
狗尾草属  gou wei cao shu

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Annuals or perennials. Culms usually tufted, slender to robust or canelike. Leaf blades linear to lanceolate, sometimes plicate or narrowed to a false petiole; ligule ciliate from a membranous base. Inflorescence a panicle, dense and spikelike or open with the spikelets contracted around the tips of branches; spikelets (or some of them) subtended by one to several bristles which persist on the branches after the spikelets fall. Spikelets elliptic, plano-convex, sometimes gibbous, awnless, florets 2; glumes and lower lemma membranous to herbaceous; lower glume ovate from a clasping base, usually less than 1/2 spikelet length, 3–5-veined; upper glume half as long to equaling spikelet, several-veined; lower floret staminate or neuter, sometimes sulcate, its palea present, reduced or absent; upper lemma crustaceous, strongly convex, rugose, punctate or smooth, margins inrolled. x = 9.

About 130 species: tropics and subtropics, extending to warm-temperate regions of the world; 14 species (three endemic, one introduced) in China.

The bristles in the inflorescence represent modified branchlets. The genus includes pasture grasses, a cereal crop, and a few noxious weeds.

1a. Panicle open to contracted with obvious, spaced branches; spikelets usually subtended by a solitary bristle (some lacking a bristle, or rarely with up to 3).

2a. Leaf blades plicate, fusiform-lanceolate to linear-lanceolate, narrowed toward base.

3a. Leaf blades 2–7 cm wide; panicle branches up to 20 cm long; lower glume 1/3–1/2 spikelet length, usually acute to obtuse; lower lemma with narrow falcate apex, longer than upper lemma .......................... 1. S. palmifolia

3b. Leaf blades flat, not plicate, linear or linear-lanceolate, straight or rounded at base.

4a. Upper glume subequaling spikelet; only branch or branchlet tips extending into a bristle, rarely a solitary bristle below a few spikelets ................................................................. 3. S. yunnanensis

4b. Upper glume distinctly shorter than spikelet; most spikelets subtended by one or more bristles.

5a. Tufted annual; upper lemma coarsely rugose .......................................................... 4. S. intermedia

5b. Perennials, sometimes rhizomatous; upper lemma smooth or finely punctate-rugose.

6a. Plant tufted; bristles stiff, stout; lower floret usually staminate with well-developed palea ........ 5. S. forbesiana

6b. Plant with long scaly rhizomes; bristles slender; lower floret neuter with reduced palea.

7a. Spikelets elliptic; lower lemma equal to spikelet; upper lemma smooth, shiny .................. 6. S. chondracne

7b. Spikelets lanceolate; lower lemma slightly shorter than spikelet; upper lemma punctate-rugulose ................................................................. 7. S. guizhouensis

1b. Panicle densely spikelike with congested branchlets, sometimes lobed; spikelets subtended by several to many bristles.

8a. Each branchlet from the main axis with only one mature spikelet; upper glume up to 1/2 as long as spikelet, upper floret clearly exposed.

9a. Spikelets (2.2–)2.5–3.5 mm; lower floret often staminate, its palea ovate, as wide as upper floret; upper lemma coarsely rugose ................................................................. 8. S. pumila

9b. Spikelets 1.8–2.3(–2.5) mm; lower floret neuter, its palea lanceolate, much narrower than upper floret; upper lemma finely rugose ................................................................. 9. S. parviflora

8b. Each branchlet from the main axis with several mature spikelets; upper glume 2/3 as long to equaling spikelet.

10a. Upper glume 2/3–3/4 length of fertile floret, upper lemma exposed above it; spikelets 2.8–3 mm, acute .... 10. S. faberi

10b. Upper glume subequaling fertile floret, almost completely covering upper lemma; spikelets 2–2.5(–3) mm, usually obtuse.

11a. Upper floret falling free from the glumes and lower lemma at maturity; cultivated plant ............... 11. S. italic a

11b. Upper floret retained within spikelet, this falling whole; wild plants.

12a. Bristles retrorsely scabrous ................................................................. 14. S. verticillata

12b. Bristles antrorsely scabrous.

13a. Spikelets 2–2.5 mm; lower glume 1/4–1/3 as long as the spikelet, usually obtuse ............... 12. S. viridis

13b. Spikelets 2.5–3 mm; lower glume ca. 1/2 as long as the spikelet, acuminate ............................ 13. S. arenaria


186, 1914.
**Panigicm palmifolium** J. König, Naturforscher 23: 208. 1788 ['palmæfoliæ'; *Chamaeraphis palmifolia* Kunze; *Chaetochloa palmifolia* Hitchcock & Chase; *Panicum neurodes* Schultes; *P. palmifolium* Willdenow ex Poiret (1816), not J. König (1788); *P. plicatum* Willdenow (1809), not Lamarrck (1791).

