

**Short communication**

Annual flowering of *Dendrocalamus longispathus* (Kurz) Kurz in Mizoram

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INTRODUCTION

Bamboo belongs to the *Poaceae* family and it has about 90 genera with over 1200 species distributed all over the world (Lobovikov *et al.* 2007). It is naturally distributed in the tropical and subtropical belt between approximately 46° north and 47° south latitude, and is commonly found in Africa, Asia and Central and South America. There are few species which can grow in temperate zones also such as *Arundinaria gigantea* (Walter) Muhl. Among Asian countries, India and China are the two major bamboo producing countries (Maxim *et al.* 2005).

The bamboo bearing area in India is estimated to 15.69 million hectares (Anonymous 2017). There are about 125 indigenous and 11 exotic species of bamboo belonging to 23 genera reportedly found in India (Anonymous 2017). About 66% of the growing stock is concentrated in the North Eastern states of the country (Adkoli 2002). The principal bamboo genera occurring in India are *Arundinaria*, *Bambusa*, *Chimonobambusa*, *Dendrocalamus*, *Dinochloa*, *Gigantochloa* etc.

Mizoram is situated in the north eastern part of India, and it shares international borders with Bangladesh in the west and Myanmar in east and south. The geographical area of the state is 21,081 km² which constitutes 0.64% of the total area of the country. The recorded forest cover in the state is 18,186 km² which works out to be 86.27% of its geographical area (Anonymous 2017). The extent of bamboo bearing area in the forests of the state is 3,267 km² (Anonymous 2017). A number of bamboo species grow very luxuriantly in the state, most notably is the *Melocanna beccifera* (Roxb.) Kurz, which constitutes approximately 70% of the bamboo cover. *Dendrocalamus longispathus* (Kurz) Kurz, *D. hamiltonii* Gamble, *D. strictus* (Roxb.) Nees and *Bambusa tulda* Roxb. are the other notable bamboo species of the state having populations distributed in small patches across the state.

Dendrocalamus longispathus is a large caespitose bamboo; culms up to 20 m tall, up to 10 cm in diameter; nodes swollen; internode swollen, 25–60 cm long. It occurs in moist hill slopes and along streams in the moist fertile loamy soil and particularly shaded fringes of the forest cover. It is distributed in India (Assam, Manipur, Mizoram and Tripura), Bangladesh and Myanmar. It is called as *Rawnal* in Mizo language. Mature culms are harvested for its use as construction material and tender shoots are harvested during rainy season for local consumption. Apart from these two most common uses, it is also being utilized for handicraft industries, mats, and matply industries. To sum up, it can be argued that after *Melocanna beccifera* (Roxb.) Kurz, it is the second most utilized bamboo to sustain rural livelihood of the state.

According to Gamble (1896), *D. longispathus* flowered during 1876 and 1879–80 in Chittagong (Bangladesh) and during 1871 and 1891 in Myanmar. Gupta (1972) reported it in flowering from Assam in 1968 and in Mizoram during 1966–67. Bahadur (1979) stated that it was flowering in Forest Research Institute, Dehradun in 1979. Sharma *et al.* (2014) reported its sporadic flowering in Kolasib and Mamit districts of Mizoram.

In this present communication, it is reported that since 2014, small and segregated populations of this species flower annually across the state (Table 1). Flowering and non-flowering clumps can be found within the same site (Fig. 1). Few individual in the same population did not flowered at all. This peculiar flowering pattern of *D. longispathus* is a cause of concern for all those who are associated with it. Localized arid conditions can

be one of the factors triggering flowering. Usually this species is present in gradually sloping hills where few natural water sources are present at some places. There is a very less rainfall in Mizoram from October till March. The observed sporadic and segregated flowering pattern is may be due to localized unavailability of water. Aftermath of flowering in *D. longispathus* includes death of flowering culms and increase in rodent population. Since jhumming or slash and burn practice is quite prevalent in Mizoram, therefore, dead flowering clumps are very susceptible to fire.

Table 1. Flowering in *Dendrocalamus longispathus* (Kurz) Kurz in Mizoram since 2014.

S.N.	Year	Month of flowering	Place of flowering	Remarks
1.	2014	October-November	Kolasib and Mamit district	Clumps died after flowering and seed setting.
2.	2015	October-December	Kolasib, Mamit, and Sercchip district	Population of wild rodents and other small mammals increased due to the abundant availability of bamboo seeds.
3.	2016	October-November	Lengpui, Aizawl and lunglei district	
4.	2017	October-November	Lengte, Lawngtlai, Siaha and Mamit district	
5.	2018	October-November	Lengpui, Sercchip, Kolasib, Mamit	



Figure 1. *Dendrocalamus longispathus* (Kurz) Kurz: **A**, Flowering population, Mizoram in 2017 (Note the non-flowering green clumps amongst flowering brown clumps); **B**, Individual clump in flowering stage; **C**, Inflorescence; **D**, Immature seeds.

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