

# On the identity of *Eragrostis dayanandanii* (Poaceae) described from Tamil Nadu, India

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## भारत के तमिलनाडु राज्य से वर्णित इराग्रोस्टिस दयानन्दनी (पोएसी) की पहचान

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### सारांश

इराग्रोस्टिस दयानन्दनी रविचंद्रन एवं अन्य को इराग्रोस्टिस गंगेटिका (रॉक्स) स्ट्यूड के पर्याय के रूप में लिया गया है। इस पौधे के गुणों को सारणी में तथा इसके स्पाइकेलेट, लेम्मास एवं कैरियोप्सेस के छायाचित्र को दर्शाया गया है। इसके अतिरिक्त, भारत में पाये जाने वाली जाति इराग्रोस्टिस के पेलिया के कील्स पर पाये जाने वाले बालों के बारे में भी प्रकाश डाला गया है।

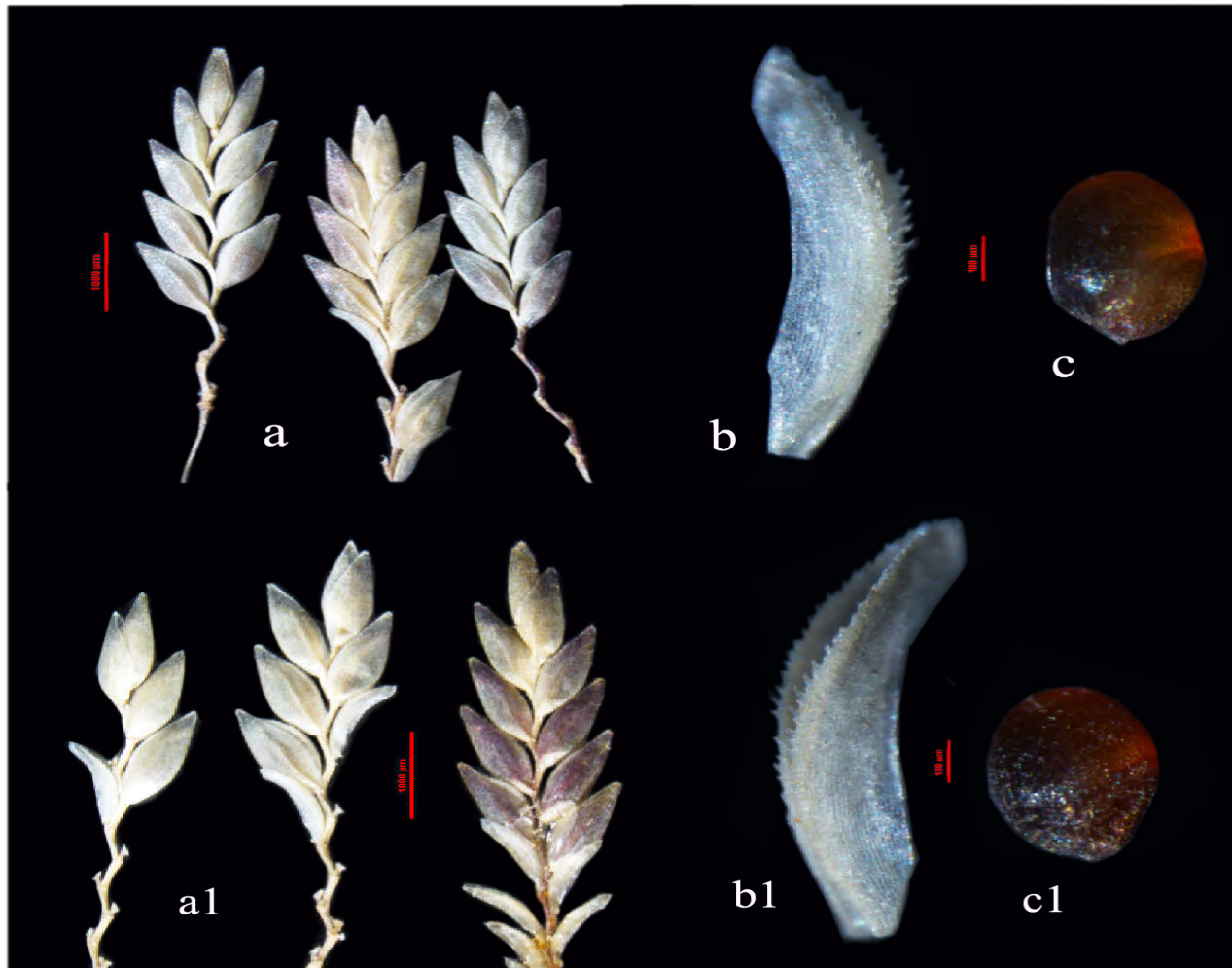
### ABSTRACT

The name *Eragrostis dayanandanii* Ravichandran & al. is reduced as synonym under *Eragrostis gangetica* (Roxb.) Steud. The characters of the species are tabulated and provided images of spikelets, lemmas and caryopses. Also discussed about the types of hairs on keels of palea found in Indian *Eragrostis*.

**Keywords:** *Eragrostis dayanandanii*, Poaceae, identity problem.

*Eragrostis dayanandanii* Ravichandran & al. is a new species described from Tamil Nadu, India (Ravichandran & al., 1996). These authors compared the species with *E. malayana* Stapf (*E. montana* Balansa) which has not been reported so far from India. The diagnostic characters of *E. malayana* include open to contracted and 3 – 10 mm long