



Diversity of *Eragrostis* Wolf from Satpuda range of Khandesh region of Maharashtra

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Abstract

Eragrostis Wolf is a highly variable genus in the grass family Poaceae (subfamily Pooideae). *Eragrostis* Wolf is largest genus of study area. In India, the genus is represented by 35 species and 21 species in Maharashtra. A taxonomic study of 14 species of the genus *Eragrostis* Wolf in Satpuda range of Khandesh region is here presented. The study was carried out based on fresh collections from various localities of the Khandesh region.

INTRODUCTION

The grass family Poaceae is the most widely distributed and is in great abundance than any other group of flowering plants. It is the single most important family of flowering plants for survival of mankind. The grasses form a natural homogenous group of plants with remarkable diversity playing a significant role in the lives of human being and animals. The grass family is not only largest family in terms of species and genera but also it stands first in its economic and ecological importance. Although, it is difficult to estimate exact number of species of grasses, fair estimate is about 10,000 to 11,000 species belonging to about 700 genera for the world (Calyton and Renvoize, 1986). However, in India there are more than 1200 species belonging to 268 genera (Karthikeyan *et al.* 1989; Moulik, 1997).

Grasses are annual to Perennial herb, woody shrubs or trees like bamboos; roots fibrous; rhizomes present or absent, sometimes stolons developed. Culms erect, ascending or prostrate and creeping; internodes usually hollow but solid in Andropogoneae and some other groups too; nodes are usually terete, sometimes compressed or angled. Leaves usually solitary at the nodes, may be crowded at the base of culms, alternate and two-rowed consisting of sheath, ligule and blades; sheaths encircle the culms, with free or over-lapping margins, frequently swollen at base; ligule placed at the junction of the sheath and blade, membranous,

chartaceous or reduced to a fringe of hairs, rarely absent; blades usually flat, linear to lanceolate, venation parallel, rarely with a constricted petiole. Inflorescence a panicle, raceme or spike. Basic unit of grass inflorescence is a spikelet, sessile or pedicelled, with one to more sessile florets, its axis is rachilla, continuous or jointed. At the base of spikelet are two empty glumes, lower and upper. Above these glumes are florets. Each floret consists of lemma and palea called the floral bracts. In the axil of the palea the flower is enclosed, bisexual or unisexual. The highly modified and reduced perianth is represented usually by 2 lodicules. Stamens are usually 3, sometimes 2 or 6. Pistil with superior ovary, unilocular, one-ovuled, style 2, stigma plumose. Fruit 1-seeded, indehiscent, rarely mucilage forming perianth.

It is difficult to identify grasses due to their complicated, miniature and puzzling floral structure, small size of floral organs, special terminology and complicated structure of spikelet and inflorescence. Thus, in the present work the first task is to accept the taxonomic challenges to trace the reasons of neglect of Poaceae. Sincere and critical approach has been made to realise the problematic aspects and their solutions with the help of extensive and intensive field and laboratory explorations.

Study Area: Khandesh lies at the Northwestern corner of the Deccan plateau, in the valley of the Tapti river, and is bound to the north by

the Satpuda ranges, to the east by the Berar (Vidarbha) region, to the south by the hills of Ajanta, belonging to the Marathwada region of Maharashtra, and to the west by the Northern most ranges of the Western Ghats, and beyond that the coastal plain of Gujarat. Khandesh includes varied topographical features and landscape. It lies between 20° 8' and 22° 7' North latitude and 73° 42' and 76° 28' East longitude. For administrative purposes, it is distributed over sixteen sub-divisions, with an average area of 1669.12 sq. km, 215 villages and 64,290 inhabitants. Khandesh covers a total area of 26,703.36 sq. km stretching nearly 257.44 Km along. The river Tapti traverses the length of Khandesh from 112 to 144 Km. Khandesh forms an upland basin of the most northerly section of the Deccan table land. Along the whole northern frontier, the district is bounded by the Satpuda ranges a mountain tract from 48.27-64.36 km wide.

The forest of the Khandesh region is of dry deciduous type. The vegetation varies with the changes in altitude, aspect and rainfall. While working on grasses of Khandesh region of Maharashtra we undertook frequent collection tours in every season to study grasses. Khandesh region though botanically rich in biodiversity have not been explored extensively except a few sporadic reports on floristic of Khandesh region by Patil 2003; Kshirsagar 2008; Khan 2017 and Khan 2019.

MATERIALS AND METHODS

Satpuda ranges, which is one of the major hotspot of plants in Khandesh region of Maharashtra. While working on grasses of Khandesh region of Maharashtra State, frequent collection tours were undertaken in every season for plant collections. The outcome of the collection tour was 14 species of *Eragrostis* Wolf belonging to the family Poaceae. The specimens were collected from wet open grasslands on hill slope and margins of water courses and in moist shady places in forest at high elevations. All taxa have been identified with the help of available literature. Close examination

with the help of literature and herbarium specimens revealed that they were not any special survey on *Eragrostis* Wolf recorded earlier from Khandesh region of Maharashtra State. Identification of all taxa was confirmed by Dr.J.F.Veldkamp, National Herbarium, University of Leiden, the Netherland, and also by comparing the specimens with those at Botanical Survey of India (BSI) western circle, Pune. The voucher specimens have been deposited at the herbarium of Department of Botany, H. J. Thim College of Arts and Science Mehrun, Jalgaon, Maharashtra. The plants have been described with their Material and Methods: Latin names, followed by author's citations.

