

Ethnobotanical studies of *Erythrina indica* Plants

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Abstract

Medicinal plants are nature's gift to human society to make disease free healthy life. More than thousand medicinal plants are recognized in our country. The present review is therefore an effort to give a detail survey of the literature on its phytopharmacological properties of *Erythrina indica* belonging to the family Fabaceae, which is a shrub with prickly stems; it is a wild growing forest plant in India. Majorly popular system of medicine like Ayurveda, Siddha, Unani and homeopathy. Various plant parts such as bark, root, fruits and leaves are used in treatment of fever, astringent, febrifuge, skin diseases etc.

Key Words Ayurveda, Homeopathy, Siddha, Unani.

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Introduction

Erythrina indica is a middle-sized quick growing tree found in Bengal and many parts of India especially in southern India. It belongs to the family Papilionaceae, commonly known as Mandara (in Hindi) and Indian coral tree (in English). It grows up to 18 m in height, the leaves are trifoliolate, flowers are borne in dense racemes, coral red and used traditionally for the treatment of liver trouble, joint pain, dysentery, convulsion, as a diuretic, laxative and an anthelmintic. A perusal of literature revealed that its diuretic effects remain to be studied. Herein, we report the diuretic effect of the ethanol, chloroform, and ethyl acetate extract of leaves of *Erythrina indica* in albino rats (M. Jesupillai *et al*; 2008).

Erythrina variegata (Synonym: *Erythrina indica* Lamk.; Bengali name- Mandar) is a medium sized deciduous small tree belonging to the family Papilionaceae. The plant grows all over the Bangladesh (M. Jesupillai *et al*; 2008). The barks are used traditionally as astringent, febrifuge and in leprosy and fever. Leaves are anthelmintic, laxative and diuretic. Paste of leaves is applied externally to cure inflammations and to relieve pain in the joints. Juice is also used to relieve earache and toothache (M. Jesupillai *et al*; 2008). Previous phytochemical investigation showed that the stem bark contains three new isoflavones and a new isoflavanone (Runia Haque *et al*; 2006). Seed contains a fixed oil, fatty acids and lectins. Though the plant is traditionally used in

many parts of Bangladesh, no scientific report is available to validate the folkloric use. As a part of our continuing studies on the medicinal plants of Bangladesh, the study was undertaken to evaluate the analgesic activity using acetic acid induced writhing and radiant heat tail-flick test in mice models.

The leaf of the plant *E. variegata* was collected from Dhaka, Bangladesh in August 2004, and was identified by the experts at the Department of Botany, University of Dhaka. Collected plant parts, after cutting into small pieces, were dried and pulverized into a coarse powder, and stored into an air-tight container (Runia Haque *et al*; 2006).

The pulverized coarse powder (250 g) was extracted with methanol (750 ml × 3) by cold extraction process. The extract obtained was filtered off and evaporated to dryness by rotary evaporator to get the methanolic extract (4.44 g) of *E. variegata* (EVM). Finally the extract was defatted by refrigeration at 4° C temperature.

Swiss albino mice (20-25 g) of either sex were obtained from the animal house of International Center for Diarrhoeal Disease and Research, Bangladesh (ICDDR, B). The animals were given standard feed developed by ICDDR,B and water *ad libitum* and kept in the laboratory environment (12 h dark/12 h light cycle) for seven days for acclimatization. Animals were

kept under fasting for overnight and weighed before the experiment.

For the preparation of test materials 125 and 62.5 mg of the extracts were separately triturated by the addition of small amount of Tween-80. After proper mixing, saline water was slowly added and the final volume of the suspension of each extract was adjusted to 2.5 ml. For the preparation of standard, 12.5 mg of aminopyrine was taken and suspension of 2.5 ml was made with Tween-80 and saline water. Each 10 gm of experimental animal received 0.1 ml of the crude extract and the standard drug (Runia Haque *et al*; 2006).

Scientific name: *Erythrina variegata* var. *orientalis*

Pronunciation: air-rith-RYE-nuh vair-ee-eh-GAY-tuh variety or-ee-en-TAY-liss

Common name(s): Coral Tree

Family: *Leguminosae*

USDA hardiness zones: 10 through 11

Origin: not native to North America

Uses: shade tree; specimen; no proven urban tolerance

Availability: somewhat available, may have to go out of the region to find the tree

DESCRIPTION

Height: 50 to 60 feet

Spread: 40 to 50 feet

Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms

Crown shape: round; vase shape

Crown density: dense

Growth rate: fast

Texture: coarse

Flowers

Inflorescence of many-flowered fascicles occurs in terminal or axillary racemes up to 20 cm (8 in) or more long. Calyx is top-shaped, deeply split along one side, 1–1.8 cm (0.4–0.7 in) long, on a pedicel 2–5 mm (0.1–0.2 in) long. Corolla is papilionaceous; standard is short-clawed, ovate to subelliptic, 3–4 cm (1.2–1.6 in) long, red-orange with longitudinal white lines; wings are about half as long as the standard, greenish to pale red; keel is as long as the wings, greenish to pale red. Ovary is superior, stamens 10, diadelphous, with 9 fused together at the base, enclosed within the keel. Flowering is reported from July to November in the Southern Hemisphere and 6 months later in the Northern Hemisphere (W. Arthur Whistler and Craig R. Elevitch, 2006).

Leaves

Leaves are trifoliolate, alternate; rachis is mostly 10–20 cm (4–8 in) long; blades are ovate to rhomboid, 8–18 cm (3.2–7.2 in) long; lateral ones are smaller than the terminal one, petiolules 6–13 mm long, with vegetative parts

finely pubescent. They are deciduous just before and during the flowering season, except for ‘Tropic Coral’, which has been reported by some authors to not drop its leaves, while other sources have noted its deciduous habit. *E. variegata* retains its leaves better than other *Erythrina* species in Hawai‘i. Low temperatures, powdery mildew, and/or drought combined with very windy conditions will accelerate leaf drop and retard the development of new leaves (W. Arthur Whistler and Craig R. Elevitch, 2006).

Fruit

Fruit a compressed, narrowly oblong pod 10–14 cm (4–5.6 in) long, sterile in the basal portion, and not constricted between the 5–10 dark brown seeds. The fruits are ripe from October to November in the Southern Hemisphere and March to April in the Northern Hemisphere, but they often remain on the tree for several months longer (W. Arthur Whistler and Craig R. Elevitch, 2006).

Seeds

Seeds are kidney-shaped, dark purple to red, and 1–1.5 cm (0.4–0.6 in) in length. These simply fall to the ground and may be washed away (they have been seawater-dispersed over their native range). There are 1450–5000 seeds/kg (660–2270 seeds/lb) (W. Arthur Whistler and Craig R. Elevitch, 2006).

References

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