

Notes on the pygmy form of *Mnesithea granularis* (Poaceae)

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नेसिथिया ग्रेनुलेरिस (पोएसी) के बौने रूप पर आलेख

नागाराजू सिद्धाबाथुला एवं केएए कबीर

सारांश

भारत के विभिन्न क्षेत्रों में वितरित नेसिथिया ग्रेनुलेरिस (एल.) डि कोनिंग एवं सोसेफ का बौना रूप की तुलना रंगीन चित्रों सहित सामान्य रूप से की गयी है।

ABSTRACT

The morphological features of pygmy form of *Mnesithea granularis* (L.) de Koning & Sosef distributed in different parts of India are compared with the normal form along with colour photographs.

Keywords: Ananthagiri hills, Dwarf, *Mnesithea*, Nanism, Phenotypic variations

INTRODUCTION

The pantropical genus *Mnesithea* Kunth belongs to the family Poaceae, subfamily Panicoideae, supertribe Andropogonodae, tribe Andropogoneae, subtribe Rottboelliinae (Soreng & al., 2017), and comprises 33 species (Veldkamp, 2013). In India, the genus is represented by nine species and four varieties (Prasanna & al. 2020, Kellogs & al., 2020), of which four species are distributed in southern parts of the country (Nagaraju & al., 2020).

As a part of documentation of diversity and distribution of grasses in Telangana state botanical explorations were conducted frequently in different parts of the state during 2019–2021. During one of the explorations the first author observed a small population of small-sized grass growing in almost soilless rocky crevices of Ananthagiri hills (17.31174° N, 77.86333° E, 666 m), Vikarabad district, Telangana during October to March. After a careful scrutiny of specimens (S. Nagaraju BSID008939) along with literature (Fischer, 1934; Bor, 1960; Kabeer & Nair, 2009) and consultation of herbaria (BSID, MH, BSI, CAL), it was identified as *Mnesithea granularis* (L.) de Koning & Sosef, an Old World tropical species, also

found in some parts of North and South America as an introduced grass (POWO, 2021). In India, this species is distributed in Andaman and Nicobar Islands, Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttar Pradesh and West Bengal (Kellogs & al., 2020). This species has been treated under *Hackelochola* by some workers, but Koning & Sosef (1986) merged *Hackelochola* with *Mnesithea*, as the morphological differences between these two genera are not impressive, and made a combination *M. granularis*. Kellogs & al. (2020) also recognized this species under *Mnesithea*, and the same is followed here.

Generally, plants that grow in poor soil, where there is no sufficient food, are likely to be dwarfed. The genetic or physiological stunting of growth of plants or animals is called “nanism”. This phenomenon of dwarfism is not hereditary, which has been proved by experiments on a wild grass *Bormus* by Muller & al. (1990). According to Hansen & al. (1917) the limiting of the soil content is possibly the major factor in the production of dwarfing or nanism in plants. Usually, *Mnesithea granularis* occurs in moist and rocky localities, with culms growing to a



Fig. 1. *Mnesithea granularis* (L.) de Koning & Sosef: A & B. Normal form; C & D. Pygmy form.

height of 65–70 cm. However, while growing in almost soilless rocky crevices, the species exhibits nanism in its growth, probably due to lack of water and other essential minerals. The heights of culms of *M. granularis* recorded in some of the Indian works as follows: 10–75 cm high (Blatter & McCann, 1935); 10–60 cm high (Sreekumar & Nair, 1990); up to 1 m high (Shukla, 1996); 10–46 cm high (Kabeer & Nair, 2009); 10–50 cm high (Potdar & al.,

2012); up to 50 cm high (Rao & al., 2017); 10–45 cm high (Chorghe & Prasanna, 2021).

Though it shows significant quantitative variations in vegetative characters, the floral characters are almost similar to the normal form (Fig. 1). The phenotypic variations between the pygmy form and the normal are compared in **Table 1**.

Table 1. Comparison of morphological variations between pygmy and normal form

Sl. No.	Parts	Pygmy form	Normal form
1.	Culms	5–7 cm high	15–65 cm high
2.	Nodes	2 or 3	8–12
3.	Branches	Basal	Cauline
4.	Leaves	Elliptic-lanceolate, 1–3.5 × 0.1–0.4 cm	Ovate-elliptic, 2–10 × 0.3–0.8 cm
5.	Inflorescence	Mostly terminal, 5–7.2 mm long	Axillary and terminal, 10–20 mm long

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