Perennial from a short knotty rhizome. Culms erect or slightly geniculate, 75–200 cm tall, 3–7(–10) mm in diam. Leaf sheaths usually sparsely hirsute, margins tuberculate-ciliate near ligule, otherwise glabrous; leaf blades fusiform-lanceolate, plicate, 20–60 × 2–7 cm, glabrous or hirsute, narrowed toward base, apex acuminate; ligule 2–3 mm, ciliate. Panicle 20–60 × 2–10 cm, branches up to 20 cm, laxly spreading, flexuous, some spikelets subtended by a single 5–15 mm bristle. Spikelets broadly lanceolate, 3–4 mm, acute; lower glume triangular-ovate, 1/3–1/2 as long as spikelet, obtuse to truncate; upper glume as long as or slightly shorter than lower floret, 5–7–veined, obtuse to acute; upper lemma longer than lower floret, nearly distinct from lower floret, either a) usually distinctly rugose or b) smooth, usually on its own. Besides the key characters, *S. plicata* has a more distinctly rugose upper floret and shows a greater tendency to develop anthers in the lower floret.

1a. Upper lemma distinctly rugose ............ 2a. var. *plicata*  
1b. Upper lemma nearly smooth, shiny ........ 2b. var. *leviflora*

2a. *Setaria plicata* var. *plicata*  

This species is used for food and medicine.

**皱叶狗尾草** zhou ye gou wei cao  
Perennial from a knotty rootstock. Culms loosely tufted, erect or decumbent, 45–130 cm tall, up to 6 mm in diam. Leaf sheaths ± papillose-pilose, margins usually ciliate; leaf blades narrowly lanceolate, plicate, thin, 10–30–4 1–3 cm, papillose-pilose, hirsipulose or glabrous, narrowed toward base, apex attenuate; ligule ca. 3 mm, ciliate. Panicle 15–33 cm, branches up to 8 cm, loose, ascending, some spikelets subtended by a single 5–15 mm bristle. Spikelets ovate-oblong, 3–4 mm, acute; glumes with broad papery margins; lower glume ovate-elliptic, 1/4–1/3 as long as spikelet, obtuse to truncate; upper glume 1/2–3/4 as long as spikelet, 5–7–veined, obtuse or acute; lower lemma staminate or neuter, usually equaling upper floret, 5–veined; lower lemma often well developed; upper lemma usually distinctly rugose, rarely smooth, apiculate. Fl. and fr. Jun–Oct. 2n = 36.

Open forests, valleys, moist roadsides. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [India, Indochina, Japan, Malaysia, Nepal, Thailand].

*Setaria plicata* is a more slender species than *S. palmifolia*, with a narrower panicle of shorter branches. However, the two species intergrade and must be separated by a combination of characters, as none is reliable on its own. Besides the key characters, *S. plicata* usually has a more distinctly rugose upper floret and shows a greater tendency to develop anthers in the lower floret.

**云南狗尾草** yun nan gou wei cao  
Annual. Culms rather slender, ca. 70 cm tall, ca. 1.5 mm in diam., nodes pubescent. Leaf sheaths glabrous or papillose-pilose, margins ciliate; leaf blades linear-lanceolate, thin, 3–14 × 0.4–1.2 cm, papillose-pilose on both surfaces, narrowed toward base, apex acuminate. Panicle open, 4–17 × 0.5–3 cm, branches ascending, simple or the lowermost with secondary branchlets, every branchlet tip extended into a 1–8 mm bristle, rarely a few spikelets also subtended by a single bristle; axis scabrous to ciliolate along the edges. Spikelets ovate-lanceolate to elliptic, 2.4–2.6 mm, yellowish green or tinged purple; lower glume triangular, 1/3 as long as spikelet, 1–3–veined, acute or obtuse; upper glume as long as or slightly shorter than spikelet, 5–veined, acute or obtuse; lower lemma as long as spikelet, subpapery, 3–5–veined, acute; upper lemma as long as lower, finely punctate-rugose. Fl. and fr. Jun–Oct.
• Roadsides, streams, coniferous forests; 2300–3900 m. Sichuan, Xizang, Yunnan.

