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Phytopharmacological review on *Corchorus trilocularis* linn

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Abstract
Herbs have been one of the important sources of medicines since the beginning of human civilization. Human beings have used plants for medicinal purposes for centuries. Traditional forms of medicine have existed and still exist in many countries of the world including countries in the Indian sub-continent like India, Pakistan and Bangladesh There is a growing demand for plant based medicines, health products, pharmaceuticals, food supplements, cosmetics etc. A review of chemical constituents present in various parts of *Corchorus trilocularis Linn* and their pharmacological actions is given in the present article. *Corchorus trilocularis Linn*, is a commonly used shrub in Ayurvedic medicine. This review article is presented to comply all the updated information on its phytochemical and pharmacological activities, which were performed by widely different methods. In Ayurveda Leaves are used in the treatments to reduce swellings, seeds are used in gripe and nausea.

Keywords: *Corchorus trilocularis*, ayurveda, gripe, nausea, seeds, food supplements

Introduction
Herbal medicines represents one of the most important fields of traditional medicine all over the world. To promote the use of herbal medicine & to determine their potential as a source for new drugs, it is essential to study medicinal plants which have folklore reputation in a more intensified way [1]. Human beings have used plants for medicinal purposes for centuries. Traditional forms of medicine have existed and still exist in many countries of the world including countries in the Indian sub-continent like India, Pakistan and Bangladesh [2]. Differentt ancient literature indicate that therapeutic use of plants is as old as 4000–5000 B.C. [3] Today the large number of drugs derived from plants, like Sennosoides from *Cassia angustifolia*, *Vincristine*, *Vinblastine from* Vincarosea, Quinine From Cinchona, Atropine from *Atropa belladonna*, Reserpine from *Rauwolfia serpentine* etc. The medicinal plants are rich in secondary metabolites (which are potential sources of drugs) and essential oils of therapeutic importance. The important advantages claimed for therapeutic uses of medicinal plants in various ailments are their safety besides being economical, effective and their easy availability [4, 5]. Because of these advantages the medicinal plants have been widely used by the traditional medical practitioners in their day to day practice. The future of higher plants as sources of medicinal agents for use in investigation, prevention, and treatment of diseases is also very promising. Natural products have provided us some of the important life-saving drugs used in the armamentarium of modern medicine. However, among the estimated 250,000-400,000 plant species, only 6% have been studied for biological activity, and 15% have been investigated phyto chemically. This shows a need for planned activity guided phyto pharmacological evaluation of herbal drugs [6]. This article intends to provide a detailed review on *Corchorus trilocularis* Linn. It is distributed throughout the tropical and subtropical regions of the world. Although 215 species, subspecies, varieties, and forms have been reported under the genus Corchorus (Global Biodiversity Information Facility 2008). They also studied that the classification of the various sprecies of the genus Corchorus.

Plant Profile

Fig 1: Image of *Corchorus trilocularis* Linn. (Tiliaceae)

It is an Annual, erect or suberect herbs of 30-150 cm height and heavily branched. Wild Jute is a branched annual herb, up to 1 m tall, usually erect, sometimes found prostrate due to browsing by cattle.

Botanical Name: *Corchorus trilocularis* L.

Synonyms: CorchorustriflorusBojer

Common Name: Wild Jute, Kadu Choonch, Kadavi Choonch, Lambi Choonch

Plant Family: Tiliaceae

Plant Form: Herb

Occurrence (Special Areas): Ayurvedic Udyan

Habit: An annual herb with more or less hairy stems and branches.

Leaves: Elliptic or oblong-lanceolate, acute or obtuse, serrate (the lower serratures often destitute of filiform appendages), somewhat rough below, base rounded or cuneate; petiolate, petioles pilose, stipules lanceolate-subulate.

Inflorescence: Short cymes.

Flower: Buds ovoid or obovoidapiculate; bracts lanceolate-subulate; peduncles very short, leaf opposed, hairy; pedicels very short, pubescent.
Sepals long, linear-oblong, acuminate.
Petals oblong, slightly longer than the sepals.

Fruits: Capsules with a short erect beak, hairy when young with stiff stellate hairs, scabrous when old, 3-4 angled, 3-4 valved; valves with transverse partitions between the seeds.

