

138. SPOROBOLUS R. Brown, Prodr. 169. 1810.

鼠尾粟属 shu wei su shu

Wu Zhenlan (吴珍兰); Sylvia M. Phillips

Annuals or perennials, tufted or sometimes with creeping rhizomes or stolons. Leaf blades flat or rolled, linear to narrowly lanceolate; ligule a line of hairs. Inflorescence an open or contracted panicle, rarely spike-like. Spikelets with 1 floret, subterete, not compressed or keeled, glabrous; rachilla disarticulating above glumes; glumes usually shorter than lemma, unequal, membranous, deciduous or persistent, 1-veined or veinless, apex obtuse, acute or acuminate; lemma elliptic to narrowly ovate, thinly membranous, 1–3-veined, glabrous, rounded on back, awnless; palea equaling or shorter than lemma, depressed between veins and often splitting lengthways as grain grows. Stamens 2–3. Grain globose to ellipsoid, rounded or truncate, pericarp free, commonly swelling when wet and expelling the grain, which often adheres to spikelet apex. $x = 9, 12$.

About 160 species: tropics and subtropics, extending into warm-temperate regions; eight species (one introduced) in China.

Most species of this genus in China are fodder plants. The culms are used for weaving.

A specimen (*H. Y. Liang 64044*, US) collected from sandy soil near the seashore of Hainan appears to be *Sporobolus gloeocladus* Cope (Kew Bull. 47: 656. 1992), from SW Asia, and is presumably an introduction.

1a. Annual.

- 2a. Panicle linear, spike-like; lower margins of leaf blades pectinate with long tubercle-based bristles 1. *S. piliferus*
- 2b. Panicle ovate, open; lower margins of leaf blades not pectinate.
 - 3a. Panicle branches whorled; spikelets 1–1.4 mm 2. *S. coromandelianus*
 - 3b. Panicle branches not whorled; spikelets 0.8–1 mm 3. *S. tenuissimus*

1b. Perennial.

- 4a. Lower glume 2/3–4/5 spikelet length; upper glume as long as the spikelet; leaf blades involute to acicular, 3–11 cm.
 - 5a. Plant with long tough rhizomes; leaf blades stiff, pungent; panicle gray-green, dense, branches appressed 4. *S. virginicus*
 - 5b. Plant tufted; leaf blades linear-acicular; panicle purplish, slightly lax, branches slightly spreading 5. *S. hancei*
- 4b. Lower glume less than 1/2 spikelet length; upper glume 1/2–2/3 spikelet length; leaf blades linear, 15–50 cm.
 - 6a. Lowermost panicle branches whorled, glandular *S. gloeocladus* (see note above)
 - 6b. Lowermost panicle branches not whorled.
 - 7a. Panicle linear, dense, branches often appressed 6. *S. fertilis*
 - 7b. Panicle effuse or laxly contracted, branches spreading.
 - 8a. Panicle contracted, up to 5 cm wide, spikelets crowded; stamens usually 2 7. *S. diandrus*
 - 8b. Panicle up to 20 cm wide, spikelets scattered; stamens 3 8. *S. wallichii*

1. *Sporobolus piliferus* (Trinius) Kunth, Enum. Pl. 1: 211. 1833.

毛鼠尾粟 mao shu wei su

Vilfa pilifera Trinius, Gram. Unifl. Sesquifl. 157. 1824; *Agrostis japonica* Steudel; *Sporobolus japonicus* (Steudel) Maximowicz ex Rendle.

Annual. Culms tufted, slender, usually geniculate at base, 5–25 cm tall, branched. Leaf sheaths with long tubercle-based cilia; leaf blades narrowly lanceolate, flat or margins rolled when dry, 1.5–7 × 0.1–0.4 cm, thinly pilose on both surfaces, margins pectinate with long tubercle-based bristles especially near blade base; ligule ca. 0.5 mm. Panicle linear, spike-like, 1.5–8 × 0.3–0.7 cm; branches subverticillate, short, erect, mostly unbranched, spotted with small glands. Spikelets narrowly lanceolate-oblong, 2.4–3 mm, purplish brown; glumes acuminate; lower glume lanceolate, 1/2 spikelet length, veinless; upper glume oblong, as long as spikelet; lemma oblong, equaling upper glume, 1-veined or obscurely 3-veined, acute; palea equaling or shorter than lemma, broader, obtuse, easily splitting

longitudinally. Anthers 3, ca. 0.5 mm. Grain red-brown, elliptic, 0.8–1.4 mm, slightly laterally compressed, apex rounded. Fl. and fr. Apr–Sep. $2n = 36, 40$.