This species, with a bristle only at the branch tips, is close to *Paspalidium*. The bristles are very inconspicuous when they are shorter than the spikelets.


**汉文狗尾草** jian xu gou wei cao

*Panicum tomentosum* Roxburgh; *Setaria tomentosa* (Roxburgh) Kunth.

Annual. Culms slender, geniculate at base and rooting from nodes, up to 60 cm tall, glabrous. Leaf sheaths usually lower, longer glabrous and smooth, upper papillose-pilose, margins densely ciliate especially at mouth; leaf blades broadly linear, thin, 10–35 × 0.6–1 cm, papillose-hispid along the main veins, apex acuminate; ligule densely ciliate. Panicle contracted, narrowly lanceolate, 10–17 × 1–1.5 cm, lowest branches 1.5–2 cm, spikelets subtended by 1–2(–3 or more) bristles; axis scabrous to puberulous; bristles 3–10 mm, stiff. Spikelets elliptic-ovate, 1.5–2 mm, acute; plumes thin, submembranous; lower glume broadly ovate, 1/3–1/2 as long as spikelet, acute; upper glume as long as spikelet, 5-veined; lower floret usually neuter; lower palea as long as lemma; upper lemma orange-brown at maturity, dorsally strongly convex, rugose. Fl. and fr. Jul.

Roadsides, fields. Yunnan [Bhutan, India, Japan, Myanmar, Russia, Sri Lanka; E. Africa].

This weedy annual is recognized by its sprawling, tufted habit and coarsely rugose, orange-brown fertile floret. The spikelets are usually subtended only by a single bristle, but there are many aborted spikelets in the panicle, giving the appearance of more bristles below each fully developed spikelet.


**西南莩草** xian fu cao, *Setaria tomentosa* (Roxburgh)


**西南莩草** (原变种) xi nan fu cao (yu an bian zhong)


**短刺西南莩草** duan ci xi nan fu cao

Spikelet subtended by a slender bristle of equal length or only slightly longer. Lower floret usually neuter. Lower palea shorter than lower lemma, narrow. Fl. and fr. Jul.–Oct.

Roadsides. Guizhou.


**莩草** fu cao

*Panicum chondrachne* Steudel, Syn. Pl. Glumac. 1: 51. 1853; *Chaetochloa chondrachne* (Steudel) Honda; *C. matsumurae* (Matsumura) Keng; *Panicum matsumurae* Hackel; *Setaria matsumurae* Hackel ex Matsumura.

Perennial with slender rhizomes clothed in imbricate, ovate, appressed-pubescent scales. Culms slender, ascending, 60–170 cm tall, glabrous. Leaf sheaths glabrous, long licate along margins and at mouth; leaf blades linear-lanceolate, 5–38 × 0.5–2 cm, glabrous or rarely papillose-pilose, base rounded, margins scabrous, apex attenuate; ligule ca. 0.5 mm, densely ciliate. Panicle open, linear to narrowly pyramidal, 12–30 cm, slightly nodding, branches spaced, stiffly spreading, lowest 1–2.5(–5) cm, most spikelets subtended by a single bristle; axis scabrous, sometimes also hispid; bristles 4–10 mm. Spikelets plumply elliptic, ca. 3 mm, acute; lower glume ovate 1/3–1/2 as long as spikelet, acute; upper glume 3/4 as long as spikelet, 5–7–9–veined; lower floret stamineate, as long as upper floret; lower lemma 5–7–9–veined; lower palea narrowly lanceolate, shorter than its lemma; upper lemma finally light brown, smooth, shiny, acute. Fl. and fr. Aug.–Oct. 2n = 36.

Woodlands, moist mountain slopes, roadsides. Anhui, Guangxi, Guizhou, Henan, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang [Japan, Korea].

This is a distinctive species on account of its long, scaly rhizomes, elongate, narrow panicle, and smooth, shiny fertile floret.

贵州狗尾草 gui zhou gou wei cao

Perennial with scaly rhizomes. Culms erect, 37 cm or more tall, nodes usually hairy. Leaf sheaths papilllse-pilose dorsally and along margins, but nearly glabrous toward ligule; leaf blades linear-lanceolate, 10–15 × 0.4–0.6 cm, scabrous on both surfaces, base subrounded, apex acuminate; ligule ca. 1.5 mm. Panicle linear, 11–35 cm, branches spaced, very short, apressed to axis, spikelets subtended by 1 or 2 slightly flexuous bristles; axis pubescent to pilose. Spikelets elliptic-lanceolate, ca. 2.5 mm, acute; lower glume triangular-ovate, 1/3 as long as spikelet, acute; upper glume broadly ovate, ca. 1.5 mm, acute; lower lemma hardened and rugose like the upper lemma. This is a rare variant, known from Fujian and Yunnan and also from Korea. Hardening of the lower floret is known to occur occasionally in other genera of Paniceae.