RESULT AND DISCUSSION

During the survey of genus *Eragrostis* Wolf from Satpuda range of Khandesh region of Maharashtra all species were identified with the help of pertinent literature

Blatt. & McC. (1935), Cooke (1958) (Repr.ed.), Bor (1960), Stapf in Hook (1896), Mohanan & Sreekumar (1982), Nair (1991), Laxmi in Sharma *et al.* (1996), Moulik (1997); Yadav & Sardesai (2002), Naik (1998), Kshirsagar and Patil (2008) and Potdar *et al.* (2012) and also consulted the scientist of National Herbarium Netherland, University of Leiden branch, the Netherland. The genus *Eragrostis* Wolf about 35 species are found in India and 21 species in Maharashtra during the exploration of Khandesh region 14 species are collected out of which *Eragrostis cumingii* Steud. is a new distributional records for Maharashtra State and *Eragrostis cilianensis* (All.) Vignolo-Lutati, *Eragrostis gangetica* (Roxb.) Steud. *Eragrostis minor* Host., *Eragrostis nutans* (Retz.) Nees ex Steud. *Eragrostis riparia* (Willd.) Nees. and *Eragrostis tenuifolia* Hochst.ex Steud. are new distributional records for Khandesh region of Maharashtra. Detailed descriptions of the taxa, flowering and fruiting period and distributions, precise locations and exsiccate numbers are appended at the end.

ERAGROSTIS N.M. Wolf.

- 1a. Spikelets breaking up from above downwards; rhachis fragile.....2
 - 2a. Keels of paleas scabrid or smooth, not ciliate.....3
 - 2b. Keels of paleas more or less ciliate.....*E. japonica*
 - 3a. Panicles effuse..... 4
 - 4a. Culms and leaves viscous..... *E. viscosa*
 - 4b. Culms and leaves not viscous.....*E. tenella*
 - 3b. Panicles spiciform or compact and dense..... 5
 - 5a. Annuals; lemmas ciliate on keels.....*E. ciliaris*
 - 5b. Perennials; lemmas not ciliate on keels..... 6
 - 6a. Lemmas 1.2 mm long, rounded at

apex.....	<i>E. coaractata</i>
	6b. Lemmas 1.7 mm long, acute at apex.....
1b. Spikelets breaking up from below upwards; rhachis tough.....	7 <i>E. riparia</i>
7a. Perennials.....	8
8a. Lemmas upto 1.8 mm long.....	9
9a. Spikelets 5-7 mm long, 5-15 flowered, stamens 3.....	<i>E. nutans</i>
9b. Spikelets 2-10 mm long, 5-20 flowered, Stamens 2.....	<i>E. cumingii</i>
8b. Lemmas over 2 mm long.....	<i>E. tenuifolia</i>
7b. Annuals.....	10
10a. Lemmas upto 1.5 mm long.....	11
11a. Plants glandular.....	12
12a. Lowest branches of panicles fascicled or subwhorled.....	<i>E. pilosa</i>
12b. Lowest branches not whorled.....	<i>E. minor</i>
11b. Plants eglandular.....	<i>E. gangetica</i>
10b. Lemmas over 1.5 mm long.....	13
13a. Spikelets reddish-purple; palea deciduous.....	<i>E. uniloides</i>
13b. Spikelets dark olive-grey; palea persistent.....	<i>E. cilianensis</i>

Eragrostis cilianensis (All.) Vignolo-Lutati in Malpighia 18: 386.1904; Blatt. & McC. Bombay Grass. 237.1935; Bor, Grass. Bur. Cey. Ind. Pak. 503.1960; Laxmi in Sharma *et al.* Fl. Maharashtra State Monocot. 481. 1996; Potdar *et al.* Grasses of Maharashtra 528.2012. *Poa cilianensis* All. Fl. Pedem. 2: 246, t. 91. f. 2.1785. *Eragrostis major* Host. Gram Austr. 4: 14, 1.24. 1809; Stapf in Hook, f. Fl. Brit. Ind. 7: 320. 1896. Plate-I.

Annual. Culms tufted, terete, 15-65 cm tall, erect or ascending, branched from the base; nodes glabrous. Leaves: Sheath compressed, 2-8 cm long, pilose at throat; ligule a ring of hairs; blades linear or linear-lanceolate, 5-15 x 0.5-1 cm, glabrous, margins with or without regular or irregularly small raised circular glands, acuminate at apex. Panicles effuse, 10-24 cm long, stright; rhachis stright, smooth; pedicels filiform, scaberulous, straight. Spikelets 7-12 x 2-4 mm, 10-20 flowered, breaking up from below upwards dark olive-grey. Lower glume membranous, narrowly ovate, 1.6-2 x 0.4-0.6 mm, 1-nerved, keeled, 2-3 glands on keel, keel scaberulous, acute at apex. Upper glume membranous, narrowly ovate, 1.7-2 x 0.5-0.7 mm, 1-nerved, keeled, 2-3 glands on the keel, keel scaberulous acute at apex. Lemma membranous, broadly ovate, 2-2.2 x 0.8-1 mm, 3-nerved, keeled; keel scaberulous, obtuse at apex. Palea hyaline, narrowly obovate, 1.7-1.9 x 0.6-0.8 mm, persistent, 2-nerved, 2-keeled; keels scabrid, obtuse at apex. Lodicules 2. Stamens 3; anthers upto 0.4 mm long. Caryopsis globose, 0.5-0.7 x 0.4-0.5 mm, reddish-brown.

Fls. & Frts: September to Noveember.

Distribution: Dhule and Nandurbar districts.

Habitat: Occasional. In open grasslands and margins of fields.

Specimens examined: Dhule Dist. Charanmal, TAK 1560; Nandurbar Dist. Amlibari, TAK 1925, Bhagdari, TAK 2118. Uklapani, TAK 2474.

Note: It is easily differentiated from other species by presence of glands on keels and margins of leaves.

Eragrostis ciliaris (L.) R. Br. in Tuckey, Narr. Exp. Congo, App. 478. 1818; Bor, Grass. Bur. Cey. Ind. Pak. 506. 1960; Laxmi in Sharma, *et al.* Fl. Maharashtra State Monocot. 483. 1996; Moulik, Grass. Bam. India 2: 598. 1997; Yadav & Sardesai in Fl. Kolhapur Dist. 580. 2002; Potdar *et al.* Grasses of Maharashtra 530. 2012. *Poa ciliaris* L. Syst. Nat. ed. 10.2: 875. 1759. *Eragrostis ciliaris* var. *brachystachya* 1. Boiss. Fl. Orient. 5: 582. 1884; Stapf in Hook. f. *op. cit.* 315 ; Cooke , Fl. Presi. Bombay 3; 545; 1958(Repr.ed.); Bor, *op. cit.* Plate-I.