Open situations on moist ground, fields. Anhui, Jiangxi, Zhejiang [Bhutan, India, Japan, Korea, Malaysia, Nepal, Philippines; Africa].

2. *Sporobolus coromandelianus* (Retzius) Kunth, Révis. Gramin. 1: 68. 1829.

卡鲁满德鼠尾粟 ka lu man de shu wei su

Agrostis coromandeliana Retzius, Observ. Bot. 4: 19. 1786.

Annual. Culms loosely tufted, slender, ascending, 10–35 cm tall, branched. Leaf blades linear, flat, 3–10 × 0.2–0.5 cm, scaberulous, often with long scattered bristles, margins thickened, scabrid, sometimes with a few bristles but not pectinate, apex acute; ligule 0.4–1 mm. Panicle ovate, 2–7 cm; lowest primary branches whorled, succeeding branches subwhorled, lower 1/3–1/2 bare, a linear glandular patch on bare portion, spikelets borne on short 2–4-spiculate branchlets or directly on

primary branches. Spikelets gray, narrowly elliptic, 1–1.7 mm, usually scaberulous; lower glume ovate, 0.2–0.4 mm, veinless, obtuse; upper glume elliptic, as long as spikelet, 1-veined, acute; lemma elliptic, slightly shorter than upper glume, 1-veined, acute. Anthers 3, 0.2–0.4 mm. Grain obovate, 0.7–0.8 mm, apex rounded. $2n = 24, 36$.

Dry meadows with scattered trees; ca. 1000 m. Yunnan [Afghanistan, India, Indonesia (Java), Myanmar, New Guinea, Pakistan, Sri Lanka, Thailand; Africa, SW Asia; introduced in Australia].

3. *Sporobolus tenuissimus* (Martius ex Schrank) Kuntze, Revis. Gen. Pl. 3: 369. 1898.

热带鼠尾粟 re dai shu wei su

Panicum tenuissimum Martius ex Schrank, Denkschr. Königl.-Baier. Bot. Ges. Regensburg 2: 26. 1822.

Annual, delicate. Culms tufted, weak, 20–100 cm tall. Leaf sheaths glabrous; leaf blades linear, flat or folded, 5–20 × 0.2–0.5 cm, glabrous; ligule 0.2–0.3 mm. Panicle narrowly oblong, open, diffuse, 10–40 × 2–6 cm; lowest primary branches single or paired, branches capillary, lower 1/2 bare, secondary branches spreading. Spikelets gray or purplish, 0.8–1 mm, gaping at maturity; lower glume oblong, 0.1–0.4 mm, truncate-erose; upper glume ovate-oblong, 0.3–0.5 mm, subacute; lemma ovate, as long as spikelet, acute to obtuse. Anthers 3, 0.1–0.3 mm. Grain obovate. 0.4–0.7 mm, truncate. $2n = 12$.

Disturbed or cultivated places at low elevations, introduced. S Taiwan [native to tropical America; now widely adventive in warm parts of the world].

4. *Sporobolus virginicus* (Linnaeus) Kunth, Révis. Gramin. 1: 67. 1829.

盐地鼠尾粟 yan di shu wei su

Agrostis virginica Linnaeus, Sp. Pl. 1: 63. 1753; *Vilfa virginica* (Linnaeus) P. Beauvois.