This species is cultivated for forage.


齒狗尾草 you gou wei cao

Cenchrus parviflorus Poiret in Lamarck, Encycl. 6: 52. 1804; Chaetochloa geniculata (Poiret) Millsap & Chase; Panicum geniculatum Poiret; P. pallidefascium Schumacher; P. rubiginosum Steudel; Setaria glauca (Linnaeus) P. Beauvois var. pallidefascia (Schumacher) T. Koyama; S. gracilis Kunth; S. pallidefascia (Schumacher) Stapf & C. E. Hubbard.

Annual or short-lived perennial with basal buds or a short knotty rhizome. Culms erect or geniculate, 20–90 cm tall. Leaf sheaths keeled, glabrous; leaf blades stiff, flat or involute, 5–30 × 0.2–0.8 cm, glabrous or adaxial surface pilose at base, apex acuminate; ligule ca. 1 mm. Panicle densely cylindrical, 2–15 × 0.5–1.2 cm; branches reduced to a single mature spikelet subtended by 8–12 bristles; axis pubescent; bristles golden or purplish brown when mature, 2–3 times spikelet length. Spikelets elliptic, 1.8–2.5 mm; lower glume ovate, 1/3 as long as spikelet, acute; upper glume broadly ovate, ca. 1/2 as long as spikelet, obtuse; lower floret neuter; lower pala glabrous; lanceolate, about as long as the upper floret but narrower, keels wingless, minutely papillose; upper lemma ovate-elliptic, finely rugose. Fl. and fr. Oct. 2n = 72.

Mountain slopes, roadsides, waste places. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan [throughout the tropics and subtropics].

Forms with perennating basal buds persisting for more than one season are sometimes separated as a different species, but there are no other distinguishing features and this character is probably of little significance. Specimens lacking basal parts become impossible to assign to species. However, if they are separated, Setaria parviflora is the cor-
The perennial form of *Setaria parviflora* has been known as *S. geniculatum* P. Beauvois, but that name was based not on *Panicum geniculatum* Poiret (1798), as has been widely supposed, but on *P. geniculatum* Willdenow (1809), which applies to a different species.

This species is a forage grass and is used medicinally.


*大狗尾草 da gou wei cao*

*Setaria autumnalis* Ohwi.

Annual. Culms solitary, erect or geniculate and rooting at the lowermost nodes, 50–120 cm tall, up to 6 mm in diam., glabrous. Leaves all cauline; leaf sheaths ciliate on upper margins; leaf blades broadly linear, 10–40 × 0.5–2 cm, glabrous or adaxial surface with scattered hairs, narrowed to base, apex acuminate; ligule 1–2 mm. Spikelets densely cylindrical, 5–24 × 0.6–1.3 cm, nodding, branchlets bearing several spikelets each subtended by 1–3 bristles; axis white-pilose; bristles green or acuminate; ligule 1–2 mm. Panicle densely cylindrical, 5–24 × 0.5–5 cm, very variable, hairiness of the panicle, color of the grain, and length of the bristles. It is also a useful forage grass. It is thought to be derived from *Setaria viridis*.


*狗尾草 gou wei cao*

Annual. Culms tufted, erect or geniculate, up to 70(–150) cm tall, 3–7 mm in diam. Leaf sheaths glabrous to papillos-pilose, margins densely ciliate; leaf blades linear to linear-lanceolate, flat, glabrous or papillos-pilose on both surfaces, base subrounded or subtruncate, margins scabrous, apex acuminate; ligule 1–2 mm. Panicle dense, usually cylindrical, usually tapering upward, 1–24 cm, erect or slightly nodding, branchlets bearing several spikelets each subtended by 3–7(–25) bristles; axis pilose or pubescent; bristles green, brown or purple, 4–12 mm. Spikelets elliptic-oblong, 2.5–3(–5) mm, obtuse; lower glume 1/4–1/3 as long as spikelet, obtuse or rarely acute; upper glume elliptic, as long as spikelet, lower lemma equal to spikelet; lower palea about 1/3 as long as lemma; upper lemma pale green, oblong, finely punctate-rugose, obtuse. Fl. and fr. May–Oct. 2n = 18.