Annual. Culms terete, 8-40 cm tall, slender, erect or geniculately ascending at base , glabrous; node glabrous. Leaves: sheath terete, 1-3 cm long, bearded with long hairs at the mouth; ligule a fringe of short hairs; blades flat or convolute, linear or linear-lanceolate, 2-10 x 0.3-0.6 cm, glabrous, acuminate at apex. Panicle compact, cylindric, 3-12 cm long; rhachis smooth, branches short, flexuous, smooth; pedicels filiform, short. Spikelets compressed, elliptic-ovate, 2.5-3 x 1.8 -2 mm, 4-10 flowered, braking up from above downwards, very pale green. Lower glume membranous, ovate-lanceolate, 0.5-1 x 0.1- 0.2 mm, 1-

nerved, keeled; keel scabrid, acute at apex. Upper glume membranous, ovate-lanceolate, 0.8-1.3 x 0.2-0.3 mm, 1-nerved, keeled; keel scaberulous, acute at apex. Lemmas membranous, oblong, 1-1.5 x 0.2-0.3 mm, 3-nerved, 1-keeled; keel scaberulous, acute at apex. Palea hyaline, oblong, 1-1.4 x 0.1-0.2 mm, 2-keeled; keels with long, soft cilia, obtuse at apex. Lodicules 2. Stamens 3; anthers upto 0.3 mm long. Caryopsis 0.5-0.6 x 0.2-0.3 mm, ovate or elliptic.

Fls. & Frts: August to January.

Distribution: In all districts of Khandesh.

Habitat: Common. In open grasslands and in cultivated fields.

Specimens examined: Jalgaon Dist. Eklagna forest, TAK 249. Amalner, TAK 184. Meharun garden, TAK 207; Dhule city, TAK 1666; Nandurbar Dist. Toranmal, TAK 2179.

Note: It is characterized by its cylindrical spike like panicle and having bulbous based long, soft cilia on the keels of palea.

Eragrostis coarctata Stapf. in Hook, f. Fl. Brit. Ind. 7: 313. 1896; Bor, Grass. Bur. Cey. Ind. Pak. 507. 1960; Laxmi in Sharam *et al.* Fl. Maharashtra State Monocot 483. 1996; Moulik, Grass. Bam. India 2: 601. 1997; Naik, Fl. Marathwada 2: 1036. 1998; Kshirsagar and Patil in Fl. Jalgaon Dist, Maharashtra 357. 2008; Potdar *et al.* Grasses of Maharashtra 530. 2012.

Annual or perennial. Culms tufted, 10-70 cm tall, erect or geniculately ascending; nodes glabrous. Leaves; sheath terete, 2-5 cm long, glabrous, bearded below the mouth; ligule a rim of hairs; blades flat linear or convolute, 3-15 x 0.2-0.5 cm, glabrous, acuminate at apex. Panicles subspiciform, 5-15 cm long; rhachis slender, scaberulous; branches hispid; pedicels filiform, scaberulous. Spikelets oblong, 2-5 x 1-1.5 mm, slightly compressed, 5-10 flowered breaking up from above downwards, pale brown. Lower glume membranous, ovate-lanceolate, 0.8-1.2 x 0.4-0.5 mm, 1-nerved, 1-keeled; keels scaberulous, acute at apex. Upper glume membranous, ovate-lanceolate, 1-1.4 x 0.5-0.6 mm, 1-nerved, 1-keeled; keels scaberulous, acute at apex. Lemmas membranous, ovate, 1-1.4 x 0.5-0.6 mm, 3-nerved, obtuse at apex. Palea hyaline, obovate, 1-1.2 x 0.4-0.5 mm, 2-keeled; keels ciliate, obtuse at apex. Lodicules 2. Stamens 3; anthers upto 0.5 mm long. Caryopsis elliptic, upto 0.5 mm long.

Fls. & Frts: August to November.

Distribution: Jalgaon District.

Habitat : Occasional. Along the margins of hill slopes and in open grasslands.

Specimens examined: Jalgaon Dist. Chopda forest, TAK 124. Haripura, TAK 2004. Hatnoor dam, TAK 1912.

Note: Its subspiciform panicle makes it distinctive.

Eragrostis cumingii Steud. Syn. Pl. Glum. 1: 266. 1854; Bor, Grass. Bur. Cey. Ind. Pak. 507. 1960; Mohanan & Sreekumar in J. Eco. Tax. Bot. 3:447. 1982; Nair, Kerala Grasses, 380. 1991. *E. distans* Hack. In Philipp. Gov. Lab. Bull. 35. 81. 1906. Plate-I.

Perennial. Culms tufted, 10-50 cm tall, erect or ascending, slender; nodes glabrous. Leaves: sheath compressed, 2-5 cm long, glabrous, bearded at mouth; ligule a rim of silky hairs; blades linear-lanceolate, basal ones filiform, 4-15 X 0.2-0.3 cm, glabrous, or sparsely hairy, acuminate at apex. Panicles lax, 5-18 cm long, widely spreading; branches alternates, angular, sparsely villous and scabrid; rhachis angular, covered with sparsely tubercle based hairs; Pedicels scaberulous. Spikelets oblong-lanceolate, 2-10 x 1-2 mm, 5-20 flowered, breaking up from below upwards, greenish tinged with purple. Lower glume membranous, ovate-lanceolate, 1-1.3 X 0.2-0.4 mm, 1-nerved, acute at apex. Upper glume membranous, ovate-lanceolate, 1.2-1.8 x 0.4-0.7 mm, 1-nerved, acute at apex. Lemmas membranous, broadly ovate, 1.5-2 x 0.5-0.8 mm, 3-nerved, scabrid on the dorsal surface, subacute at apex. Palea hyaline, oblanceolate, slightly curved, 1-1.2 x 0.2-0.3 mm, 2-nerved, 2-keeled; keels minutely ciliate, obtuse at apex. Lodicules 2. Stamens 2; anthers upto 0.8 mm long. Caryopsis oblong-elliptic, upto 0.5 mm long, brown.

