjhar (Bhumij, 5311).
Intestinal worms (worm infestation): Powdered stem bark (5 gm, once at bed time) is taken with honey as an anthelmintic drug to kill and expel intestinal worms. The same is given (2-5ml, mixed with honey) to children for the purpose (Kalahandi, Saora, 1038). Fruit is useful as anthelmintic drug (Ganjam, Saora, 8277).

Joints pain: A handful of leaves are boiled in Jado (Ricinus communis L.) oil, cooled and strained. Resultant medicated oil is applied locally on affected joints to relieve rheumatic joints pain (Dhenkanal, Kondh, 2484).

Paralysis: A handful of roots with Bichati (Tragia involucrate L.) fruits in equal quantity are pounded together and boiled in sufficient mustard oil till remains ½. It is cooled and filtered. Resultant medicated oil is applied locally to get relief from paralysis. The treatment is repeated every alternate day for 2 months (Phulbani, Kondh, 0495).

Poisoning: (a) Powdered root (5–10 g) is taken in desired quantity as an antidote to poison (Odogaon; Kondh, 7723); (b) Chemical constituents, particularly alkaloid alangine may cause irritation in the stomach, which in turn induce vomiting and help in removing the poison.

Rabies: Root bark with Bidonda (Saccharum spontaneum L.) seeds are powdered together in equal quantity and taken (5-10 gm, three times daily) to treat bite of mad dog (Kalahandi, Saora, 1038).

Skin diseases: A handful of roots with Daskaranta (Barleria prionitis Linn.), Nimbo (Azadirachta indica Juss.), Bhuinimbo (Andrographis paniculata Nees) and Mahanimbo (Ailanthes excels Roxb.) in 1:1:1:1:1 ratio are boiled in sufficient water, cooled and strained. It is taken (one teaspoon, two times daily) as blood purifier in skin diseases. (Nayagarh, Kondh, 7723).

Snake-bite: (a) Root powdered with 21 black peppers is taken orally as an antidote to poisonous bite of snake. The drug induces vomiting and diarrhoea and stated to provide relief. (Bolangir; Saora, 4080); (b) Roots made into paste is applied topically and taken orally as an antidote to snake bite (Nayagarh; Khan, 7723); (c) Powdered root is taken (3-5 gm, once daily) as an antidote to poison. The drug induces vomiting and thereby helping in removing poison from the body. (Rayagada; Kondh, 8084).

Stomach ache: (a) Stem bark decoction is taken (one teaspoon, two times daily) to get relief from stomach pain. (Bhadrap; Das, 0991); (b) Powdered root (5-10 gm, two times daily) is taken with sufficient water to get relief from stomach ache (Keonjhar; Bhumij, 5311); (c) Stem bark decoction is given in desired quantity to treat stomachache (Ganjam; Saora, 8277).

Swelling: A handful of stem bark made into paste with water is applied locally to subside swelling and relieve pain (Jagatsinghpur; Dash, 7123).
A comparison of data gathered in present work with published medico-botanical uses of *A. salviifolium* show that the application/uses of the species for treatment of eye and stomach complaints, rheumatism, skin disease, dog – bites and fever have already been documented from various parts of the country (Jain, 1999).

(i) *Alangium salviifolium* (Ankol) in Unani System of Medicine

Part used: Root bark, fruit, oil of seeds

Actions: Antipyretic, anti-inflammatory, tonic for heart and brain, carminative, emetic, expectorant, laxative, vermicidal.

Medicinal uses: Useful in reducing colic pain, hemorrhoids, poisonous bites of wild animals, epileptic conditions, leprotic wounds and other skin conditions.

Used in stomachache, swellings, intestinal worms, epilepsy, syphilis, piles; seed oil is used in gout, sciatica and joints pain (Najmulghani 1914, Anonymous 2008).

(ii) *Alangium salviifolium* (Ankol) in Ayurvedic System of Medicine

Part used: Root bark, root, juice, seed, fruit, oil

Actions: acrid, pungent, heating, anthelmintic, alterative, antispasmodic, hypotensive, antiinflammatory, hypoglycaemic, antipyretic, antiprotozoal, analgesic, antimicrobial, antitubercular, antitumour, emetic, aphrodisiac, cooling, purgative, expectorant, carminative, styptic and wound healer

Medicinal uses: relieves pain, blood disorders, hydrophobic, rat bite, diarrhea and dysentery, skin disorders, fever, joint disorders, rheumatism, haemorrhoids etc. Externally it is used for the treatment of bites of rabbits, rats, snake and dogs. It causes vomiting and motions and through this, venom drains out of the body (http:openmed.nic.in).

Charaka prescribed the fruits extracted in clarified butter in chronic poisoning and in epilepsy as a tonic and sedative. Sushruta used the herb externally as a cleansing and antiseptic agent.

