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Review

A Review on Pharmacological Activity and Traditional Medicine of *Commelina benghalensis* Linn.

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	Abstract
Published on: 14 Nov 2024	<p>Now a day's herbal medicines are taking the leading positions in the health care systems. <i>Commelina benghalensis</i> Linn. belongs to Commelinaceae family is an annual herbaceous weed commonly known as Bengal Dayflower. <i>Commelina benghalensis</i> is used in Indian medicine to cure a variety of conditions, including headache, constipation, leprosy, fever, snake bite, jaundice, mouth thrush, insanity, epilepsy, and psychosis sickness, depressive, emollient, demulcent, and anti-inflammatory medication. Overall, many investigations have been done on pharmacological active phytoconstituents of this plant. Still, many Pharmacological activity of this medicinal weed still need to be carrying out. This review article provides brief review & pharmacological activities of <i>Commelina benghalensis</i>.</p>
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<p>Keywords: Traditional medicine, Pharmacological Activities, <i>Commelina benghalensis</i>, Herbal Weed.</p>	

INTRODUCTION

Traditional medicines are essential components in the provision of healthcare services globally (1). The significance of traditional folk medicines is evident in the delivery of health services worldwide. The utilization of plants and plant-based products is indispensable for sustaining life. According to the World Health Organization, a medicinal plant is defined as an herbal plant that contains phytoconstituents possessing therapeutic properties, and is also crucial for the production beneficial pharmaceutical, food preservation, alternative medicine and natural remedies for diseases(1,2). Here, the plant *Commelina benghalensis* from the family Commelinaceae is one of the essential medicinal plants that have been used for different diseases for a long time.(3)

Traditional medicine encompasses the accumulation of knowledge, skills, and practices rooted in the theories, beliefs, and experiences specific to diverse cultures, with the purpose of upholding health, averting ailments, and enhancing both physical and mental well-being. The term "traditional medicine" commonly denotes practices such as acupuncture in China, ayurveda in India, Unani in Arabic countries, traditional birth attendant's

medicine, mental healer's medicine, herbal medicine, and various other forms of indigenous medicinal practices(2).



Fig 1: *Commelina benghalensis* Linn

Traditional use of medicinal plant(1,3)

The plant originates from tropical regions of Asia and Africa. Within the Indian subcontinent, it is employed as a traditional herbal remedy for addressing a range of ailments. *Commelina benghalensis* is used in Indian medicine to cure a variety of conditions, including headache, constipation, leprosy, fever, snake bite, jaundice, mouth thrush, insanity, epilepsy, and psychosis sickness, depressive, emollient, demulcent, and anti-inflammatory medication. It is used to treat female infertility in Lesotho. It is used as a febrifuge and diuretic in China.

It is utilized as a vegetable in Pakistan as well as a laxative, an anti-inflammatory, and a treatment for leprosy. In Nepal, stomach issues are treated with root juice while burns are treated with plant paste. The plant is used to cure a variety of conditions in Bangladesh, including burns, eczema, abscesses, acne, scabies, warts, otitis media, suppurative sores, insomnia, migraines, and mental and respiratory ailments.

Taxonomical name(2, 4)

Domain	:	Eukaryota
Kingdom	:	Plantae
Subkingdom	:	Tracheobionta
Phylum	:	Spermatophyta
Subphylum	:	Angiospermae
Division	:	Magnoliophyta
Class	:	Liliopsida
Subclass	:	Commelinidae
Order	:	Commelinales
Family	:	Commelinaceae
Genus	:	Commelina
Species	:	Commelina benghalensis

BOTANICAL NAME: *Commelina benghalensis* L.

COMMON NAME: Bengal day flower, Tropical spiderwort, wandering dew, fire leaf

VERNACULAR NAMES OF *Commelina benghalensis*

Tamil	:	kan-na-kolai, kanavazhai
English	:	Bengal day flower, benghal wandering dew
Hindi	:	bhucha, kanakaua, kena, krishna ghas
Telugu	:	amruta kaada, neerukaassuvu, venna devikura. Venna veduru
Kannada	:	gunnachchi bale, gubbachchi basale, kanne soppu
Malayalam	:	kanavazhai
Manipur	:	kancha, kena
Marathi	:	kanchat, kena
Nepal	:	kaane ghaans
Assam	:	konaximolu
Sanskrit	:	kanchata
Bengali	:	dholapata

Synonyms

Commelina canescens, *Commelina cavaleriei*, *Commelina cuculiata*, *Commelina delicatula*, *Commelina hirsuta*, *Commelina mollis*, *Commelina nervosa*, *Commelina poligama*, *Commelina procurrens*, *Commelina prostata*, *Commelina radiceflora*, *Commelina rhizocarpa*, *Commelina senegalensis*, *Commelina turbinata*, *Commelina uncata* and *Commelina villosiuscula*. *Commelina kilimandscharica*, *Commelina obscura*, *Commelina pyrrohlepharis*, *Commelina rufociliata*. (2,5)

Habitat and distribution

Commelina benghalensis L. is a perennial herb native to tropical Asia and Africa. It is otherwise known as the paleo tropics. It is found in roadsides, waste ground, moist grassland, agriculture field, home gardens, bush land, woodland, tree plantations, running water lands, forest edges and marshlands. Plant augmentation and flowering, vegetation are occurred optimally between 20-40 °C. (6-8)