Fls. & Frts: August to December.

Distribution: Jalgaon district.

Habitat: Along the banks of streams, backwaters and canals.

Specimens examined: Jalgaon Dist. Patnadevi forest, TAK 305. Pal, TAK 754. Chopda forest, TAK 84. Langdaamba, TAK 1864.

Note: This species is closely allied to and often confusing with *E. zeylanica* but it differs from *E. zeylanica* by the spikelets with 5-20 flowers, lemmas 1.5-2 mm long, basal leaves filiform.

Eragrostis gangetica (Roxb.) Steud. Syn; Pl. Glum. 1: 266. 1854; Blatt. & McC. Bombay Grass. 236. 1935; Laxmi in Sharam *et al.* Fl. Maharashtra State Monocot. 484. 1996; Moulik, Grass. Bam. India 2: 602. 1997. Naik, Fl. Marathwada 2: 1036. 1998; Potdar *et al.* Grasses of Maharashtra 533. 2012. *Poa gangetica* Roxb. Fl. Ind. 1: 341. 1820. *Eragrostis stenophylla* Hochst. ex. Miq. in Verh Konink. Nederl. Inst 3, 4: 39. 1851; Stapf in Hook. f. Fl. Brit. Ind. 7: 318. 1896. Plate-I.

Annual. Culms tufted, terete, 20-70 cm tall, erect or ascending, slender; node glabrous. Leaves: sheath terete, 3-6 cm long, glabrous, bearded at mouth; ligule a rim of short hairs; blades flat or convolute, linear, 10-20 x 0.2-0.5 cm, glabrous, acuminate at apex. Panicles lax, 5-18 cm long; rhachis stiff, slender; branches filiform, scaberulous; pedicels capillary, flexuous. Spikelets oblong, 2-8 x 1-1.6 mm, 8-20 flowered, breaking up from below upwards, grey. Lower glume membranous, ovate-lanceolate, 1-1.2 x 0.1-0.2 mm, 1-nerved, keeled; keel scaberulous, acute at apex. Upper glume membranous, ovate-oblong, 1.2-1.6 x 0.2-0.3 mm, 1-nerved, keeled; keels scaberulous, acute at apex. Lemmas membranous, ovate, 1-1.5 x 0.4-0.5 mm, 3-nerved, subacute at apex, grey. Palea hyaline, obovate, persistent, 1-1.4 x 0.1-0.2 mm, 2-keeled; keels scabrid, obtuse at apex. Lodicules 2. Stamens 3; anthers upto 0.3 mm long. Caryopsis ovate, 0.4-0.6 x 0.2-0.3 mm, brown.

Fls. & Frts: September to January.

Distribution: In all districts of Khandesh.

Habitat: Frequent. Along the bank of river and moist soils along streams, dry river beds or around stagnated water.

Specimens examined: Jalgaon Dist. Haripura, TAK 1996; Dhule Dist. Kondaibari forest, TAK 1793; Nandurbar Dist. Toranmal, TAK 2203.

Note: This species is closely related to *E. nutans* from which it differ by the annual habit and effuse panicles. *E. gangetica* shows certain resemblance with *E. pilosa* but differs by its broader spikelets and grey lemmas without purple spots.

Eragrostis japonica (Thunb.) Trin. in Mem. Acad. Sci. Petersb. 6. 1: 405. 1831; Bor, Grass. Bur. Cey. Ind. Pak. 509. 1960; Potdar *et al.* Grasses of Maharashtra 533. 2012. *Poa japonica* Thunb. Fl. Jap, 51. 1784. *Eragrostis diarrhena* (Schuct.) Steud. Syn. Pl. Glum 1: 266. 1854, Bor, *op. cit.* 507. *E. diplachnoides* Steud. *op. cit.* 268; Bor, *op. cit.* 508. *E. interrupta* sensu Stapf in Hook f. Fl. Brit. Ind. 7: 316. 1896 non (R. Br.) P. Beauv. 1812; Blatt. & McC. Bombay Grass. 233. 1935. *E. interrupta* var. *diarrhena* (Schult.) Stapf in Hook. f. *op. cit.* *E. interrupta* var. *diplachnoides* (Steud.) Stapf in Hook.f. *op.cit.*; *E. interrupta* var. *koenigii* Stapf in Hook. f. *op.cit.*; Cooke, Fl. Presi. Bombay 3: 546. 1958 (Repr.ed.) *E. interrupta* var. *tenuissima* Stapf. in Hook f. *op. cit.* *E. namaquensis* Schrad var. *diplachnoides* (Steud.) Clayton in Kew Bull. 25: 251. 1971; Naik, Fl. Marathwada 2: 1038. 1998; Kshirsagar and Patil in Fl. Jalgaon Dist, Maharashtra 358. 2008. Plate-I.

Annual. Culms tufted, terete, 20-100 cm tall, erect, slender, simple or branched; nodes

glabrous. Leaves: sheath compressed, 5-10 cm long, glarous; ligule a rim of short hairs; blades flat or convolute, linear, 6-25 x 0.4- 0.6 cm, glabrous, finely acuminate at apex. Panicles lax, 15-30 cm long; rhachis slender glabrous; branches filiform, whorled; pedicels capillary, scaberulous. Spikelets ovate-elliptic, 1-1.7 x 1-1.2 mm, 3-7 flowered, reddish-purple, breaking up from above downwards. Lower glume membranous, ovate, 0.7-0.9 x 0.2-0.3mm, 1-nerved, 1-keeled; keels scaberulous, subacute at apex. Upper glume membranous, ovate, 0.7-0.9 x 0.2-0.3 mm, 1-nerved, 1-keeled; keel scaberulous, subacute at apex. Lemmas membranous, oblong, 0.7-0.9 x 0.2-0.3 mm, 3-nerved, tinged with purple, obtuse at apex. Palea hyaline, elliptic-obovate, 0.6-0.8 x 0.2-0.3 mm, 2-keeled; keels scabrid, obtuse at apex. Lodicules not seen. Stamens 2; anthers upto 0.3 mm long. Caryopsis elliptic, upto 0.5 mm long, reddish-brown.