Powdered seeds and fruits applied externally in sinusitis. Flowers prescribed internally in migraine, internal abscesses, calculi, urinary diseases and for reducing obesity.

In the from of a medicated salt, the drug was given by Sushruta in abdominal swellings, dyspepsia, intestinal parasites, piles and in rheumatism.

According to Sushruta, the seeds, cooked into an edible preparation, relieve bronchial asthma. The root bark, taken with buttermilk, is an efficacious remedy for diarrhoea. Chakradatta prescribed 5 g root bark, pounded with rice-water, for treating diarrhoea and dysentery; also with *Berberis aristata* (Daaruharidraa) and *Cissampelos pareia* (Paathaa) for balancing the purgative action of Ankola (Khare 2004).
(iii) *Alangium salviifolium* (Ankol) in Indian Folk System of Medicine (Jain, 1991)

*Stem Bark:* of the stem has been reported in the treatment of blood pressure from Rajasthan and stem has been employed as abortifacient and to treat menstrual complaints in Santal Paragana of Bihar.

*Fruit:* It has been reported in the treatment of eye and stomach complaints from different parts of Bihar, Madhya Pradesh and Rajasthan

*Leaf:* It has been reported in the treatment of reviving sense of taste, rheumatism, skin diseases and as an antidote to poison from different parts of Bihar and East Godavari district of Andhra Pradesh.

*Stem:* It has been reported in the treatment of anasarca, asthma, bronchitis, cholera, colic, dropsy, fistula, phthisis, snake bite and spleen complaints in Bodding’s work on Santal Paragana.

*Root:* The root has been reported to be used in the treatment of fever, poisonous bites of dogs, Jackals etc and skin diseases from Andhra Pradesh, Bihar, Gujarat and Maharashtra.

**Discussion**

Ethnomedicinal uses of *Alangium salviifolium* (L.f.) Wang recorded from Orissa in sixteen disease conditions from tribal/rural people like Kondh, Saora, Bhumij and other knowledgeable persons have been presented in this communication.

On comparing the data with Indian Folk medicine and Ethnobotany (Jain, 1991) it reveals that some of the uses are similar to the uses recorded from Orissa such as eye and stomach complaints from different parts of Bihar, Madhya Pradesh and Rajasthan. Similarly use in rheumatism, skin diseases and as an antidote to poison are reported from different parts of Bihar and East Godavari district of Andhra Pradesh. Use of snake bite has been reported in Bodding’s work on Santal Paragana. Use of plant in fever, poisonous bites of dogs and skin diseases are reported from Andhra Pradesh, Bihar, Gujarat and Maharashtra.

Similar uses as mentioned above by different ethnic communities in different states of India confirms wider acceptability of the use of this species as therapeutic agent and supports the view that local traditional healers have rich knowledge on medicinal plants available around them throughout India.

On comparing the data with published literature in Alternative Systems of Medicine (Table-1), clearly reveals that plant is used in the treatment of fever, haemorrhoids, poisonous bites of wild animals (including snake and dog bite), Skin diseases, Joints pain, swellings and to expel intestinal worms.
### Table-1. *Alangium salviifolium* in Traditional and Folk systems of Medicine

<table>
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<tr>
<th>UNANI</th>
<th>AYURVEDA</th>
<th>FOLK MEDICINE (Orissa)</th>
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<tr>
<td>Uses: Useful in reducing colic pain, fever, hemorrhoids, poisonous bites of wild animals, epileptic conditions, leprotic wounds and other skin conditions. Used in stomachache, swellings, intestinal worms, syphilis; seed oil is used in gout, sciatica and joints pain</td>
<td>Useful in skin disorders, fever, joint disorders, rheumatism, haemorrhoids, chronic poisoning, epilepsy, migraine, urinary diseases, obesity, dyspepsia, bronchial asthma and diarrhoea etc. Externally it is used for the treatment of bites rats.</td>
<td>Constipation, Dental care, Diarrhoea, Excess bile secretion, Fever, Hydrocele, Intestinal worms, Joints pain, Paralysis, poisoning, Rabies, Skin diseases, Snake bite, Stomachache, Swelling</td>
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The activities like antipyretic, anthelmintic and anti-inflammatory reported in Unani and Ayurvedic literature (Table-1) confirms scientific ground behind its use in diseases like fever, to expel intestinal worms, rheumatism, joints pain, swelling etc.

Stem sticks are popularly used for cleansing teeth and removing bad breath in many tribal areas of Orissa. According to informants from different parts of Orissa, stem sticks have soft texture, bitter in taste and easily available without any cost. Vohora (1982) suggested that Potassium and Chloride found present in the stem may help in usual wear and tear of teeth and anti-inflammatory activity exhibited (Thenmozhi et al; 1989) may contribute in reducing swelling of inflamed gums.
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References
