

Vascular Plants of Williamson County
Chloris verticillata – TUMBLE WINDMILLGRASS [Poaceae]

Chloris verticillata Nutt., TUMBLE WINDMILLGRASS. Perennial herb, fibrous-rooted, several-stemmed at base, branches mostly decumbent with ascending flowering shoots, in range to 45 cm tall; shoots with several basal leaves and to 3 cauline leaves, nearly glabrous (several hairs only at leaf blade bases). **Stems:** cylindrical, to 3 mm diameter, nodes crimson or aging brown; internodes solid with white core. **Leaves:** alternate distichous, simple with sheath; sheath folded, finely low-ridged, typically lacking hairs with minute bumps along ridges; ligules \pm truncate, membranous and short-ciliate, in range 0.7–1.3 mm long; collar often triangular in side view to 2 mm long on upper side, outer surface sometimes with several pilose hairs to 3 mm long; blade strongly folded upward, in range 33–180 \times 3–5 mm (flattened), the widest near base, minutely toothed and scabrous on margins and along midrib, long-tapered to tip, parallel-veined with fine veins raised on both surfaces, with minute bumps along veins. **Inflorescence:** spikelets, on terminal, paniclelike array with spikelike lateral branches, branches with alternate distichous, sessile spikelets arranged on lower side, in range 20–23, the lower 5+ widely spreading or horizontal to somewhat deflexed in a pseudowhorl, others in 1–2 pseudowhorl and alternate, the uppermost branch aging vertical, with spikelets having 2 florets, the lower floret bisexual, the upper floret sterile, bracteate, awned; peduncle mostly elongating after pollination, glabrous but with a skirt of pilose hairs below the lowermost branches; primary rachis suberect, internodes unequal, strongly ridged with 1 ridge descending from a branch, the ridges scabrous; branches 50–110 mm long, pulvinus conspicuous at base mostly axillary, red, densely pilose and short-pilose, often 50+ spikelets along axis regularly spaced ca. 3 mm apart, axis slightly sinusoidal, ca. 0.3 mm diameter, tough, angled, glabrous and ridges scabrous. **Spikelet:** wedge-shaped in outline, with unequal awns on 2 lemmas, not breaking (remaining within floret bracts) but often also disseminated when peduncle breaks and entire inflorescence wind-borne; **glumes** 2, unequal, diverging, strongly folded and keeled, minutely scabrous on keel base to tip (teeth purplish), 1-veined and vein green, lower glume asymmetrically folded, ca. 2 mm long, ovate on hidden side and ca. 0.7 mm wide, lanceolate and 0.4 mm wide on exposed side, tissue purplish; upper glume symmetrically folded, ca. 2.8 mm long and 0.4 mm wide on each side, scabrous along vein except at base, with awnlike tip; **lower floret lemma** folded, each side elliptic notched at top, side ca. 2 \times 1.5 mm, > upper glume, with 3 widely spaced, green veins, the midvein ending at base of awn, the lateral veins close to margins and pubescent outside the veins (not ciliate on margin) often with some purple pigment, the lobes deltate and the sinus < 0.5 mm deep, with awn from sinus with tiny purplish projections, the awn mostly somewhat wavy, to 4.5 mm long having upward-pointing, purplish barbs, **palea** membranous, ca. 2 mm long, slightly < lemma, widely 2-veined folded along veins, short-ciliate along veins; rachilla ca. 0.7 mm long, green; **upper floret lemma** appearing concave-truncate and strongly rounded, in outline inversely deltate notched at top, 1.2–1.5 mm, with green veins and upper margin purplish (minute projections) rolled over top, the awn from notch, slightly wavy and 1.5–2.5 mm long, < awn of lower lemma, the midvein ending at base of awn, the lateral veins widely separated at base but each 2-forked at midpoint and inner vein branch converging next to base of awn; **palea** absent. **Flower** (lower floret); **perianth (lodicules)** 2, obovate, 0.25–0.3 \times 0.15 mm, translucent; **stamens**

3, free, with anthers exserted at top of spikelet; filaments threadlike, 2.5–3 mm long, whitish; anthers dorsifixed, dithecal, 0.5–0.6 mm long, ± red, longitudinally dehiscent; pollen colorless; **pistil** 1, ca. 2.2 mm long, with exserted, widely spreading stigma at or slightly below midpoint of spikelet; ovary superior, obovoid, 0.4 × 0.25 mm, pale greenish, glabrous, 1-chambered with 1 ovule; styles 2, separated at base, lower portion 0.5–0.6 mm long, colorless, stigmas bottlebrushlike, 1–1.2 mm long, purple-red. **Fruit:** achene (caryopsis) of lower floret, obovoid slightly 3-angled, 1–1.25 × 0.3–0.35 mm + persistent styles, tannish.

A. C. Gibson