Fls. & Frts: September to December.

Distribution: In all districts of Khandesh.

Habitat: Common. Along the bank of river, streams and a weed of cultivated fields.

Specimens examined: Jalgaon Dist. Ghodasgaon, TAK 1213; Dhule Dist. Panjara river, TAK 1818; Nandurbar Dist. Akkalkuva, TAK 350. Tapi river, TAK 2315.

Note: This is a highly polymorphic species with three main sources of variations like spikelet size, nature of panicle and keels of the paleas. The size and shape of panicles as well as spikelets very continuously similarly the keels of the paleas may either be smooth or scabrid.

Eragrostis minor Host. Gram. Austr. 4: 15. 1809; Stapf Hook. f. Fl. Brit. Ind. 7: 321. 1896; Cooke, Fl. Presi. Bombay 3: 548.1958 (Repr.ed.); Moulik, Grass. Bam. India 2: 604. 1997; Naik, Fl. Marathwada 2: 1038. 1998; Yadav & Sardesai in Fl. Kolhapur Dist. 580. 2002; Potdar *et al.* Grasses of Maharashtra 536. 2012. *E. poaeoides* P. Beauv. Ess. Agrost. 162. 1812; Bor, Grass. Bur. Cey. Ind. Pak. 512. 1960. *E. pappiana* Chiov. in Ann. Ist. Bot. Roma 8: 371. 1908; Bor, *op. cit.* 511; Naik, Fl. Marathwada 2: 1039. 1998. Plate-I.

Annual. Culms terete, densely tufted, slender, 20-80 cm tall, erect or geniculately ascending; node glabrous. Leaves; sheath terete, 3-6 cm long, glabrous, shortly bearded at mouth; ligule a rim of hairs; blades flat or convolute, linear, 5-20 x 0.3-0.6 cm, glabrous, acuminate at apex. Panicles lax, 5-30 cm long; rhachis glabrous; branches spreading when mature, yellowish at the base; pedicel shorter than the spikelet with or without yellowish bands.

Spikelets linear-oblong, 4-8 x 1.2- 1.5 mm, 5-15 flowered, breaking up from below upwards, pale green to olive grey. Lower glume membranous, ovate-lanceolate, 1.3-1.6 x 0.2 -0.3 mm, 1-nerved, keeled; keel scaberulous, acute at apex. Upper glume membranous, ovate-lanceolate, 1.7-2 x 0.4-0.6 mm, 1-nerved, acute at apex. Lemmas membranous, ovate-elliptic, 1.5-2 x 0.5-0.7 mm, 3-nerved, obtuse at apex. Palea hyaline, elliptic-oblong, 1.4-1.6 x 0.3- 0.4 mm, 2-nerved, 2-keeled; keels scabrid, acute at apex. Lodicules 2. Stamens 3; anthers upto 0.4 mm long. Caryopsis elliptic, upto 0.8 mm long, dark brown.

Fls. & Frts: Throughout the year.

Distribution: In all districts of Khandesh.

Habitat: Common. In open grasslands and weed in cultivated fields.

Specimens examined: Jalgaon Dist. Patnadevi, *TAK* 296. Manudevi, *TAK* 540; Dhule Dist. Charanmal, *TAK* 1807; Nandurbar Dist. Amlibari, *TAK* 2014.

Note: This is characterized by its lax panicle bearing scattered spikelets.

Eragrostis nutans (Retz.) Nees ex. Steud. Nom. Bot. Ed. 2, 563. 1840; Blatt. & McC. Bombay Grass. 277. 1935; Bor, Grass. Bur. Cey. Ind. Pak. 511. 1960; Laxmi in Sharma, *et al.* Fl. Maharashtra State Monocot. 485. 1996; Potdar *et al.* Grasses of Maharashtra 538. 2012. *Poa nutans* Retz. Obs. Bot. 4: 19. 1786. *Eragrostis elegantula* Nees ex. Steud. Syn. Pl. Glum. 1: 266. 1854; Stapf in Hook. f. Fl. Brit. Ind. 7: 318. 1896. Plate-I. "*Choti Khidi*"

Perennial. Culms tufted, terete, 10-50 cm tall, erect or geniculately ascending; nodes glabrous. Leaves: sheath terete, 2-5 cm long, glabrous; ligule a rim of hairs; blades convolute, linear 5-18 x 0.1-0.3, glabrous, acuminate at apex. Panicles lax, 3-10 cm long. Spikelets ovate-lanceolate, 5-7 x 1.4 -1.6 mm, 5-15 flowered, breaking up from below upwards, grey. Lower glume membranous, ovate, 1-1.4- 0.2-0.3 mm, 1-nerved, keeled; keel minutely ciliate, subacute at apex. Upper glume membranous, ovate-lanceolate, 1.4-1.6 x 0.4 -0.6 mm, 3-nerved, glabrous. Lower lemma membranous, broadly ovate-lanceolate, 1.5-1.8 x 0.4-0.6 mm, 3-nerved, glabrous, acute at apex. Palea hyaline, obovate, 1.4-1.6 x 0.2-0.3 mm, 2-nerved, 2-keeled; keels scaberulous, acute at apex. Stamens 3; anthers upto 0.7 mm long. Caryopsis elliptic, upto 0.6 mm long.

Fls. & Frts: September to December.

Distribution: Nandurbar district.

Habitat: Frequent. Along the margins of hills slopes and paddy fields.

Specimens examined: Nandurbar Dist. Pimpal khuta, *TAK* 1820. Kathi, *TAK* 1712. Toranmal, *TAK* 2439.

Note: It can be distinguished by its perennial habit, contracted, speciform panicle, upto 10 cm long and persistent palea.