panicle; 1.5 – 2 mm broad spikelets; straight rachilla; broadly ovate lemmas; persistent and eciliate paleas; 3 stamens; and 0.4 – 0.5 mm long slightly laterally compressed caryopses. According to the authors, *E. malayana* is the allied species for *E. dayanandanii* and different from it mainly by having 6 – 10 mm long spikelets, prominently zigzag rachilla, equal length of lemmas and paleas and not laterally compressed caryopses. The present

authors thoroughly studied the holotype of *E. dayanandanii* (Azhakanandan & al., 235) deposited in MH and similar other specimens collected from the type locality and compared its characters with various *Eragrostis* species including *E. gangetica* (Roxb.) Steud., a species widely distributed in tropical Asia including India and also Africa. In this study it was found that the characters emphasized by the authors to differentiate *E. dayanandanii* from *E. malayana* match very well with those of *E. gangetica* about which nothing has been mentioned in the publication. Furthermore, a comparative study was carried out between *E. dayanandanii* and *E. gangetica* (table 1). Microscope images of the spikelets and caryopses of both the species are also given in fig. 1. Since the authors



**Fig -1:** *Eragrostis dayanandanii* Ravichandran & al. (a - c); *E. gangetica* (Roxb.) Steud.(a1 - c1) : **a & a1.** Spikelets; **b & b1.** Paleas; **c & c1.** Caryopses.