This grass (Foxtail Millet) has been cultivated as a cereal in China since ancient times and exists in many races differing in size, shape, and character of the panicle, color of the grain, and length of the bristles. It is also a useful forage grass. It is thought to be derived from *Setaria viridis*.
Heynhold; *S. weinmannii* Roemer & Schultes.

Culms branching at base, up to 70 cm tall. Leaf blades broadly linear, 5–20 × 0.2–1.8 cm. Panicle cylindrical, 2–12 × 0.4–1.3 cm; bristles below the spikelet 3–7, green, yellowish brown, purplish red or purple, 4–12 mm. Spikelets livid-green, 2–2.5 mm. Fl. and fr. May–Oct. 2n = 18.

Mountain slopes, roadsides, grassy waste places. Distribution as for species [temperate and subtropical regions of the Old World; introduced elsewhere].

This is a cosmopolitan annual weed of warm-temperate regions.


巨大狗尾草 ju da gou wei cao


Culms little branched at base, 60–150 cm tall. Leaf blades 15–40 × 1–2.5 cm, glabrous on both surfaces. Panicle sometimes lobed, 7–24 × 1.5–2.5 cm; bristles green, brownish or purplish, 7–12 mm. Spikelets 2.5–3 mm. Fl. and fr. Jun–Oct. Roadsides, forest margins, a crop weed, especially in *Setaria italica* fields; below 2700 m. Gansu, Guizhou, Hebei, Heilongjiang, Hong Kong, Hubei, Hunan, Jilin, Nei Mongol, Shaanxi, Sichuan, Xinjiang [Japan, Russia; C and SW Asia, C and S Europe, North America].

This robust form of *Setaria viridis* may be of hybrid origin, resulting from crossing with *S. italica*. Unlike *Setaria italica*, the spikelets are shed whole.


厚穗狗尾草 hou sui gou wei cao


Culms usually decumbent at base, much branched, 5–25 cm tall. Leaf sheaths densely tuberculate-pilose in the lower part; leaf blades narrowly lanceolate, stiff, 1.5–5 × 0.2–0.4 cm, glabrous but scabrous on both surfaces. Panicle ovate or elliptic, 1–4 cm; bristles below spikelet 10–25, very dense, green, yellow, or purple, 6–8 mm. Spikelets 2–2.5 mm.

Sand and pebbles of the seashore. Guangdong, Taiwan [Japan, Korea].

This is a maritime form characterized by its low, branching habit and short, broad, densely bristly panicle.


倒刺狗尾草 dao ci gou wei cao

*Panicum verticillatum* Linnaeus, Sp. Pl., ed. 2, 1: 82. 1762; *Chaetochloa brevispica* Scribner & Merrill; *C. verticillata* (Linnaeus) Scribner; *Chamaeraphis italica* (Linnaeus) Kuntze var. *verticillata* (Linnaeus) Kuntze; *C. verticillata* (Linnaeus) Porter; *Panicum asperum* Lamarck; *Pennisetum verticillatum* (Linnaeus) R. Brown; *Setaria brevispica* (Scribner & Merrill) K. Schumann.

Annual. Culms tufted, much branched, ascending, 20–100 cm tall, glabrous. Leaf sheaths thin, glabrous or papillose-pub-
erulous, margins ciliolate; leaf blades broadly linear, flaccid, 5–20 × 0.4–1.8 cm, usually glabrous, base subrounded, margins scabrous, apex long acuminate; ligule 0.5–1 mm. Panicle densely spikelike, or lobed with short lateral branches on vigorous specimens, 4–15 cm, spikelets subtended by 1–4 bristles; axis shortly hispidulous; bristles green or brownish, 3–8 mm, retrorsely barbed and often becoming entangled. Spikelets elliptic, 1.8–2.4 mm, green with obvious darker veins, obtuse; lower glume 1/3–1/2 as long as spikelet, obtuse; upper glume boat-shaped, as long as spikelet, 7-veined; lower floret neuter; lower palea much reduced; upper lemma dorsally compressed, finely rugose. Fl. and fr. Jun–Sep. 2n = 18, 36.

Roadsides, open weedy places; 300–1000 m. Nei Mongol, Taiwan, Yunnan [tropical and warm-temperate regions of the Old World; introduced in America].

This is an easy species to recognize because of its clinging, retrorsely barbed bristles.