Eragrostis pilosa (L.) P. Beauv. Ess. Agrost. 71. 162. 175, 1812; Stapf in Hook. f. fl. Brit. Ind. 7: 323. 1896; Cooke, Fl. Presi. Bombay 3: 550. 1958 (Repr.ed.); Blatt. & McC. Bombay Grass. 241. 1935; Bor, Grass. Bur. Cey. Ind. Pak. 512. 1960; Laxmi. in Sharma *et al.* Fl. Maharashtra State Monocot. 487. 1996; Moulik, Grass. Bam. India 2: 606. 1997; Naik, Fl. Marathwada 2: 1039. 1998; Kshirsagar and Patil in Fl. Jalgaon Dist, Maharashtra 358. 2008; Potdar *et al.* Grasses of Maharashtra 540. 2012. *Poa pilosa* L. Sp. Pl. 68. 1753. Plate-I. "*Burwai, Kutaki*"

Annual Culms tufted, terete, 30-100 cm tall, erect or geniculately ascending, simple or branched, slender; nodes glabrous. Leaves: sheath compressed, 3-10 cm long, glabrous, bearded at mouth; ligule a rim of short hairs; blades convolute, linear, 5-30 x 0.2 x 0.4 cm, glabrous, finely acuminate at apex. Panicles 10-30 cm long; rachis glabrous, filiform; branches fascicled or whorled, capillary, spreading; pedicles capillary, longer than spikelets. Spikelets linear-oblong, 3-5 x 1.2 -1.4 mm, 5-12 flowered, breaking up from below upwards, grey. Lower glume membranous, ovate-lanceolate, 0.4 -0.6 x 0.1-0.2 mm, 1-nerved, 1-keeled; keel smooth, acute at apex. Upper glume membranous, elliptic-ovate, 1-1.4 x 0.2-0.4 mm, 1-nerved, 1-keeled; keel smooth, subacute at apex. Lemmas membranous, elliptic ovate, 1.4 -1.6 x 0.4-0.5 mm, 3-nerved, subacute at apex. Palea hyaline, elliptic-obovate, 1.2-1.6 x 0.2- 0.3 mm, 2-keeled; keels smooth, obtuse at apex. Lodicules 2. Stamens 3; anthers upto 0.3 mm long. Caryopsis elliptic, upto 0.8 mm long.

Fls. & Frts: August to December.

Distribution: In all districts of Khandesh.

Habitat: Common. In open grasslands, along margins of ponds, in roadside ditches.

Specimens examined: Jalgaon Dist. Hatnoor Dam, *TAK* 2399, Patnadevi forest, *TAK* 1844; Dhule Dist. Borzar, *TAK* 1750; Nandurbar Dist. Tapi river, *TAK* 2161. Toranmal, *TAK* 1927.

Note: Its filiform loose panicle makes it peculiar.

Eragrostis riparia (Willd.) Nees, Agrost. Bras. 512. 1829; Grass, Bur. Cey. Ind. Pak. 513. 1960; Potdar *et al.* Grasses of Maharashtra 540. 2012. *Poa riparia* Willd. in Ges. Natur. Freunde Berlin. Neus Schriff. 4: 185. 1803. *Eragrostis tenella* var. *riparia* (Willd.) Stapf. in Hook. f. Fl. Brit. Ind. 7: 315. 1896; Cooke, Fl. Presi. Bombay Grass. 3: 545. 1958 (Repr.ed.); Blatt. & McC. Bombay Grass. 233. 1935. Plate-I. Perennial.



Eragrostis cilianensis (All.)



Eragrostis ciliaris (L.)



Eragrostis cumingii Stapf



Eragrostis gangetica (Roxb.)



Eragrostis japonica (Thumb.)



Eragrostis minor Host.



Eragrostis nutans (Retz.)



Eragrostis pilosa (L.)



Eragrostis riparia (Willd.)



Eragrostis tenella (L.)



Eragrostis tenuifolia Hochst.



Eragrostis unioloides (Retz.)

Plate - I

Culms densely tufted, terete, 10-50 cm tall; nodes glabrous. Leaves; sheath terete, 1-4 cm long, glabrous; ligule a rim of hairs; blades linear-lanceolate, 3-10 x 0.3-0.5 cm, glabrous, acuminate at apex. Panicles contracted, spiciform, 3-7 x 0.5 -1 cm. Spikelets crowded, ovate-elliptic, 2.8- 3 x 1.4-1.6 mm, 3-7 flowered. Lower glume membranous, ovate-lanceolate, 1-1.2 x 0.4- 0.5 mm, 1-nerved, 1-keeled; keel scaberulous, margins ciliate, subacute at apex. Upper glume membranous, ovate-lanceolate, 1.2-1.5 x 0.4-0.5mm, 1-nerved, 1-keeled; keel scaberulous, subacute at apex. Lemma membranous, ovate, 1.5-1.8 x 0.4-0.6 mm, 1-nerved, 1-keeled; keel scaberulous, margins ciliate, acute at apex. Palea membranous, obovate or oblanceolate, 1.2-1.4 x 0.3 -0.4 mm, 2-nerved, 2-

keeled, keels long ciliate, acute at apex. Lodicules 2. Stamens 3; anthers upto 0.5 mm long. Caryopsis elliptic, upto 0.6 mm long, brown.

Fls. & Frts: August to November.

Distribution: Nandurbar district.

Habitat: Occasional. Along the margins of hill slopes and streams.

Specimens examined: Nandurbar Dist. Toranmal, TAK 1676. Bhagdari, TAK 1797. Dab, TAK 2298.

Note: Its pink colored subcylindric contracted panicle makes it distinctive.

Eragrostis tenella (L.) P. Beauv. ex R. & S. Syst. Veg. 2: 576 . 1817; Laxmi in Sharam *et al.* Fl. Maharashtra State Monocot. 489. 1996; Moulik, Grass. Bam. India 2: 608. 1997; Kshirsagar and Patil in Fl. Jalgaon Dist, Maharashtra 358.