Seeds: trigonous, black. The species name trilocularis comes from the three-chambered ovary
Flowering and Fruiting

Time: September [7]

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The plant has been reported to possess anti-inflammatory [8], demulcent [9]. Seeds are used in fever and for cleaning bowls. In traditional folklore medicine in India, *C. trilocularis* is also used for syphilis. [10] Sarija *et al*. reported *in-vitro* antioxidant studies and phytochemical screening on the seeds of *Corchorus trilocularis*. The free radical scavenging activity was also determined using the DPPH assay method and the EC50 value was found to be 8.25mg. [11] Pharmacological evidence of *Corchorus trilocularis* in alloxan induced diabetic rats was reported by Chaudhari *et al*. The ethanolic extract of *Corchorus trilocularis* (400 mg/kg) showed significant anti-hyperglyceamic activity. It can be concluded that ethanolic extract of *C. trilocularis*has anti-hyperglycaemic activity. [12] One research done by Sinha *et al*. reported that thewhole plant contains Cardenoide trilocilarin and corchoroside B. Seeds of the *C. trilocularis* shown activity on fever, remove obstruction in abdominal viscera, specific in rheumatism. Whole plant Mucilage is demulcent (ayurvedic formulations); astringent to the bowls; removes tumors, ascites, piles, cure dysentery, anthelmintic. [13] Ahirrao*et al*. reported analgesic and antipyretic activity of *Corchorus trilocularis* Linn. Seed oil. The result indicates that petroleum ether extract of seeds oil of *Corchorus trilocularis* Linn. Is significantly analgesic ($p<0.01$) and antipyretic activity ($p<0.01$) as compared to standard drug aspirin and paracetamol ($p<0.01$) respectively and untreated control group [14]. Khan *et al*., have been isolated Penta cyclic Triterpenoids Betulinic Acid and steroid β-sitosterol-D-glucoside, on chemical examination it was concluded that, lavonoids were present in whole plant extract. cardiac glycosides strophanthidin (1) -3-ß-D-bolvinosido -ß-D-glucosidecorchoroside A, components of glycoside mixture – olitoriside. Triterpenoids such as, Oxocorosin, Urosolic acid and corosolic acid have been isolated from *Corchorus trilocularis* [15]. Khan *et al*. also reported that leaves are tasty and sourly, cooling laxative, stimulant, tonic, and aphrodisiac; destroy "tridosha". The edible leaves of Corchorus species are reported to contain some trace minerals useful to alleviate mineral deficiencies of the human body. The seeds are used to removes tumors, pain, stomach troubles, skin diseases, and scabies. The leaves are reported to prevent cardiovascular disorders. Ahmed *et al.* extracted and isolated the two new tetracyclic triterpenoidtriloculerol A and triloculerol A 3-glucoside and one Pentacyclic Triterpenoid Tirlocularoside A from *Corchorus trilocularis* L. (Tiliaceae). Their structure were elucidated as 3 β, 6α, 16 α, 20(S), 27-pentahydroxy dammar-24(Z)- ene(1), 3β-glucopyranosyloxy 6α, 16α,20(S), 27-tetrahydroxydammar- 24-(Z)-ene (2) and 2α, 3β,19α,30-tetrahydroxyurs-12-en-24,28-dioic acid 28-O-beta-D-glucopyranosyl ester(3) respectively, on the basis of detailed spectroscopic studies [16]. BarkuVya *et al* reported that methanolic extract of *Corchorus olitorius* leaves was subjected to antioxidant activity using 1, 1-diphenyl-2-picryl hydrazyl radical (DPPH) assay and Ferric Reducing Antioxidant power (FRAP) assay. The extract exhibited a high degree of antioxidant activity. From the FRAP assay absorbance increased with increasing concentration of plant extract indicating a strong reduction potential of the plant. Phytochemical screening on both methanol and aqueous extracts revealed the following constituents' common to both solvent extracts except alkaloids which were absent in the methanol extract: Alkaloids, terpenoids, tannins, flavonoids, cardiac glycosides. The plant powder and aqueous extracts were taken through screening for wound healing activity by excision model. Both the powder and the aqueous extract showed significant activity when compared with control and standard. Percentage of wound contraction on 18th day was found to be 100% for the powdered plant ointment, 5% powdered plant ointment and100mg/ml aqueous extract respectively. The results have significantly demonstrated the wound healing activity and the antioxidant activity of the leaves of *Corchorus olitorius* [17].

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