

Avena sativa L., CULTIVATED OATS. Annual, robust, fibrous-rooted, 1–several-stemmed at the base, unbranched above base, erect, in range 40–120 cm tall; shoots scabrous. **Stems (culms):** cylindrical, to 6.5 mm diameter, striped green and white, glabrous; internodes hollow and relatively weak. **Leaves:** alternate distichous, simple with sheath; sheath open but tightly overlapping most of length, with many low ridges and 1 conspicuous ridge descending from blade midrib; ligule membranous, broadly obtuse, 3–9 mm long, irregularly jagged and sparsely fringed on margin; blade linear, 80–590 × (3–)10–31 mm, the widest approaching midpoint, flat, dark green with whitish veins, minutely toothed on margins base-to-tip, parallel-veined with well-defined midrib on lower surface nearly to tip, scabrous along veins. **Inflorescence:** spikelet, in terminal panicles, panicle 130–300 mm long, initially somewhat compact becoming open and somewhat spreading in fruit with 15–50+ nodding spikelets, often appearing 1-sided, bracteate, somewhat scabrous, awned or lacking awns; first node of panicle often concealed by sheath of flag leaf; main axis finely striped; branches along main axis several per node and alternate distichous, with long internodes, each node with several sharply flexuous branches and branchlets + stalked spikelets, the principal branches ascending, to 180 mm long; axes of branches and branchlets to 0.5 mm diameter, tough and wiry, striped green and white, several-angled and short-scabrous along edges; stalk of spikelet 2–3-angled, ca. 6 mm long, below glumes with a terminal turnip-shaped swelling 1.5–2 mm diameter, the swelling short-scabrous at base with teeth in 2 rows. **Spikelet:** narrowly fusiform before anthesis, gaping to 75° when in flower, of 3 bisexual florets or 2 bisexual florets + 1 sterile upper floret, not breaking from glumes; **glumes** 2, subequal, in range 23–32 mm long, > florets, upper glume > lower glume ± 1 mm, membranous with green veins, (7-)9-veined or 11-veined, glabrous; rachilla strongly flattened side-to-side, with lemma and palea spreading at anthesis, in range basal callus with several hairs to 2 mm long; **lemma** of fertile florets, awned or not, 14–19 mm long decreasing upward, rounded on back, membranous aging stiffer with 7 conspicuous, green veins, the veins short-scabrous above midpoint, short-serrate on margins above midpoint, often short-forked at tip with teeth 0.2–0.5 mm long, the lower lemma awned or not, the awn attached ± at lemma midpoint, to 42 mm long, straight or weakly twisted (never sharply bent), whitish with several fine green stripes, minutely scabrous with upward-pointing teeth; lemma of sterile floret to 10 mm long, 5-veined; **palea** of fertile floret to 16 mm long, < lemma, 2-veined, 2-keeled, membranous with green veins, keel conspicuously short-ciliate 1/4 from base to tip, short 2-forked or not at tip; palea of sterile floret to 8 mm long. **Flower:** bisexual; **perianth (lodicules)** 2, teardrop-shaped or ± mitten-shaped with bulbous base and flat tip, 1.5–2 × ± 0.7 mm, translucent with colorless tips, each lobe eccentrically ovoid with acute tip, flattened tip 1 mm long, sometimes 1 lobe having a second, ascending, narrower short lobe below midpoint; **stamens** 3, free; filaments threadlike, to 11 mm long, colorless; anthers basifixed, dithecal, 3–4.3 mm long, pale yellow, longitudinally dehiscent; pollen pale yellow; **pistil** 1; ovary superior, broadly obovoid, ± 1.7 × 2 mm, whitish, flattened on 1 face later forming groove, sides surrounded by ascending straight hairs 1.5–2 mm long, 1-chambered with 1 ovule; styles 2, widely spaced on tip of ovary and ascending, 3.5–4 mm long, colorless, villous with stigmatic hairs to 0.8 mm long. **Fruit:** achene (caryopsis), tightly enclosed in lemma and palea, ellipsoid compressed front-to-back, 7–8 × 2–3.2 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. Early April–mid-May.

Naturalized. A cultivated annual occurring spontaneously in range along trails used for horse riding or where horse trailers have been parked and horse feed has been dropped. *Avena sativa* in range typically is approximately a meter in height and has some leaves that are twice as wide as the other species, so it is easy to spot cultivated oats. The spikelets are large versions of *A. fatua*, and either lack awns or have a single awn on the lower lemma.

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