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## A new species of *Ischaemum* (Poaceae) from Goa, India

Harshala S. Gad<sup>1</sup> & M. K. Janarthanam<sup>1</sup>

**Summary.** A new species of *Ischaemum* L. (Poaceae) from lateritic rocky plateau Goa, India, is described as *I. yadavii*. This species is similar to *I. santapau* Bor but differs in its crustaceous bulged, lower glume of sessile spikelet; dorsally humped, narrowly winged keel of upper glume of sessile spikelet; and well-developed pedicelled spikelet.

**Key words.** *Ischaemum yadavii*, Goa, India, lateritic plateau.

### Introduction

*Ischaemum* L., a tropical genus of about 65 species, is distributed worldwide with the greatest number of species in Asia (Clayton & Renvoize 1986). In India, the genus is represented by about 51 species (Karthikeyan *et al.* 1989, Sur 2001, Ravi *et al.* 2001, 2002), of which 13 are recorded from Goa (Rao 1986, Rajkumar *et al.* 1999, Joshi & Janarthanam 2004).

During a taxonomic study of family Poaceae in Goa state, the authors collected specimens of *Ischaemum* from one of the lateritic rocky plateaus. After critical study, the specimens have been identified as an undescribed taxon that is similar to *Ischaemum santapau* Bor. The new species is described and illustrated here.

### *Ischaemum yadavii* Harshala Gad & Janarth., sp. nov.

*Ischaemo santapau* similis, spiculae sessilis gluma inferiore crustaceo tumescenti, gluma superiore crista anguste alata dorsaliter gibbosa, spiculis pedicellatis bene evolutis differt. Typus: India, Goa, Surla, Harshala Gad & M. K. Janarthanam 240 (holotypus CAL; isotypi BSI, K, MH).

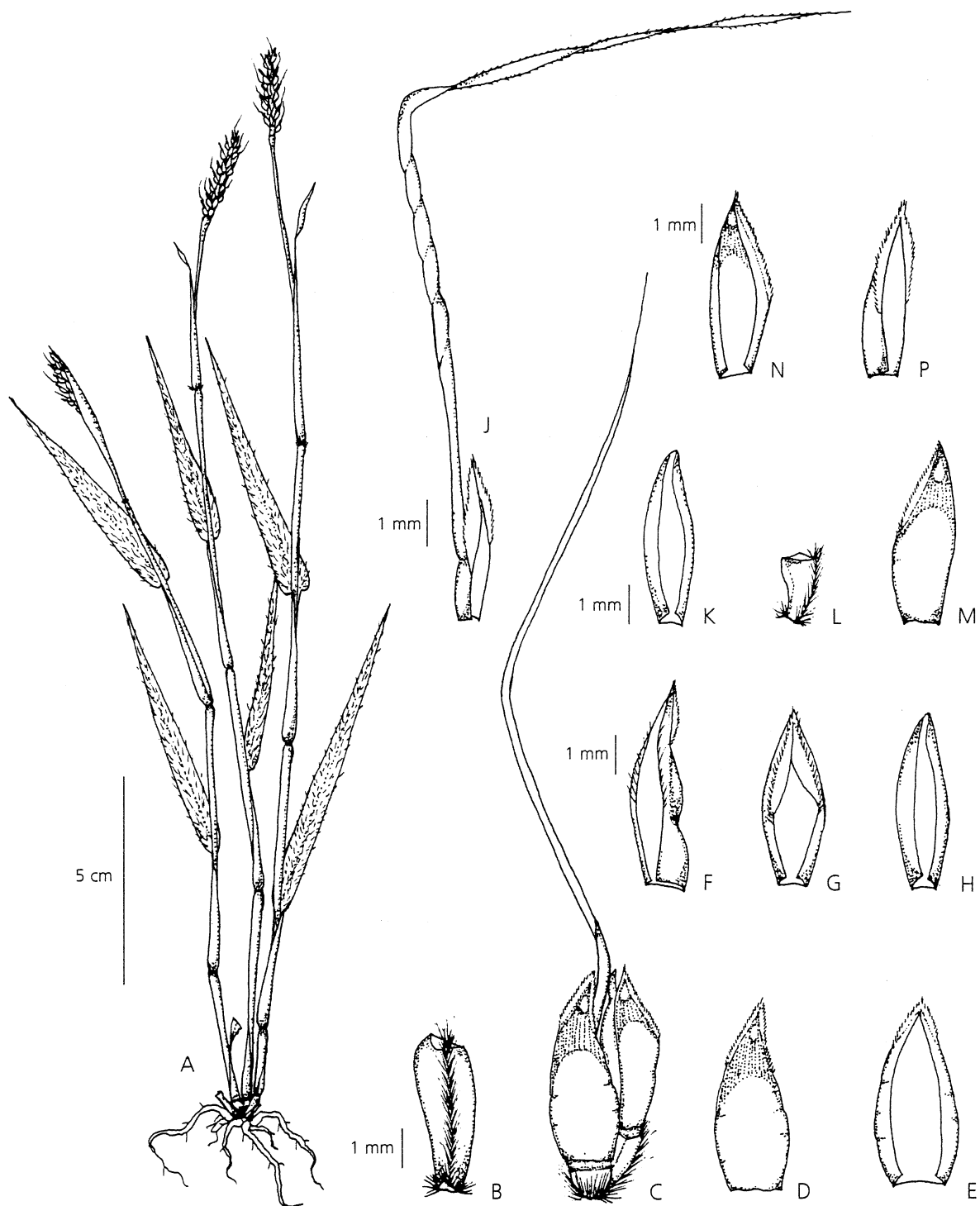
Annuals. Culms tufted, erect, up to 45 cm high; nodes villous to glabrous, dark brown, constricted in dry condition. Leaves all along the culm; sheath up to 5 cm long, rounded to slightly compressed, keeled on the back, glabrous to bulbous-pilose on outer surface towards the apex; ligule subcoriaceous, triangular-ovate, c. 5 mm long, 2-keeled on the back, subacute to obtuse at apex, bulbous-pilose nearer to the base on outer surface; blade linear to linear-lanceolate, up to 8.5 × 0.5 cm, narrowed at base in the lower ones,