Ecology

It mainly arises in India, South Africa, and Australia. It occurs from sea level up to 1,000 m and grows best in moist and fertile soil, in sunny or lightly shaded locations. It can be maintained in clay, sandy and rocky soil. *Commelina benghalensis* is an erect or prostrate herbaceous weed. It is large herb that appears once every year and reaches a height up to 50 cm long and has a firm root with basal nodes. The stem has glossy or hairy. It has many therapeutic properties. Plant decoctions are used to cure a variety of ailments because phytochemical elements found in the extracts of this plant have demonstrated significant pharmacological activity. The extract is used for the treatment of night blindness, headaches, toothaches, cataracts, conjunctivitis, and plant extract is used to cure the various skin diseases such as acne, scabies, eczema, warts, sleep disorders, mental illness, wound healing, and it is also used as a laxative, diuretic, anti-inflammatory, and febrifuge. This plant is also found to be used as a folk medicine for treating infertility in women, in Lesotho and Cameroon. The plant has reported to possess anti-microbial, anti-diabetic, sedative, anti-oxidants, anti-cancer, hepatoprotective activities, anti-fertility (1,9,10).

Phytoconstituents

Phytoconstituents such as alkaloids, carbohydrates, sterols, saponins, polyphenols, tannins, flavonoid and glycosides have also been reported in some research investigations(11). In a previous research study, the pigments of *Commelina benghalensis* and some traditionally used medicinal plants were evaluated. Other plant pigment research studies have concluded that the content of plant pigments may vary owing to various environmental or other biochemical or environmental factors, such as the effects of air pollution, and may also vary with seasonal changes. Bioactive contents can fluctuate due to different solvents of plant parts. (4, 12).

Pharmacological activity

ACTIVITY	TYPE OF EXTRACT	MODEL USED AND STUDY DESIGN	OBSERVATION	REFERENCE
Analgesic and Anti-inflammatory Activity	Ethanollic decoction of <i>Commelina benghalensis</i> roots	Mice	Acetic acid-induced writhing by hot-plate and tail-flick tests and carrageenan-induced mice paw oedema model possesses significant analgesic and anti-inflammatory activity.	Hasan SR, Hossain MM, Akter R, Jamila M, Mazumder ME, Alam MA, Faruque A, Rana S, Rahman S. (13)
Anti-inflammatory activity	hydroethanolic extract of leaves of <i>Commelina benghalensis</i>	Wistar rats	Anti-inflammatory activity was studied using carrageenan-induced rat paw oedema, cotton pellet granuloma and xylene-induced ear oedema models	Tiwari SK, Lahkar M, Dash S, Samudrala PK, Thomas JM, Augustine BB. (14)
Sedative and anxiolytic	Hydro-methanol extract of aerial parts of	Albino mice	Different fractions of the aerial parts of <i>Commelina benghalensis</i> on thiopental induced sleeping time in	Hasan SM, Hossain MM, Akter R, Jamila M,

	<i>Commelina benghalensis</i>		mice shows show strong sedative and antianxiety properties.	Mazumder ME, Rahman S. (15)
Antimicrobial activity	Aqueous leaf extracts of <i>Ixora coccinea</i> Linn and <i>Commelina benghalensis</i>	Pathogenic strains	leaf extracts of <i>Commelina benghalensis</i> L reveals that a higher dose of the plant extract is exhibit great antibacterial activity.	Sinha U. (16)
Anticancer activity	Methanolic Stem extracts of <i>Commelina benghalensis</i>	Jurkat T cells	The Bcl-2 family of proteins (Ba-x and Bcl-2) and the p53 tumour suppressor protein play a pivotal role in CMECB-induced apoptotic cell death of Jurkat T cells beneficial in the treatment of malignant growths.	Mbazima VG, Mokgotho MP, February F, Rees DJ, Mampuru LJ.(17)
Hepatoprotective activity	Hydroalcoholic root extract of <i>Commelina benghalensis</i>	Wistar Rats	Hydroalcoholic root extracts of <i>Commelina benghalensis</i> showed significant Hepatoprotective activity against paracetamol induced hepatic injury.	Sambrekar SN, Patil PA, Kangralkar VA.(18)
Anti-diabetic activity	Methanolic extract of <i>Commelina benghalensis</i>	Male Wistar rats	Presence of stigma sterol in the methanolic extract may be responsible for antidiabetic activity	Gurjar HP, Irchhaiya R, Vermas A.(19)
Wound healing activity	Methanolic leaf extract of <i>Commelina benghalensis</i>	Male Wistar rats	In the experimental study effect of methanolic leaves extract of the <i>Commelina benghalensis</i> on wound healing in incision wound in rats shows significant result.	Joshi Op, Singh B, Singh D.(20)

CONCLUSION

Commelina benghalensis L is a significant medicinal plant with numerous phytochemical and pharmacological properties including alkaloids, carbohydrates, sterols, saponins, polyphenols, tannins, flavonoid and glycosides. Several studies have examined pharmacological action of *Commelina benghalensis* exhibits antibacterial, anti-inflammatory, anti-oxidant and wound healing properties. The medicinal herb *Commelina benghalensis* has shown promising results in treating diabetes, hepatoprotectivity, cancer. This literature review supports several therapeutic properties of *Commelina benghalensis*. Several species of the plant are also widely available in tropical Asia, Africa, and China. Different research studies were carried out on this medicinal herbaceous weedy plant, and it was having showed high pharmacological and therapeutic properties with tremendous pharmaceutical and nutraceutical values. It has been observed in earlier studies that whole part of the plants specifically the leaves and the stem contain many different active and non-active phytochemical constituents that have a wide range of therapeutic values. Further research is needed to advance clinical trials and develop novel medications for treating critical diseases, drug administration, drug-drug interaction and toxicological studies.

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