**Table -1:** Salient characters of *Eragrostis dayanandanii* Ravichandran & al. and *E. gangetica* (Roxb.) Steud.

|           | <b>E. dayanandanii</b> (based on the study of holotype)            | <b>E. gangetica</b>                                    |
|-----------|--|--|
| Culms     | Annual, 10 – 15 cm high  | Annual, 15 – 60 cm high                                |
| Leaves    | 4 – 15 x 0.2 – 0.5 cm, ciliate with long hairs along basal margins | 3 – 15 x c. 0.4 cm long, margins villous hairy at base |
| Ligules   | Membranous with fringe of hairs                                    | Membranous with fringe of hairs                        |
| Panicle   | Effuse, 4 – 10 cm long, alternate                                  | Effuse, 4 – 10 cm long, alternate                      |
| Spikelets | 6 – 10 cm x 1 – 1.5 mm, oblong to lanceolate                       | 3 – 10 cm x 1 – 1.5 mm, oblong to lanceolate           |
| Rachilla  | Zigzag, partly persistent  | Zigzag, partly persistent                              |
| Florets   | 6 – 36, disarticulating from below upwards                         | 6 – 35, disarticulating from below upwards             |
| Lemma     | Deciduous, acute, purple tinged                                    | Deciduous, acute, purple tinged                        |
| Palea     | c. 1 mm long, subpersistent, scaberulous along keels               | c. 0.9 mm long, subpersistent, scaberulous along keels |
| Stamens   | 2; anthers c. 0.2 mm long, purplish                                | 2; anthers c. 0.2 mm long, purplish                    |
| Caryopsis | c. 0.5 x 0.2 mm, ellipsoid to ovoid                                | c. 0.5 x 0.2 mm, ellipsoid to ovoid                    |

mentioned the palea keels of *E. dayanadanii* as “shortly ciliate”, this species has been placed in different websites under the category of *Eragrostis* with ciliate palea keels. However, the present study could prove that the “shortly ciliate” palea keels so mentioned in the protologue of *E. dayanadanii* is a character well referable to the “scaberulous” nature of the palea keels of *E. gangetica* and other species of *Eragrostis* having this character. This situation needs a discussion on the classification of *Eragrostis* based on the differences in the types of hairs along the keels of palea.

Species of *Eragrostis* in India can be categorized into 3 main groups based on the differences in the comparative length of the hairs along the keels of palea. In many species the keels are ciliate with the cilia either very long with or without bulbous bases as in *E. amabilis* (L.) Wight & Arn., *E. ciliaris* (L.) R. Br., *E. ciliata* (Roxb.) Nees etc., or medium sized and without any bulbous base as in *E. deccanensis* Bor, *E. jainii* Vivek, G.V.S. Murthy & V.J. Nair etc. In the second group the hairs are minute in nature and this condition is usually termed as scabrous or scaberulous (*E. gangetica*, *E. nutans* (Retz.) Nees ex Wight & Arn., *E. unioloides* (Retz.) Nees ex Steud. etc.), or ciliolate (*E. zeylanica*, *E. cumingii* etc.). In the third group as in *E. japonica* ((Thunb.) Trin. the keels of palea are smooth with the absence of hairs. *E. dayanandanii* falls within the second group of species which have keels of palea scaberulous. The comparative table given below shows that *E. dayanandanii* is in no way different from *E. gangetica* and as such has been reduced as a new synonym of the latter species.

**Notes:** *Eragrostis gangetica*, can be distinguished from all other species of the genus by the presence of

membranous ligule with ciliate rim, open, effuse panicles, lanceolate to elliptic spikelets with florets disarticulating from below upwards, slender rachilla visible between florets, deciduous lemmas, persistent to subsistent paleas with scaberulous keels, 2 small and purplish anthers and ellipsoid to ovoid caryopses.

The nomenclature of the species is summarized below  
*Eragrostis gangetica* (Roxb.) Steud., Syn. Pl. Glumac. 1: 266. 1854. *Poa gangetica* Roxb., Fl. Ind. 1: 341. 1820. TYPE: India, banks of Ganges, Roxburgh s.n. (holo BM).  
*Eragrostis stenophylla* Hochst. ex Miq., Verh. Konink.-Nederl. Inst. 3, 4: 39. 1851, pro parte. TYPE: India, Mangalore, Hohenacker, R.F. 664 (holo BM: BM000959505).  
*E. dayanandanii* Ravichandran et al. in Kew Bull. 51: 155–157. 1996, *syn. nov.* TYPE: India, Tamil Nadu, Chengalpattu district, 24.01.1992, Azhakanandan, Krishnan, Ravichandran & Samson 235 (holo MH; iso K, Madras Christian College Herbarium, Chennai).

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