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Plant profile, phytochemistry and pharmacology of *Cordia dichotoma* (Indian cherry): A review

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PEER REVIEW

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Comments

Authors did detailed collection regarding the topic including graphics, pharmacological uses of several parts of the plant and phytochemicals potentially evaluated for the management of range of disease.

Details on Page 1015

ABSTRACT

More than half of the world's population relies on the traditional medicine and major role of the traditional medicine including the use of plant extract and their active constituents. Among them, *Cordia dichotoma* Forst., a small to moderate size plant of family Boraginaceae, commonly called bhokar, lasura, gonda, Indian cherry and shlesmataka. Plant parts such as leaves, fruit, bark and seed have been reported for possessing antidiabetic, antiulcer, anti-inflammatory, immune-modulator and analgesic activity. Screening of fruit, leaves and seed shows the presence of pyrrolizidine alkaloids, coumarins, flavonoids, saponins, terpenes and sterols. Present review focuses on details of geographical distribution, physicochemical parameters, phytoconstituents and pharmacological properties of *Cordia dichotoma* reported so far.

KEYWORDS

Cordia dichotoma, Cytotoxic, β -sitosterol, Indian cherry, Diabetes, Pharmacology

1. Introduction

Plant derived medicines are considered to be first line of defense in maintaining health and combating diseases and even today plant source is principal source of new drug of therapeutic property^[1]. Approximately 72000 plant species were estimated for having medicinal properties of which, India recognizes more than 3000 plant species having medicinal values^[2]. Ayurveda is "science of life", pointed out concept of positive health means metabolically well-balanced human beings. Foremost indigenous systems listed medicinal plants such as Siddha (600), Ayurveda (700) and Amchi (600), Unani (700), allopathy which 30 plant species for ailments^[1]. *Cordia dichotoma* (*C. dichotoma*) is one of the traditional medicinally important deciduous plants available all over India. The fruit has been reported to be rich in polysaccharide. Ripe fruit of *C. dichotoma* produces a jelly-like, sticky mass. Unani system of drug medicine uses

plant as antibacterial, antiviral and antitussive. Joshandah, polyherbal formulations, are extensively used by the masses in India for the treatment of common cold, catarrh, cough, respiratory distress, fevers of which *C. dichotoma* is chief ingredient^[3,4]. From the ancient time, leaves and stem bark are used in the treatment of dyspepsia, fever, diarrhea, leprosy, gonorrhoea and burning sensation. Leaf of plant traditionally shows the therapeutic uses and actions such as anthelmintic, astringent, diuretic, demulcent, purgative, expectorant, tonic, ulcer and cough^[5–9].

1.1. Geographical distribution

C. dichotoma (Table 1) is commonly present in tropical and subtropical regions. It grows in the sub-Himalayan tract and outer ranges, ascending up to about 1500 m elevation. It is found in divers of forests ranging from the dry deciduous forests of Rajasthan to the moist deciduous forests of

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Table 1Scientific classification, vernacular names and local names of the *C. dichotoma*[8,10,11].

Scientific classification	Vernacular name	Local names
Kingdom: Plantae	Malaysia: Sekendai, Sekendal, Petekkat	Bangali: Buhal, Bahubara
Division: Magnoliophyta	English: Soap berry, Sebestan plum, Fragrant manjack	English: Sebesten, Clammy Cherry, Indian cherry
Class: Dicotyledons	India: Leshora, Gonda, Lasora	Gujarati: Vadgundo, Gunda
Subclass: Astaridae	Javanese: Kendal	Hindi: Lasura, Bhokar, Borla
Order: Lamiales	Sumatran: Nunang	Javanese: Kendal
Family: Boraginaceae	Thailand: Paw man	Lao: Man, Sino-Tibetan, Man khok
Genus: Cordia		Malay: Petekkat, Sekendai
Fragrant: Manjack		Tamil: Kalvirusu, Vidi, Naruli
Species: <i>C. dichotoma</i> Forst.		Nepali: Bohori, Kalobohori
		Thai: Mandong, Manma, Phakmong
		Sanskrit: Shelu, Bahuvarka, Shleshmatak

Western Ghats in India and tidal forests in Myanmar. In Maharashtra, it grows in moist monsoon forest^[10]. It does not grow gregariously, but is found growing singly in moist shady ravines and valleys^[11]. The species is widespread in the Philippines and found in thickets and secondary forests at low and medium altitudes. It also distributed Southern China and Formosa and throughout other like Peninsular Malaysia to tropical Australia and Polynesia. The species is propagated by seeds^[12].