rounded in the upper ones, acuminate at apex, sparsely bulbous-pilose on both surfaces. Inflorescence of two racemes, appressed, up to 3.5 cm long, shortly exerted from spatheolate sheath, disposed on 6.5 cm long peduncle, terete, swollen at apex, villous at base. Joints of rachis triquetrous, oblong-clavate, c. 3.5 mm long, crustaceous, tridentate at apex and ciliate on dorsal angle; hairs c. 1 mm long. Sessile spikelet, lower glume oblong-ovate, c. 5 × 2 mm, thickly crustaceous convex — bulged in the lower 3/4 region, herbaceous above, laterally keeled, incurved along margins, smooth shiny outside, 10–11-nerved; acute, hyaline at apex, keels thickened with obscure wrinkles in the lower 3/4 region, narrowly winged on one side near apex; wings serrulate. Upper glume boat-shaped, c. 5 × 2 mm, coriaceous, subacute at apex, 3–5-nerved, humped below middle, sharply keeled on back; keel shortly winged at apex; wings serrulate, margins incurved; shortly ciliate on incurved margins. Lower floret staminate. Lower lemma elliptic-lanceolate, c. 4.5 × 1.5 mm, subhyaline, acute at apex, 3-nerved, margins incurved below middle, narrowly winged at apex; wing hyaline, delicate, lacerate. Palea elliptic-lanceolate, c. 4 × 1.5 mm, subacute at apex, 2-nerved, 2-keeled, incurved along the nerves. Stamens 3; anthers c. 2 mm long, yellow; filaments very short. Upper floret bisexual. Upper lemma oblong-lanceolate, c. 4 × 2 mm, hyaline, cleft with acute lobes, awned in sinus, 3-nerved, winged on margins; wings hyaline, delicate, ciliate in apical region; awn up to 25 mm long, twisted, geniculate, with c. 11 mm long column, chestnut brown, scabrid. Palea oblong-lanceolate, c. 3 × 1 mm, hyaline, obtuse at apex, 2-nerved, margins infolded. Lodicules 2, denticulate, c. 1 × 0.5 mm. Stamens 3, anthers c. 1.5 mm long, yellow,

