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Review Article

Cynodon dactylon (L.) Pers.: an ethnomedicinally important sacred grass in India

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Abstract: *Durva* (*Cynodon dactylon* L. Pers.), commonly known as Bermuda grass, is one of the most significant sacred grasses in India, valued for its ethnomedicinal, cultural, and ecological roles. It is a perennial, mat-forming species widely distributed across tropical and subtropical regions of the country. Keeping the importance of this grass, this paper is written to draw attention towards its significance. In Indian tradition, it is revered as sacred, especially in rituals dedicated to Lord Ganesha, and is believed to symbolize purity, resilience, and prosperity. From an ethnomedicinal perspective, it is used to treat bleeding disorders, wounds, urinary ailments, gastrointestinal disturbances, and skin diseases. Recent pharmacological investigations have validated many of these uses, highlighting its antioxidant, anti-inflammatory, antimicrobial, hepatoprotective, and anti-diabetic properties. Beyond its medicinal and cultural importance, it plays a vital ecological role in soil stabilization, erosion control, and fodder supply for livestock.

Keywords: Common herbs, conservation, medicinal, Poaceae

Introduction

India has a rich tradition of associating plants with spirituality, medicine, and livelihood (Kumar and Dash, 2012; Jena et al., 2025). Sacred plants occupy a central position in this cultural matrix, symbolizing the deep relationship between humans and nature (Petrovska, 2012; Lentz et al., 2024). Among the wide array of plants considered holy, *Durva* (*Cynodon dactylon*; Figure 1-2), also called *Hariyali*, *Arugampul*, or Bermuda grass, holds a unique status (Shi et al., 2012). It is not only a common grass found in fields, roadsides, and homesteads but also a plant that permeates the spiritual,

ecological, and medicinal dimensions of Indian life. The sacred value of *Durva* is especially pronounced in Hinduism, where it is offered to Lord Ganesha as a symbol of auspiciousness and longevity. Its evergreen growth and ability to thrive under adverse conditions have made it a metaphor for endurance and vitality. Beyond religious significance, the grass is extensively used in folk traditions and classical medicine systems such as Ayurveda, Siddha, and Unani (Jolly and Narayanan, 2000; Mishra et al., 2022; Ahmadi et al., 2025).

Figure 1: Whole plant of *Cynodon dactylon*

Historical texts describe its role in treating wounds, bleeding disorders, and urinary problems, reflecting its wide acceptance as a medicinal plant among local communities (Biswas et al., 2017; Mishra et al., 2022). In addition to its cultural and medicinal dimensions, *Cynodon dactylon* is ecologically resilient, serving as a soil-binding grass that prevents erosion and improves soil health (Sinha et al., 2023). It thrives in drought-prone as well as waterlogged conditions, making it a vital species for land rehabilitation and fodder supply. Therefore, *Durva* represents an exemplary case of a plant that bridges ecology, health, and spirituality. This review seeks to bring together its ethnomedicinal importance, pharmacological validation, religious symbolism, and ecological relevance to highlight its holistic significance in Indian tradition.

Ethnomedicinal uses

Traditional medicine in India recognizes *Durva* as a versatile therapeutic agent. Fresh juice of the plant is widely used for its hemostatic properties to stop bleeding from wounds, cuts, and nosebleeds (Pandey and Mishra, 2019). Its cooling nature makes it an effective household remedy for burning sensations, fever, and inflammation (Pandey and Mishra, 2019).

Figure 2: Inflorescence of *Cynodon dactylon*

In rural areas, the leaf paste is applied externally to treat insect bites, skin rashes, and burns, where it acts as both a disinfectant and a wound healer. Folk healers often use *Durva* juice in treating dysentery and diarrhea due to its astringent properties. Its anthelmintic effects are valued in deworming children, while some communities use it to regulate menstrual cycles and address fertility concerns. These diverse applications reflect the trust communities place in *Durva* as a holistic healing grass. The widespread availability of *Durva* further contributes to its medicinal utility. Being a common species, it is easily accessible to rural populations, ensuring its role in primary healthcare practices. Its multipurpose applications make it not just a medicinal herb but also a culturally embedded remedy that has stood the test of time (Shendye and Gurav, 2014; Mishra et al., 2022; Sinha et al., 2023).

Pharmacological properties

Modern pharmacological studies have substantiated several ethnomedicinal claims associated with *C. dactylon*. Extracts of the plant have shown significant antimicrobial activity against pathogenic bacteria such as *Staphylococcus aureus* and *Escherichia coli*, as well as certain fungal species. This validates its traditional use in treating wounds and infections. Phytochemical analysis has revealed the presence of flavonoids, alkaloids, glycosides, and phenolic compounds, which contribute to its antioxidant activity. These compounds help neutralize free radicals, thereby preventing oxidative stress-related disorders. Anti-inflammatory effects have been demonstrated in experimental models, where *Durva* extracts reduced edema and inflammation. Additional studies have shown anti-diabetic properties, with aqueous extracts lowering blood glucose levels in laboratory animals. Hepatoprotective and cardioprotective effects have also been reported, highlighting its potential in safeguarding vital organs from toxin-induced or lifestyle-related damage. These pharmacological validations bridge traditional knowledge with modern science, positioning *Durva* as a promising source of bioactive compounds (Animesh et al., 2012; Shendye and Gurav, 2014; Namdeo and Deore, 2014; Sinha et al., 2023).

Cultural and religious importance

The cultural significance of *Durva* is deeply rooted in Hindu rituals. It is especially associated with Lord Ganesha, where offering 21 blades of Durva is believed to invoke blessings of prosperity, health, and protection. Scriptures describe *Durva* as a purifier, and it is commonly used in yajnas and sacred rituals to sanctify spaces and objects. Its evergreen nature represents renewal and resilience, symbolizing the continuity of life. In many rural traditions, *Durva* garlands are used in festivals, and mats made from the grass are employed during religious ceremonies. The symbolic and practical use of *Durva* ensures its continued relevance in cultural life. Its dual role as a sacred offering and medicinal grass demonstrates the seamless integration of spirituality and health in Indian traditions (Mir et al., 2022; Sinha et al., 2023).

Ecological significance

Ecologically, *Cynodon dactylon* plays a vital role as a soil-binding species. Its creeping rhizomes and dense root systems stabilize soils, prevent erosion, and protect embankments and riverbanks from degradation. This makes it particularly useful in ecological restoration projects. The grass is also highly valued as fodder for wildlife and livestock. Its high palatability and nutritional value contribute

significantly to rural pastoral livelihoods. Moreover, *Durva* can withstand grazing pressure, drought, and salinity, making it a dependable resource in diverse climatic conditions. Due to its fast growth and adaptability, *Durva* is also cultivated in lawns, sports fields, and landscapes, where it acts as a ground cover. Its ecological resilience not only supports biodiversity but also underpins sustainable agriculture and land management practices (Chen et al., 2015; Sethi et al., 2024).

Conclusion

Durva (*Cynodon dactylon*) exemplifies a plant that embodies the unity of culture, medicine, and ecology in Indian society. Its sacred association with Lord Ganesha ensures its continued cultural relevance, while its ethnomedicinal uses provide affordable and accessible healthcare to communities. Modern research further validates its pharmacological potential, bridging traditional wisdom with scientific evidence. In addition, its ecological functions as a soil binder and fodder resource make it indispensable for environmental sustainability. This multi-dimensional importance underscores the need for further research on its phytochemistry, pharmacological mechanisms, and potential for drug development. Promoting awareness of *Durva* as both a sacred and utilitarian species can strengthen conservation initiatives and encourage its integration into sustainable rural practices.

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