Perennial with long, tough, yellowish rhizomes. Culms erect or decumbent, often fastigiate branched in upper part, 15–30 cm tall, 1–2 mm thick. Leaf sheaths tightly overlapping, loosely pubescent at mouth; leaf blades glaucous, stiff, distichous, flat at first, soon involute, 3–10 × 0.1–0.3 cm, adaxial surface scabrid, abaxial surface smooth, apex pungent; ligule ca. 0.2 mm. Panicle linear, spikelike, 3–10 × 0.4–1 cm; branches 0.5–1.5 cm, erect, appressed to rachis. Spikelets gray-green or greenish yellow, fusiform, 2.3–2.7 mm; glumes acute; lower glume lanceolate, 2/3–4/5 spikelet length, 1-veined; upper glume narrowly ovate, as long as spikelet, 1-veined; lemma broadly lanceolate, subequal to upper glume, midvein distinct, lateral veins obscure, obtuse; palea equaling lemma. Anthers 3, 1–1.5 mm. Grain subglobose, ca. 0.7 mm. Fl. and fr. Jun–Sep. $2n = 18$.

Sandy seashores, often below high tide mark. Fujian, Guangdong, Hainan, Taiwan, Zhejiang [India, Indonesia, Japan (Ryukyu Islands), Malaysia, Philippines, Sri Lanka, Thailand, Vietnam; tropics and subtropics].

This species is a good sand binder. It is widespread on seashores

and in inland, saline places in warm parts of both the Old and New Worlds.

5. *Sporobolus hancei* Rendle, J. Linn. Soc., Bot. 36: 387. 1904.

广州鼠尾粟 guang zhou shu wei su

Perennial. Culms tufted slender, erect, 10–50 cm tall, unbranched. Leaf sheaths laxly overlapping, glabrous or loosely ciliate at mouth; leaf blades narrowly linear and flat near ligule becoming involute toward apex, or acicular throughout, 3–12 cm × 0.5–2 mm, adaxial surface puberulous, abaxial surface glabrous; ligule very shortly hairy or obscure. Panicle laxly contracted to open, 4–12 × 0.5–1(–3) cm; branches verticillate or paired, 0.7–2 cm, suberect to spreading, spiculate to base; pedicels short, smooth or scabridulous. Spikelets glistening, thinly membranous, pale purplish, lanceolate, 2–2.5 mm; glumes slightly unequal; lower glume lanceolate, 2/3–3/4 spikelet length, veinless, apex acute or obtuse; upper glume ovate, as long as spikelet, 1-veined, acute; lemma ovate, as long as spikelet, 1-veined, acute; palea subequaling lemma. Anthers 3, 0.8–1 mm. Grain red-brown, elliptic-oblong, laterally compressed, ca. 1.5 mm. Fl. Mar–May.

Grassy hillsides, dry places on poor soil. Fujian, Guangdong, Guangxi, Jiangsu, Hainan, Taiwan [Japan (Ryukyu Islands)].

6. *Sporobolus fertilis* (Steudel) Clayton, Kew Bull. 19: 291. 1965.

鼠尾粟 shu wei su

Agrostis fertilis Steudel, Syn. Pl. Glumac. 1: 170. 1854; *Sporobolus elongatus* R. Brown var. *purpureosuffusus* Ohwi; *S. fertilis* (Steudel) Clayton var. *purpureosuffusus* (Ohwi) P. C. Keng & X. S. Shen; *S. indicus* (Linnaeus) R. Brown subsp. *purpureosuffusus* (Ohwi) T. Koyama; *S. indicus* var. *major* (Buse) Baaijens; *S. indicus* var. *purpureosuffusus* (Ohwi) T. Koyama.

Perennial. Culms densely tufted, erect, rigid, 25–100(–120) cm tall. Leaf sheaths glabrous but margin ciliolate, basal sheaths papery, lightly keeled; leaf blades linear, flat or involute, 15–50(–65) × 0.2–0.5 cm, glabrous or adaxial surface thinly pilose, tapering to a long filiform apex; ligule ca. 0.5 mm. Panicle linear, contracted to spikelike, often interrupted especially at base, 7–45 × 0.5–1.5 cm; branches 1–2.5(–5) cm, erect and appressed to main axis, or looser and narrowly ascending, densely spiculate throughout. Spikelets grayish or yellowish green, 1.7–2 mm; lower glume oblong, ca. 0.5 mm, veinless, apex truncate-erose; upper glume oblong-elliptic, 1/2–2/3 spikelet length, 1-veined, ± acute; lemma ovate, as long as spikelet, indistinctly 1(–3)-veined, acute. Anthers 3, 0.8–1 mm. Grain red-brown, obovate-elliptic, 0.9–1.2 mm, distinctly shorter than its lemma and palea, these gaping widely beyond its top, apex truncate. Fl. and fr. Mar–Dec. $2n = 36, 48, 54$.