2008; Potdar *et al.* Grasses of Maharashtra 543. 2012. *Poa tenella* L. Sp. Pl. 69. 1753. *Eragrostis tenella* var. *breviculmis* Stapf in Hook. f. *op. cit.* 316. *Eragrostis tenella* var. *plumosa* (Retz.) Stapf in Hook. f. *op. cit.* 315; Cooke, Fl. Presi. Bombay 3: 545. 1958 (Repr.ed.); Blatt. & McC. *op. cit.* Plate-I. *Belakuda, Waya.*

Annual. Culms loosely tufted, terete, 10-50 cm tall, erect or geniculately ascending; nodes glabrous. Leaves: sheath terete, 2-5 cm long, glabrous, bearded with long hairs at mouth; ligule a rim of hairs; blades linear-lanceolate, 4-10 x 0.2- 0.5 cm, glabrous, acuminate at apex. Panicles effuse, 4-15 cm long; rachis bearded at nodes; branches capillary or filiform; pedicels shorter or longer than the spikelets. Spikelets ovate or ovate-oblong, 1.7-2.5 x 0.8-1.2 mm, 3-9 flowered, beaking up from above downwards. Lower glume membranous, ovate, 0.7-1 x 0.2 -0.3 mm, 1-nerved, keeled; keel scaberulous, acute at apex. Upper glume membranous, ovate, 1-1.3 x 0.3-0.4 mm, 1-nerved, 1-keeled; keel scaberulous, acute at apex. Lemmas membranous, obovate, 1-1.3 x 0.3 -0.4 mm, 3-nerved, 2-keeled, acute at apex. Palea membranous, obovate, 0.5-1 x 0.2-0.3 mm, 2-nerved, 2-keeled; keels ciliate, obtuse at apex. Lodicules 2. Stamens 3; anthers upto 0.4 mm long. Caryopsis elliptic, upto 0.5 mm long, pale to light brown.

Fls. & Frts: August to November.

Distribution: In all districts of Khandsh.

Habitat: Common. Along the roadsides, bunds of paddy fields and waste places.

Specimens examined: Jalgaon Dist. N. M. U. Campus, TAK 929. Bhusawal, TAK 548; Dhule city, TAK 1823; Nandurbar Dist. Taloda, TAK 1836.

Note: This species is closely related to *E. viscosa* but can be distinguished by the culms, leaves and inflorescence which are not viscous.

Eragrostis tenuifolia Hochst.ex Steud. Syn. Pl. Glum. 1: 268. 1854; Stapf in Hook, f. Fl. Brit. Ind. 7: 322. 1896; Cooke, Fl. Presi. Bombay 3: 549. 1958 (Redpr.ed.); Blatt. & McC. Bombay Grass. 240. 1935; Bor, Grass. Bur. Cey. Ind. Pak. 514. 1960; Laxmi in Sharma *et al.* Fl. Maharashtra State Monocot. 491. 1996; Moulik, Grass. Bam. India 2: 609. 1997; Naik, Fl. Marathwada 2: 1040. 1998; Yadav & Sardesai in Fl. Kolhapur Dist. 581. 2002; Potdar *et al.* Grasses of Maharashtra 545. 2012. Plate-I.

Perennial. Culms tufted, laterally compressed, 15-60 cm tall, erect or geniculately ascending, branched near the base; nodes glabrous. Leaves: sheath compressed, 2-10 cm long, glabrous; ligule a rim of hairs; blades convolute, linear-lanceolate, 5-25 x 0.2-0.6 cm, glabrous, acuminate at

apex. Panicles lax, 5-18 x 3-5 cm; rachis slender, glabrous; branches spreading, glabrous or hairy ; pedicels capillary with glandular bands. Spikelets linear-elliptic, 5-8 x 1-1.8 mm, 5-13 flowered, breaking up from below upwards, olive green or slaty-black; rachilla persistent. Lower glume membranous, ovate-lanceolate, 0.3-0.5 x 0.2-0.3 mm, 1-nerved acute at apex. Upper glume membranous, ovate-lanceolate, 0.7-1.2 x 0.4- 0.5 mm, 1-nerved, 1-keeled acute at apex. Lemma membranous, ovate-elliptic 1.8- 2 x 0.5- 0.6 mm, 3-nerved, keeled, acute at apex. Palea hyaline, oblong-obovate, 1.5 -1.8 x 0.2-0.3 mm, 2-nerved, 2-keeled; keels scabrid, obtuse at apex. Lodicules 2. Stamens 3; anthers upto 1 mm long. Caryopsis oblong upto 1 mm long.

Fls. & Frts: August to November.

Distribution: Nandurbar district.

Habitat: Occasional. Along the banks of canals, roadside, irrigated fields and in grasslands.

Specimens examined: Nandurbar Dist. Legapani, TAK 1899. Tapi river, TAK 2041. Yashwant lake, TAK 2445.

Note: The species is characterized by its slaty-black colored spikelets.

Eragrostis unioloides (Retz.) Nees ex Steud. Syn. Pl. Glum. 1: 264. 1854; Moulik, Grass. Bam. India 2: 609. 1997; Naik, Fl. Marathwada 2: 1041. 1998; Kshirsagar and Patil in Fl. Jalgaon Dist, Maharashtra 359. 2008; Potdar *et al.* Grasses of Maharashtra 547. 2012. *Poa unioloides* Retz. Obs. Bot. 5: 19. 1789. *Eragrostis amabilis* Stapf in Hook. f. Fl. Brit. India 7: 317. 1896 *non* Wt. & Arn ex Nees 1838; Cooke, Fl. Pres. Bombay 3: 546. 1958 (Repr.ed.). Plate-I.

Annual. Culms loosely tufted, terete, 10-40 cm tall, erect or geniculately ascending; nodes glabrous. Leaves: sheath compressed, 2-5 cm long, glabrous, mouth sparsely bearded or not; ligule a rim of hairs; blades linear-lanceolate, convolute, 5-20 x 0.2- 0.5 cm, glabrous or with few spreading hairs; acuminate at apex. Panicles lax, 5-20 cm long; rachis glabrous; branches alternate; pedicels slender. Spikelets ovate-oblong, compressed, 4-7 x 2-3.5 mm, 10-30 flowered, pale to redish purple, breaking up from below upwards. Lower glume membranous, ovate-lanceolate, 1-1.7 x 0.2-0.3 mm, 1-nerved, keeled; keel scaberulous, acuminate at apex. Upper glume membranous, ovate-lanceolate, 1-2 x 0.5-0.7 mm, 1-nerved, keeled glabrous, acuminate at apex. Lemma membranous, ovate, 1.6-2 x 0.5-0.6 mm, 3-nerved, glabrous, tinged with pink or purple, acute at apex. Palea hyaline, elliptic-lanceolate, 1.5-1.8 x 0.1-0.2 mm, 2-keeled; keel scabrid, acute at apex, falling off with Lemma.

