

**Vascular Plants of Williamson County**  
*Echinochloa esculenta* – JAPANESE MILLET [Poaceae]

*Echinochloa esculenta* (A. Braun) H. Scholtz, JAPANESE MILLET (tuftgrass selection)  
Perennial herb, ± rhizomatous (ill-defined), fibrous-rooted, several-stemmed at base, mat-forming, decumbent to procumbent, in range to 10 cm tall; shoots with several basal leaves and to 4 cauline leaves, each shoot < 30 cm long, appearing glabrous; rhizome obscured by leafy bases of shoots; adventitious roots at base of each shoot on rhizome and nodes of basal leaves. **Stems (culms):** elliptic in ×-section, to 4 mm diameter, tough, internodes < 65 mm long, glabrous; internodes spongy-solid but not hollow. **Leaves:** alternate distichous, simple with sheath; prophyll at base of shoot strongly 2-keeled with deep trough between keels, to 12 mm long mm long, open, long-tapered to tip, sparsely short-toothed along keels; sheath open, folded, without lobes (auricles) at top, mostly glabrous, just above node basal leaves short-strigose with upward-pointing hairs, rarely with a hair on margin next to collar; ligule absent; collar white to pinkish, with 0–several stiff long hairs having nipplelike base < 2 mm long (pustulate); blade folded later flat, in range mostly 60–100 × 6–8 mm, the widest near midblade, sparsely minutely toothed on margins approaching tip, long-tapered at tip, parallel-veined with broad midrib raised on lower surface, surfaces glabrous totally lacking pustulate hairs, lower surface with minute teeth along midrib. **Inflorescence:** spikelets, in terminal panicle, in range to 70 mm long fully exposed above sheath of flag leaf with blade ≤ panicle, panicle of 3–7 spaced, widely spreading branches and lacking branchlets, in range the branches < 16 × 5 mm, each branch with several–45 closely arranged spikelets appearing in ± 4 rows on only 1 side of branch, spikelets short-stalked fused mostly as pairs (clusters of 3) and pairs alternating along branch axis on outer face of branch, spikelet having 2 florets, lower floret sterile and upper floret bisexual, bracteate, pubescent, in range lacking awns; bract subtending panicle leaflike with sheath and blade, of the lowest node blade to 300 mm long decreasing upward; panicle axis 3-ridged, green, weakly wavy, mostly not scabrous along edges and with raised veins on faces, nodes scabrous and with several hispid hairs; branch axes 3-angled scabrous along ridges with occasional hispid hair or hairs at base of each spikelet stalks; spikelet stalks of pairs unequal, 0.4–1.5 mm long, puberulent with 1–several pustulate hispid hairs to 1.5 mm long, having a ring of enlarged cells at place where spikelike abscises forming a white, saucerlike structure. **Spikelet:** ± obovoid, in range 2–2.5 × 1.2–1.3 mm, breaking below glumes; **glumes** 2, unequal and dimorphic; lower glume sheathing spikelet base, ovate, ± 1.5 mm long, acute with short point at tip, 3-veined and colorless (tinged purplish), the veins green and raised with lateral veins arching toward midvein below tip and most often fused, puberulent, short-ciliate on margin at least to midpoint, sometimes with a short bristly hair along a lateral vein; upper glume broadly boatlike and obovate, 2–2.2 mm long, inrolled on margins, typically 7-veined, puberulent between veins, short-bristly along veins, midvein somewhat keeled; **lemma** of lower floret broadly elliptic, ca. 2 mm long, acute at tip, greenish with raised veins on back, faintly 7-veined (3 green and visible approaching tip), short-ciliate on margins above midpoint, minutely jagged and silvery at tip, puberulent between veins, short-bristly along veins, inrolled on margins; **palea** of lower floret broadly elliptic (unfolded) and ± ovate 2-folded ca. 1.7 × 0.65 mm, membranous, 2-keeled with 2 fine green veins, short-ciliate along keels,

± truncate and short-ciliate at top persistent; **lemma** of upper floret boatlike strongly cupped, ovate, ca. 2 mm long slightly < upper glume, faintly 2-veined or 5-veined, acute at tip, mostly glabrous but minutely hairy at papery tip, with margins clasping palea, at anthesis greenish and ± leathery becoming whitish and hard in fruit; **palea** of upper floret ovate, ca. 1.5 mm long and < lemma, flat with inrolled margins, at anthesis greenish and ± leathery becoming whitish and hard in fruit, veins obscure, glabrous. **Flower** (upper floret): bisexual; **perianth (lodicules)** 2, at anthesis fleshy and fan-shaped, ca. 0.3 mm long, length < width, translucent-colorless; **stamens** 3, free, with anthers exerted at top of palea and spikelet; filaments threadlike, ca. 2.5 mm long, white; anthers exerted, basifixed, dithecal, ca. 0.5 mm long, light red-purple and whitish, longitudinally dehiscent; pollen white; **pistil** 1, ca. 1.5 mm long; ovary superior, compressed-ovoid, 0.3–0.4 mm long, glossy translucent-colorless, glabrous, 1-chambered with 1 ovule; styles 2, stigmatic portion exerted above midpoint of lemma, lower portion in colorless, exerted upper portion feathery (plumose) and stigmatic, ca. 0.8 mm long, red-purple.] **Fruit:** achene (caryopsis), firmly enclosed by hard, glossy whitish lemma and palea, the unit hemi-ellipsoid, 1.6–1.8 × 1.4 mm, at maturity finely 3-veined, concealing white, ellipsoid achene ca. 1.3 mm long.

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