

Vascular Plants of Williamson County
Avena sativa – CULTIVATED OATS [Poaceae]

Avena sativa L., CULTIVATED OATS. Annual, robust, fibrous-rooted, several-stemmed at the base, not rosetted, unbranched above base, erect, in range 40–75 cm tall; shoots with only cauline leaves, foliage scabrous, glabrous. **Stems (culms):** cylindrical, to 6.5 mm diameter (nodes), green, glabrous or several hairs on upper edge of node; internodes hollow and relatively weak. **Leaves:** alternate distichous, simple with sheath; sheath open but tightly overlapping most of length, to 150 mm long and > length, smooth to low-ridged with a ridge descending from blade midrib; ligule membranous, broadly obtuse, in range 2.5–4 mm long, irregularly jagged and sparsely fringed on margin; blade linear, in range 80–300 × (3–)10–15 mm, the widest near base, flat, minutely toothed on margins base-to-tip, long-tapered to tip, parallel-veined with well-defined midrib raised on lower surface and all veins raised on both surfaces, upper surface scabrous along veins. **Inflorescence:** spikelet, in terminal panicles, panicle 130–260 mm long, initially somewhat compact becoming open and somewhat spreading in fruit with 15–50+ nodding spikelets, often appearing 1-sided, bracteate, somewhat scabrous, in range lacking awns; first node of panicle often concealed by sheath of flag leaf; main axis finely striped; at first node having a whitish collar to 0.8 mm long subtending branches; branches alternate distichous along main axis, branches and stalks to 10 at the lowest node of different diameters, with long internodes and the first internode cylindrical and in range to 80 mm long, branches and stalks at each node decreasing upward, sharply flexuous branches and branchlets + stalked spikelets, the uppermost nodes only having a stalked spikelet, the principal branches ascending, to 130 mm long; axes of branches and branchlets to 0.5 mm diameter, tough and wiry, ridged and the most slender several-angled, short-scabrous along ridges and edges; stalk of spikelet 2–3-angled, in range to 40 mm long, green; below glumes with a terminal turnip-shaped swelling 1.5–2 mm diameter, the swelling in range essentially glabrous. **Spikelet:** narrowly fusiform before anthesis, gaping to 75° when in flower, in range of 2 bisexual florets + 1 sterile upper floret and rudimentary, not breaking from glumes; **glumes** 2, subequal, ovate rounded on back, in range 18–21 mm long, > florets, upper glume > lower glume ± 1 mm, membranous with green veins, in range (7–)9-veined, glabrous; rachilla strongly flattened side-to-side, first internode ca. 2.5 mm long and white, of second internode slender to 3.5 mm long, with lemma and palea spreading at anthesis, in range basal callus with several hairs to 3.5 mm long; **lemma** of fertile floret in range not awned, 13–15 mm long decreasing upward, rounded on back to above midpoint and with 5 raised veins approaching tip, membranous aging stiffer and with green veins and greenish tissue where exposed above midpoint, the green veins short-scabrous, minutely scabrous on margins above midpoint, often short-forked at tip with teeth 0.2–0.5 mm long; lemma of sterile floret to 8.5 mm long, 5-veined; **palea** of fertile floret in range to 12 mm long, < lemma, 2-veined, 2-keeled and strongly folded, membranous with green veins not at tip, keel conspicuously densely short-ciliate nearly base-to-tip (to 0.3 mm long), short 2-forked or not at colorless tip, minutely scabrous approaching tip, with wide membranous margins; palea of sterile floret to 8 mm long. **Flower:** bisexual; **perianth (lodicules)** 2, in range teardrop-shaped with bulbous base and flat tip, 1.5–2 × ± 0.6 mm, translucent with colorless tips; **stamens** 3, free; filaments threadlike, to 8 mm long,

colorless; anthers basifixed, dithecal, in range 3–3.4 mm long, pale yellow, longitudinally dehiscent; pollen pale yellow; **pistil** 1; ovary superior, in range broadly cone, $\pm 0.5 \times 1$ mm, whitish, flattened on 1 face later forming groove, top with ring of colorless, ascending straight hairs 1–1.5 mm long, 1-chambered with 1 ovule; styles 2, widely spaced on tip of ovary and erect to ascending, ca. 2 mm long, colorless, villous with stigmatic hairs. **Fruit:** achene (caryopsis), tightly enclosed in lemma and palea, ellipsoid compressed front-to-back, in range $5\text{--}6.5 \times 2\text{--}2.5$ mm, whitish, with deep longitudinal groove on side facing palea, sericeous and with upward-pointing hairs and a conspicuous tuft of hairs at tip; lemma and palea straw-colored, with persistent rachilla segment.

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