Lodicules 2. Stamens 2; anthers upto 0.5 mm long. Caryopsis elliptic, upto 0.6 mm long, dark brown.

Fls. & Frts: August to December.

Distribution: In all districts of Khandsh.

Habitat: Frequent. Along the margins of ponds, rivers and in rice fields.

Specimens examined: Jalgaon Dist. Haripura, TAK 200. Unapdev, TAK 819; Dhule Dist. Pimpalner, TAK 213. Bozar, TAK 2401. Charanmal, TAK 2758; Nandurbar Dist. Toranmal, TAK 1245. Molgi, TAK 1029.

Note: It is similar to *E. cilianensis* where the spikelets are olive-green and the paleas are deciduous but diagnosed by its lax, purplish panicles and ovate spikelets.

Eragrostis viscosa (Retz.) Trin. in Mem. Acad. Sci. Petersh. 6, 1: 397. 1830; Blatt. & McC. Bombay Grass. 233. 1935; Bor, Grass. Bur.Cey.Ind. Pak. 515. 1960; Laxmi in Sharma *et al.* Fl. Maharashtra State Monocot. 493. 1996; Moulik, Grass. Bam. India 2: 611. 1997; Potdar *et al.* Grasses of Maharashtra 549. 2012. *Poa viscosa* Retz. Obs. Bot. 4: 20. 1786. *Eragrostis tenella* var. *viscosa* Stapf in Hook. f. Fl. Brit.Ind. 7: 315. 1896; Cooke, Fl. Presi. Bombay 3: 546. 1958 (Repr.ed.).

Annual. Culms tufted, terete, 10-50 cm tall, erect or geniculate, sweet-scented glandular, viscous; nodes glabrous. Leaves: sheath compressed, 2-5 cm tall, glandular, viscous, hairy at mouth; ligule a rim of hairs; blades flat linear-lanceolate, 3-10 x 0.2-0.5 cm, glabrous, acuminate at apex. Panicle lax, 7-20 cm long; rachis slender; pedicels capillary, scaberulous, viscous, glandular. Spikelets ovate-elliptic, 1.5-3.5 x 1-1.5 mm, 4-15 flowered, often purplish. Lower glume membranous, ovate-lanceolate, 0.7-1.2 x 0.2-0.3 mm, 1-nerved, 1-keeled; keel scaberulous, acute at apex. Upper glume membranous, ovate oblong, 1-1.2 x 0.2-0.3 mm, glabrous, 1-nerved, keeled; keel scaberulous, obtuse at apex. Lemma membranous, ovate-elliptic, 1-1.2 x 0.4-0.5 mm, glabrous, 3-nerved, keeled; keel scaberulous, rounded at apex. Palea hyaline, falcate, obovate, 0.8-1 x 0.2-0.3 mm, 2-keeled, keels ciliate, obtuse at apex. Lodicules 2. Stamens 3; anthers upto 0.2 mm long. Caryopsis elliptic, upto 0.6 mm long, Pale brown.

Fls. & Frts: September to December.

Distribution: In all districts of Khandesh.

Habitat: Along water courses, roadsides and wetlands, in cultivated fields.

Specimens examined: Jalgaon Dist. Padmalaya, TAK 844. Tapi river, TAK 817. M. J. College Campus, TAK 2630; Dhule city, TAK 609; Nandurbar Dist. Taloda, TAK 2254.

Note: This species is closely related to *E. tenella* but distinguished by the viscous culms, leaves and inflorescence.

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REFERENCES

- Blatter E and McCann C, 1935.** *The Bombay Grasses*. Sci. Monogr. Coun. Agric. Res. India. 229-242.
- Bor NL, 1960.** The Grasses of Burma, Ceylon, India and Pakistan. Press. Calcutta.495-516.
- Cooke T, 1958.** *The flora of the presidency of Bombay*. B.S.I Reprint, Calcutta, 3: 545-550.
- Hooker JD and Stapf O, 1896.** *Flora of British India*. Vol. 7, Gramineae. L. Reeve & Co., London.
- Lakshminarasimhan P, Sharma BD, Karthikeyan S & Singh NP, 1996.** *Flora of Maharashtra. (Monocotyledons)* BSI. Kolkotta. 479-493.
- Mohanan M & Sreekumar PV, 1982.** On the occurrence of *Eragrostis cumingii* Steud. (Poaceae) in India. *J. Econ. Tax. Bot.* 3: 447-448.
- Moulik S, 1997.** *The Grasses and bamboos of India*. Vols. 2. Scientific Publisher, Jodhapur. 598-611.
- Naik VN, 1998.** *The Flora of Marathwada Amruth Prakashan*. Aurangabad. Vol. 2. 975-1118.
- Nair, 1991.** Kerala Grasses. Botanical Survey of India, Culcutta. 29-445.
- Patil DA, 2003.** Flora of Dhule and Nadurbar District (Maharashtra) Bishan Singh Mahendra Pal Singh Deharadun, 628-649.
- Potdar GG, Salunkhe CB and Yadav SR, 2012.** Grasses of Maharashtra, Shivaji University, Kolhapur. 524-551.
- Khan TA, 2017.** Flowers of Jalgaon District A succinct field guide. Prashant publication Jalgaon in Association with Jalgaon Forest division Jalgaon, 119-126.
- Khan TA, 2019.** Wild Flowers of Jalgaon District: A Succinct Field Guide. Prashant Publication, Jalgaon, 118-123.

Kshirsagar SR and Patil DA, 2008. Flora of Jalgaon district, Maharashtra. Bishen Singh Mahendra Pal Singh, Dehradun, 357-360.

Yadav SR and Sardesai MM, 2002. In *Flora of Kolhapur District. Shivaji Univesity, Kolhapur (India)* 579-581.

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