

## Vascular Plants of Williamson County

*Aristata purpurea* var. *purpurea* – PURPLE THREEAWN [Poaceae]

*Aristata purpurea* Nutt. var. *purpurea*, PURPLE THREEAWN. Perennial herb, bunchgrass, inconspicuously rhizomatous (“without rhizome”), fibrous-rooted, many-stemmed at base, cespitose and densely tufted, not branched above base, in range to 45 cm tall; shoots with to 2 basal leaves with blades and to 5 cauline leaves widely spaced, the lower basal leaves with sheath > slender and soon a tightly inrolled blade, essentially glabrous but with tuft of silky hairs to 2.5 mm long at collar, not glaucous, shoot portion not scabrous to touch; rhizome horizontal and short (cespitose plant with several–many separated rhizome segments, with very short internodes, rhizome body concealed by leaf sheaths, prophylls, and cataphylls, with closely spaced shoots, cylindric, 1 mm diameter, solid, cataphylls appressed to rhizome, broadly acute, papery aging brownish; adventitious roots only several per rhizome segment, ca. 1 mm diameter, aging by core separating from cortical shell. **Stems:** cylindric, to 1.3 mm diameter, wiry, internodes to 120 mm long, with minute, upward-pointing teeth above the flag leaf; internodes solid. **Leaves:** alternate distichous, simple with sheath; prophyll 2-folded, 2-keeled, mostly 8–10 × 3 mm, white (not pigmented), the keels to 0.3 mm wide and densely short-ciliate, between keels aging flat, margins to 1.6 mm wide; sheath open but margins strongly overlapping > 360° from top to base with wide membranous margins to 0.5 mm wide, with green veins aging whitish, inconspicuously ridged drying ridged but not fibrous, lacking lobes (auricles) at top; collar to 1 mm wide, hairs on margin to 1.5 mm long; ligule truncate, = a dense line of short hairs (membranous and thick short-ciliate), mostly 0.30–0.35(–0.5) mm long; blade narrowly linear and inrolled upward when stressed, < 50–220 × 1–1.8 mm, gray-green, minutely scabrous on margins, fine at tip, parallel-veined typically with several veins strongly raised on upper surface, upper surface puberulent along veins, lower surface with microhairs along veins and minute dots (silica bodies) in cells next to each vein.

**Inflorescence:** spikelets, in a wispy, flexible terminal panicle, the panicle slender with appressed branches and spikelets until fruiting, in outline mostly to 250 × 3–5 mm, appearing red-purple, flexible branches with to 10 spikelets at the lowest node, not nodding or with pendent branchlets and lacking pulvinus at each node or junction, primary branches arising alternate distichous from nodes along rachis, the longest to 70 mm long including awns, branches per node generally 2 or more, some of those forking and the longest having to 5 forks each with a terminal spikelet, spikelet with 1 bisexual flower, axes green and scabrous along ridges and edges, awned with 3 awns from a common stalk (“beak”); rachis hemicylindric to 7-ridged on rounded on lower side, to 0.6 mm wide, flexible, scabrous along edges, ridged also on upper side; branch axes appressed to main axis above node, 3-angled, 0.2–0.25 mm diameter, green, 1–several-forked and lacking axillary pulvinus at all forks, the largest with < 10 spikelets, from a fork secondary branchlets 1.5–5 mm long, axes and nodes glabrous; bracts lacking except of spikelet. branchlet axes appressed to rachis, slender and 3-angled, 0.1–0.15 mm diameter, green, 1–several-forked, from a fork secondary branchlets 1.5–5 mm long. **Spikelet:** linear long-tapered from base to awn, the body in range 11–12 mm long and 3-awned (not abscising), breaking below glumes; **glumes** 2, unequal and keeled, keels green and scabrous often purplish tinged and minutely speckled, lower glume keeled base-to-tip or keeled from below midpoint and rounded (not folded), in range 7–9 mm × 0.7 mm (flattened), acute at top with or without an awnlike tip

(excurrent midvein), lacking an oblique crease at base, membranous tissue minutely dotted (silica bodies); upper glume keeled base-to-tip or rounded on back with keel scarcely formed approaching tip, in range 8–12 mm long, upper glume > lower glume (upper/lower > 0.5), with an awnlike tip < 0.5 mm long, purplish red with the tip lobes colorless; callus 0.4–1.4 mm long, appearing tufted-ciliate along 2 dense lines of hirsute hairs to 1 mm long; **lemma** inrolled appearing tubular (conduplicate), tough and somewhat leathery (chartaceous), finely textured, with overlapping membranous margins, with lower axis of awn at top (“beak”); body in range 10–12 mm long and < upper glume, finely 3-veined, tinged greenish or purplish, surface having minute teeth in lines, body tip 0.15–0.2 mm diameter junction indistinguishable from base of scabrous awn, the scabrous beak 3–4 mm long and the beak counterclockwise 90° twisted exerted from upper glume, initially green or aging purplish red, forming a set of 3 subequal awns in range (15–)23–29 mm long, ca. 0.1 mm thick, initially straight and red-purple drying brown and widely divergent; **palea** membranous, ± elliptic, 1–3 mm long, weakly 2-veined. **Flower:** cleistogamous; **perianth (lodicules)** 2, elliptic nearly flat, 0.8–1.2 mm long, colorless and with veins; **stamens** 3, free, included; filaments 1–1.5 mm long, translucent; anthers dorsifixed near midpoint, dithecal, mostly 1.4–1.8 mm long, crimson or rose-red to red-purple and light green, longitudinally dehiscent; pollen purplish; **pistil** 1, ± 2.3 mm long, included in lemma; ovary superior, ellipsoid-lanceoloid, 0.7–0.8 × 0.2–0.25 mm, greenish and translucent, glabrous, 1-chambered with 1 ovule; styles 2, arising at top of ovary with bases touching, 1–1.5 mm long, translucent but stigmatic upper portion at level of anthers, ascending-papillate, aging red. **Fruit:** achene (caryopsis), dispersed fully enclosed in lower lemma with palea, fusiform, 5.5–6 × 0.35 mm, tannish; awns of lemma 3 from top of lemma beak, beak to 4 mm long, awns ca. 25 mm long.

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