

Vascular Plants of Williamson County
Bouteloua hirsuta – HAIRY GRAMA [Poaceae]

Bouteloua hirsuta Lag., HAIRY GRAMA. Perennial herb, fibrous-rooted, many-stemmed at base, principal shoots not branched above base, in range 15–60 cm tall; shoots with several basal leaves having blades (the lowest scalelike ca. 2 mm long) and 2–4 cauline leaves, axes somewhat jointed at nodes (geniculate), having some long, stiff, straight hairs with an enlarged, nipplelike bases (pustulate). **Stems:** somewhat compressed on 2 sides and concave on a third side, to 1 mm diameter, smooth or slightly ridged approaching node with microhairs along ridges, densely puberulent at sheath-node junction; internodes solid to hollow. **Leaves:** alternate distichous, simple with sheath; prophyll conspicuous among basal shoots, open, conspicuously keeled, to 13 mm long, tough (chartaceous), concave between keels distinct to rounded tip, the keels 0.35–0.4 mm wide and margins 1 mm wide, sheath open, mostly ridged, to 50 mm long, often aging divergent from stem and appearing bladelike 2.5–3.5 mm wide (flattened) with membranous margins, mostly short-hairy between ridges (to 12-ribbed), without lobes (auricles) at top; ligules roundish and short-hairy, 0.25–0.5 mm long; collar short and indistinct, sometimes with pustulate on margins; blade linear, to $230 \times < 1.5$ –2.5 mm, the longest = a basal leaf, minutely toothed on margins and on many leaves ciliate with long pustulate hairs near the blade base or along margins, long-tapered at tip, parallel-veined with veins raised on both surfaces, having microhairs along veins, especially cauline leaving having straight hairs on surfaces either straddling midrib or more abundant in furrows between veins. **Inflorescence:** spikelets on lateral branches, 24–53+ tightly arranged en echelon in 2 parallel rows on lower side of rachis (pectinate), the branches 1–4 with internodes 20–30 mm spaced apart, widely spreading to ascending-spreading, 15–42 mm long, spikelets sessile, ca. 4.5 mm long \perp rachilla changing gradually reclined at end of rachis, with upper glumes on outer side, with a lower, sterile bisexual floret and 1–2 oddly structured, rudimentary, neuter florets terminal on the rachilla, bracteate, mostly with 7 fully visible awns per spikelet + concealed inner (lower) glume; peduncle of lateral branch hemicylindric flat on upper side, 2–3 mm long, canescent on lower side and densely hirsute on upper side having hairs to 0.7 mm long; rachis flat with grooves on outer side ca. 0.7 mm wide, lower side 2-channeled (winglike) where spikelets arise within channels, each row having 13–14 spikelets/10 mm, the 2 rows overlapping along center line, exposed surfaces \pm puberulent, having a tuft of stiff hairs at base of each spikelet, the terminal portion of rachis beyond the uppermost spikelets acuminate and 5–10.5 mm long, rachis and extension red-purple, extension often with several longer stiff hairs; stalked florets. **Spikelet:** lacking symmetry, breaking above persistent glumes; **glumes** 2, dimorphic, lower glume concealed on inner side, linear-folded (keeled) mostly 1.5 – 1.8×0.4 – 0.6 mm (flattened) sometimes incl. short terminal awn, weakly scabrous along keel and short-ciliate on membranous margins, upper glume keeled-ovate and awn-tipped, 2.5–3.5 mm long incl. awn < 1 mm long, outer (lower) surface having stiff hairs 1–2 mm long radiating from purple, nipplelike bases (pustulate hairs) straddling keel in 2 rows, the awns sometimes with hairs < 1 mm long, sides often purplish with silica cells; rachilla resting between keels of lower palea, ascending, cylindric, 1–1.2 mm long, pale green, glabrate to puberulent lacking a tuft of longer hairs at top. **Lower floret:** sessile, **lemma** keeled, unequally 3-lobed, and 3-

awned, the body with raised veins on outer (lower) surface, mostly 3.2–4.5 mm long, greenish and short-hirsute; **palea** 2-keeled and 2-veined ovate (boat-shaped) arching toward the outer side of the spikelet, ca. 3.5 mm long, membranous margins to 0.7 mm wide, with a pair of awnlike points (vein extensions) or lacking at top, veins green or red-purple, deeply folded between keels, with several short hairs at base and sparsely short-ciliate along keels approaching tip. **Bisexual flower:** **perianth (lodicules)** 2, somewhat wedge-shaped, ca. 0.3 mm long, colorless, not swollen at base; **stamens** 3, free, exerted and pendent, enlarging anthers forcing lemma and palea to develop spread; filaments ca. 1.2 mm long for pollination elongating and threadlike, pale yellow; anthers dorsifixed, dithecal, exerted, in range 1.7–2.5 mm long, pale green to pale yellow, longitudinally dehiscent; pollen pale to light yellow; **pistil** 1, 2–2.2 mm long; ovary superior, obovoid, 0.3–0.35 mm long, colorless aging greenish, glabrous, 1-chambered with 1 ovule; styles 2 fully exposed at pollination (palea spreading from lemma), colorless, touching or slightly fused at base, above bottlebrushlike and aging greenish nearly base-to-tip. **Rudimentary floret:** flower absent; **lemma** at top of rachilla 2-lobed with a set of 3 ascending awns, the lobes obovate to fan-shaped, in range ca. 1 mm long, green and membranous or tinged purple-red, minutely jagged on outer margins, the awns 2–3.5 mm long, 1-veined to tip, flattened (narrowly winged) to midpoint and awnlike above; **palea** absent; of second rudimentary floret having diminutive lemma lobes and lacking awns. **Fruit:** achene (caryopsis), obovoid, ca. 1.7 × 1 mm, brown, early abscised with short stalk from spikelet.

A. C. Gibson