Roadsides, field margins, grassy places on hill slopes, moist ground of mountain valleys. Anhui, Fujian, Gansu, Guangdong, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Bhutan, India, Indonesia, Japan, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka,

Thailand, Vietnam; occasionally introduced elsewhere].

This common and variable, perennial weed is distinguished by its contracted panicle and short glumes. The spikelets are frequently infected by a black smut fungus.

7. *Sporobolus diandrus* (Retzius) P. Beauvois, Ess. Agrostogr. 26. 1812.

双蕊鼠尾粟 shuang rui shu wei su

Agrostis diandra Retzius, Observ. Bot. 5: 19. 1788 [“1789”]; *A. elongata* var. *flaccida* Roth ex Roemer & Schultes; *Sporobolus indicus* var. *flaccidus* (Roth ex Roemer & Schultes) Veldkamp; *Vilfa diandra* (Retzius) Trinius; *V. retzii* Steudel, nom. illeg. superfl.

Perennial. Culms tufted, erect, 30–90 cm tall. Leaf sheaths glabrous but margin ciliate; leaf blades linear, usually involute, 5–30 × 0.2–0.3 cm, glabrous on both surfaces or adaxial surface distinctly pilose at base, tapering to a long filiform apex; ligule 0.2–0.3 mm. Panicle contracted or rather loose, 7–35 × 1.5–3.5 cm; branches 1.5–9 cm, ascending or obliquely spreading, loosely spiculate, often lower 1/3 bare. Spikelets silvery grayish or yellowish green, 1.4–1.7 mm; lower glume oblong, ca. 0.5 mm, veinless, truncate or obtuse; upper glume oblong-ovate, 1/2–2/3 spikelet length, obscurely 1-veined, acute or obtuse-erose; lemma ovate-oblong, as long as spikelet, indistinctly 1 (–3)-veined, acute to obtuse. Anthers 2(–3), 0.5–0.8 mm. Grain obovate to oblong, 0.6–0.9 mm, apex truncate. Fl. and fr. May–Aug. $2n = 24$.

Dry hill slopes, grassy fields, roadsides, beaches. Fujian, Guangdong, Guangxi, Guizhou, Sichuan, Taiwan, Yunnan [Bhutan, India, Indonesia, Japan (Ryukyu Islands), Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand; Australia].

Sporobolus diandrus and *S. fertilis* are elements of the polymorphic, pantropical species complex of *S. indicus* (Linnaeus) R. Brown. This complex includes a range of intergrading taxa encompassing chromosome numbers from $2n = 18$ to $2n = 54$. Due to the small differences between these taxa and the frequency of intermediates, they are sometimes regarded as varieties of a broadly defined *S. indicus*.

8. *Sporobolus wallichii* Munro ex Trimen, J. Bot. 27: 171. 1889.

瓦丽鼠尾粟 wa li shu wei su

Perennial. Culms tufted, erect or slightly geniculate, 90–120 cm tall. Leaf sheaths glabrous but margins ciliate upward; leaf blades linear, flat, up to 45 × 0.8 cm, glabrous, smooth or scaberulous, especially on adaxial surface, tapering to a long filiform apex; ligule ca. 0.5 mm. Panicle effuse, up to 45 × 20 cm; branches up to 10 cm, widely spreading with scattered spikelets. Spikelets grayish green, ca. 2 mm; lower glume elliptic-oblong, 0.5–0.75 mm, veinless, emarginate; upper glume elliptic, ca. 1/2 spikelet length, veinless, subobtuse; lemma lanceolate, as long as spikelet, very indistinctly veined, acuminate. Anthers 3, 0.8–1 mm. Grain obovate, ca. 1 mm, apex truncate. $2n = 24$.

Moist meadows; 400–1200 m. Yunnan [India, Myanmar, Sri Lanka, Thailand].

This is a robust species with a large, effuse panicle and short-glumed spikelets.

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