



## Asian Journal of Pharmacognosy

Ethnopharmacological Note

### ***Cynodon dactylon* (L.) Pers. – a potential plant against leukemia**

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*Cynodon dactylon* (L.) Pers. (Figure 1) is a common plant in tropical and sub-tropical countries like Bangladesh and belongs to the Poaceae family. In English, it is known as Bermuda grass or Bahama grass, while its local name is durba ghas. The plant rarely grows more than 3 cm in height but has deep roots and is an invasive plant, which quickly can spread to adjoining areas. It is a plant with reported multiple ethnomedicinal uses in Asian and African countries. In Karnataka, India, the locals use the plant for treatment of malaria (Prakash and Unnikrishnan, 2013). In Dharmabad taluka of Nanded district, Maharashtra, India, the plant is reported to be used for treatment of abdominal heat (Ghorband and Biradar, 2011). Traditional healers in Kancheepuram District of Tamil Nadu, India, use the leaves of the plant to keep the body cool (Muthu et al., 2006). The Tai-Khamyang tribe of Assam, India, uses the plant for treatment of epistaxis or bleeding from nose (Sonowal and Barua, 2011). The plant is used for blood purification in Pachamalai of Eastern Ghats, Tamil Nadu, India, by the Malayali Gounder tribes (Vaidyanathan et al., 2014). In Bhopal district of India, the plant is used for treating stone diseases (Agarwal and Varma, 2012). Tribal communities of Paschim Medinipur District, West Bengal, India, use the plant for treatment of jaundice (Sarkhel, 2015). The plant is used for skin diseases in Nagapattinam district of Tamil Nadu, India (Sivaranjani and Ramakrishnan, 2012). The leaves of *C. dactylon* are used as anti-abortifacient in Canhane village, district of Massingir, Mozambique (Ribeiro et al., 2010). In Mahafaly region of south-western Madagascar, the plant is used to treat venereal infections (Andriamparany et al., 2014). In South Africa, the Khoi-San tribe and in Cape Dutch ethnomedicinal practices, the plant is used for treatment of coughs and gout (van Wyk, 2008). The Marma tribal communities of Khagrachhari district, Bangladesh, use whole plants to stop bleeding (Malek et al., 2014). Folk medicinal practitioners from villages in Chuadanga District, Bangladesh, use the plant to stop bleeding during pregnancy (Khatun et al., 2013). The Oraon tribe of Sylhet district, Bangladesh, uses the shoots of the plant to treat infections and headache (Azam et al., 2013). The Garo tribal community living in Netrakona district, Bangladesh, uses paste of whole plants to stop bleeding from external cuts and wounds (Rahmatullah et al., 2009). A novel use of *C. dactylon* was obtained from Mr. MOG (initials used only to protect identity) in 2017, male, age 68 years old, totally illiterate and by profession a seasonal rickshaw puller in Dhaka city, Bangladesh. He was suffering from leukemia, as diagnosed by allopathic doctors at Dhaka Medical College (DMC), Bangladesh. He was feeling unwell and so visited the outpatient section (usually a section used by patients who have income below the poverty line) in July 2014. The outpatient section did some tests including blood tests on Mr. MOG and diagnosed him with leukemia. After learning about the treatment costs, Mr. MOG found that he would not be able to afford the costs. He told that in July 2014, the doctors mentioned to him that he



does not have much survival time, possibly only one month at the most. Since that day, Osman Goni started taking juice obtained from crushed leaves of *C. dactylon* after learning about this plant from a road-side folk medicinal practitioner. Mr. MOG could not give us diagnostic test reports or any other clinical parameters. He said that since he did not understand anything about those reports and was unable to fund allopathic treatment costs, those reports got lost over time. Permission to interview Mr. MOG was obtained from the University Ethics Committee as well as from Mr. MOG himself. It may be mentioned in this context that Mr. MOG was a seasonal rickshaw puller in Dhaka city. That means he would be plying his rickshaw at certain times of the year, particularly during winter, when the cooler temperature makes the job less stressful. His age also deterred him from plying rickshaws throughout the year. Since he had no fixed address and plied his rickshaw on different days at different areas of the city, in practical terms it was very difficult to get hold of him. We met him accidentally on the first day while we were looking for a rickshaw, and after hearing his story, which he was narrating while plying his rickshaw, requested him to meet us another day for any further information. Mr. MOG kindly complied with our request. We were not able to locate the folk medicinal practitioner; possibly he may have switched places. To obtain juice from crushed leaves, Mr. MOG pulled out the grass leaves from the field, washed it 3 times with water and crushed the leaves to make juice out of it in a pot. He used to take the juice on an empty stomach. He took one glass of juice every morning for one year. At present, he does not have any kind of problem and is still very healthy. The doctors did not find any signs of leukemia in Mr. MOG in 2017. The results suggest that *Cynodon dactylon* have anti-cancer properties. A search in abstracting bodies like PubMed revealed that several reports exist on the anticancer effects of *C. dactylon*. Chemopreventive effect of plant extract has been observed in 1,2-dimethyl hydrazine or DMH-induced colon carcinogenesis in experimental animals (Albert-Baskar and Ignacimuthu, 2010). Hexane, ethyl acetate and methanol extract of *C. dactylon* reportedly demonstrated antiproliferative activities in human colon adenocarcinoma cell line, COLO 320 DM (Baskar et al., 2012). Root extract of the plant has been found to be active against diethyl nitrosoamine induced hepatic carcinoma (Kowsalya et al., 2015). Ethanolic extract of the plant reportedly showed anticancer activity against Hep2 cell line (Salahuddin et al., 2016). Thus the plant merits potential to be studied for its beneficial effects against leukemia.

**Keywords:** medicinal plants, *Cynodon dactylon*, leukemia

### **Declaration of conflict of interest**

No conflict of interest associated with this work.

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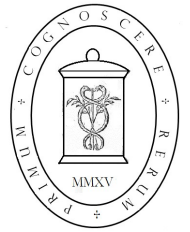
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Figure 1. *Cynodon dactylon* (L.) Pers.