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**Fig. 1.** *Ischaemum yadavii*. **A** habit; **B** joint of rachis; **C** sessile and pedicelled spikelets; **D – K** sessile spikelet: **D** lower glume (dorsal view); **E** lower glume (ventral view); **F** upper glume; **G** lower lemma; **H** lower palea; **J** upper lemma; **K** upper palea; **L – P** pedicelled spikelet: **L** pedicel; **M** lower glume (dorsal view); **N** lower glume (ventral view); **P** upper glume. Drawn from *Harshala Gad & M. K. Janarthanam* 240. DRAWN BY HARSHALA GAD.

filaments short. Ovary oblong-lanceolate, c. 1 mm long; styles c. 2 mm long; stigma plumose, c. 1.5 mm long. Pedicelled spikelet obliquely oblong-elliptic, c. 4 × 1.5 mm, subacute at apex. Pedicel triquetrous, c. 1.5 mm long, crustaceous, densely pilose on dorsal angle. Lower glume obliquely oblong-elliptic, c. 4 × 1.5 mm, subacute at apex, subcrustaceous or coriaceous at lower half, herbaceous in apical region, 9-nerved, subacute, hyaline at apex, rounded on one side and straight on the other, laterally keeled with the keels sharply angled on one side and narrowly winged on the other near apex; wing serrulate along margin. Upper glume obliquely ovate c. 4 × 2 mm, chartaceous, 3-nerved, 1-keeled, subacute at apex, scabrid in apical region, margins winged at apex; wings hyaline. Lower and upper florets staminate. Lemmas and paleas same as sessile spikelet, upper lemma entire, unawned. Fig. 1.

**DISTRIBUTION.** INDIA. Goa. Surla, lateritic rocky plateau, 15°40'03.0"N and 74°10'28.0"E, ± 825 m above mean sea level, 2 Oct. 2005, *Harshala Gad & M. K. Janarthanam*, 240 (holotype CAL; isotypes BSI, K, MH).

**HABITAT.** The species is a component of open areas of lateritic rocky plateau.

**ETYMOLOGY.** The species is named after Prof. S. R. Yadav for his immense contribution to the field of plant taxonomy in the region.

**NOTE.** This annual species is known only from type locality.

*Ischaemum yadavii* is similar to *I. santapau* but differs in the crustaceous bulged lower glume of sessile spikelet, the dorsally humped, narrowly winged keel of the upper glume of the sessile spikelet and the well-developed pedicelled spikelet.

**Table 1.** Comparative account of *Ischaemum santapau* Bor and *I. yadavii*.

Characters	<i>Ischaemum santapau</i>	<i>Ischaemum</i> sp. nov.
Habit	Culms up to 2 m high, densely caespitose, stilt rooted at lower nodes.	Culms up to 45 cm high, tufted, not rooting at basal nodes.
Inflorescence	Racemes in fascicles, up to 7.5 cm long, divergent, well exerted from spatheolate sheath.	Racemes not in fascicles, up to 3.5 cm long, appressed, shortly exerted from spatheolate sheath.
Lower glume of sessile spikelet	Oblong, c. 4 × 1.75 mm, coriaceous, flat in the lower ¾ region, rounded smooth on margins.	Oblong-ovate, c. 5 × 2 mm, thickly crustaceous, convex — bulged in the lower ¾ region, obscure wrinkles on margins.
Upper glume of sessile spikelet	Rounded on back below middle, mucronate at apex.	Humped on back below middle, keel narrowly winged at apex, acute at tip.
Pedicelled spikelet	Rudimentary with rudimentary glume that is often scale-like at base.	Well developed, with well-developed glumes at the base of the inflorescence.

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