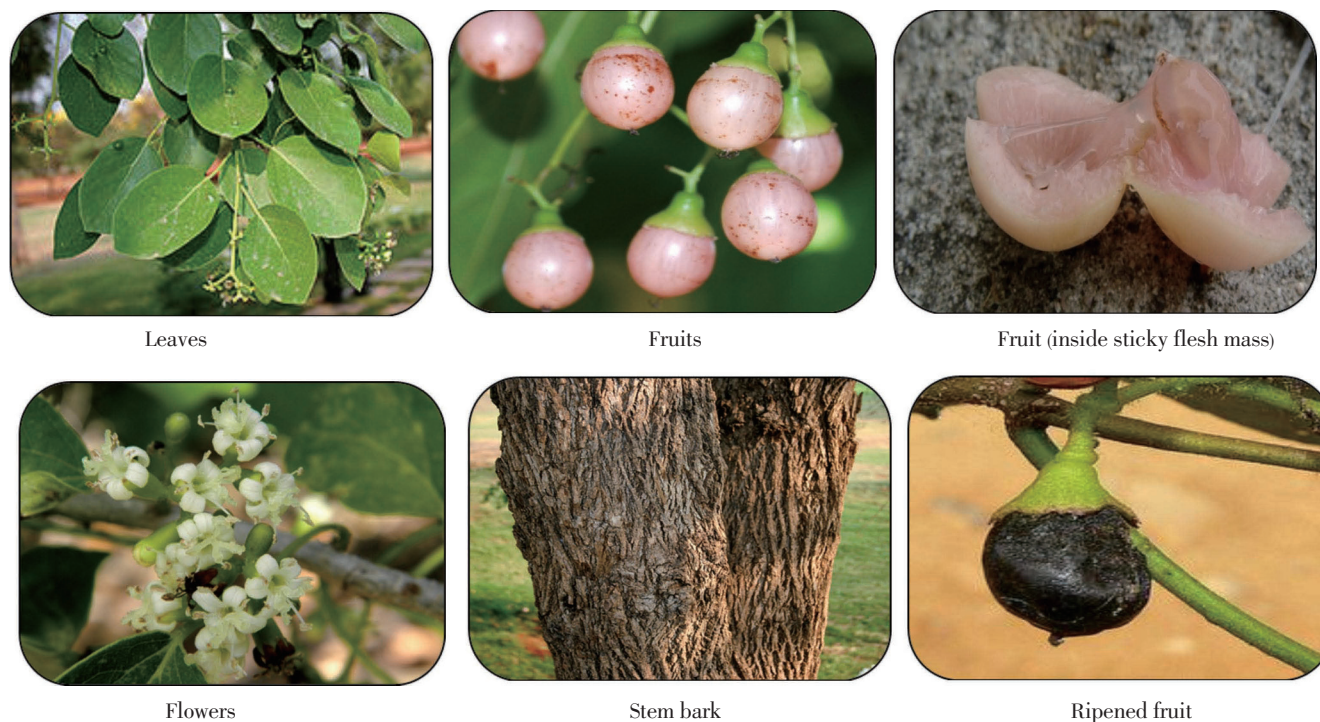
1.2. Morphology of *C. dichotoma*

Cordia dichotoma is small to medium-size deciduous tree with a short crooked trunk, short bole and spreading crown (Figure 1). Leaves are simple, entire and slightly dentate, elliptical-lanceolate to broad ovate with a round and cordate base. The stem bark is grayish brown smooth or longitudinally wrinkled^[10]. Flowers are short stalked, bisexual and white to pinkish in colour and appear in loose corymbose cymes. Fruits are edible with sticky flesh mass. It

is a yellow or pinkish-yellow shining globose or ovoid drupe seated in a saucer-like enlarged calyx. It turns black on ripening and the pulp gets viscid^[11].

1.3. Nutritional information

The whole plant of *C. dichotoma* is edible and is used as food. Immature fruits are pickled and are also used as vegetable^[10]. Mixture of flower and curd applied two times in a day used to protect body against heavy sun heat waves^[13]. The rural people of coastal areas of Orissa eat the ripe fruits raw^[14]. The seed kernels of *C. dichotoma* contain high quantity of fatty oils and proteins which has potential as cattle feed^[15]. The polysaccharide gum (97%) obtained from the plant used for various pharmaceutical purposes. Chromium present in the fruit has therapeutic value in diabetes. A fruit also contains some anti-nutritional factors such as phytic acid (355 mg), phytate phosphorus (100 mg) and oxalic acid (250 mg) per 100 g (Table 2)^[16]. New natural cellulose fabrics were identified from the branches of the *C. dichotoma*^[17].

**Figure 1.** Parts of *C. dichotoma* plant.

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