

Festuca perennis (L.) Columbus & J. P. Smith, PERENNIAL RYE GRASS (including ANNUAL RYE GRASS or ITALIAN RYE GRASS). Annual to perennial herb, fibrous-rooted, 1–many-stemmed at base and clump-forming, ascending to erect, 25–90 cm tall; shoots with 2–7 leaves, blades folded or rolled in bud, glabrous; adventitious roots at buried nodes. **Stems (culms):** cylindric, 1–3 mm diameter, tough, green aging tannish with dark purplish red nodes, straight or bent at swollen nodes, internodes 10–85 mm long increasing upward, smooth, glabrous; internodes hollow. **Leaves:** alternate distichous, simple with sheath; sheath open, 35–160 mm long, striped, with or without lobes (auricles) at top, auricles clasping or descending, acute, to 2 mm long, light green to pale green, diminutive auricle = convex widening of leaf base; ligule membranous, transverse to oblique truncate, 0.4–3 mm, dark tan at base to whitish to light tan at tip; blade linear, 25–300 × 1.7–8 mm, the widest near base, flat, minutely toothed on margins near base to tip, parallel-veined but lacking a midrib, upper surface smooth and glossy, lower surface smooth or rough. **Inflorescence:** spikelets on a terminal, unbranched, spikelike panicles, panicle 70–310 mm long, with 12–40+ regularly spaced, vertically oriented, sessile spikelets arranged alternate distichous along rachis, 2-ranked, spikelet with 4–15 florets, bracteate, glabrous, awned or lacking awns; peduncle cylindric or somewhat compressed, 60–330 mm long, < 1.5 mm diameter at top, striped, smooth or finely scabrous, hollow; rachis with spikelets partially sunken edgewise into concave niche, scabrous on edges of concavity. **Spikelet:** ellipsoid to narrowly oblong strongly compressed side-to-side, 5–19 × 1.5–5 mm, spreading to 7 mm at anthesis, with florets decreasing in length distally, breaking above glume and between florets; rachilla 0.7–1.5 mm long, strongly flattened, glabrous; **glume** 1 = upper glume on outer side (lower glume present on terminal spikelet), linear-lanceolate, 4.8–11.5 mm long increasing in fruit, stiff, green aging tannish, 5–7-veined with the outermost veins commonly short and faint, narrowly membranous and incurved on margins, tapered to an acute or narrowly rounded tip, the tip stiff (\pm chartaceous); **lemma** mostly awned, lanceolate, in range 5–7 × 0.8–2.5 mm decreasing along spikelet, acute to slightly 2-toothed at tip, generally 5-veined, glabrous, awn 0–7.5 mm long, attached 0.2–0.4 mm below tip, light colored or purplish red at base; **palea** \pm as long as lemma, 2-veined, 2-keeled, membranous and green along each vein, densely short-ciliate along keels. **Flower:** bisexual; **perianth (lodicules)** 2, \pm obovoid-shaped to oblong teardrop-shaped or \pm sickle-shaped, 0.6–1 × 0.3–0.5 mm, bulbous at base, translucent, with a membranous, lateral lobe; **stamens** 3, free, exerted or exposed by spreading lemma and palea; filaments threadlike, 1.5–3+ mm long, white; anthers basifixed, dithecal, linear, 2.6–4.5 mm long, light yellow to greenish yellow or purplish to raspberry red, longitudinally dehiscent; pollen light yellow to pinkish; **pistil** 1; ovary superior, \pm heart-shaped to broadly obovoid, 0.4–0.8 × 0.6–0.9 mm, glossy greenish white to whitish, glabrous, 1-chambered with 1 ovule; styles 2, 1.2–2 mm long, translucent, erect at base above sharply bent and spreading, densely feathery (plumose) base to tip or nearly so, the plumose stigmatic hairs ascending, \pm 0.5 mm long. **Fruit:** achene (caryopsis), firmly enclosed within palea and lemma, obovoid to oblong, 2.5–4 × 1.5–1.6 mm, dull dark brown to black, rounded at base, rounded to truncate at tip with flap of ovary tissue, flat next to palea and convex next to lemma, glabrous. Late December–Mid-June.

Naturalized. Herb, in range mostly observed as an annual form in disturbed habitats, especially dry grasslands, but also encountered as a tufted perennial form in well-watered habitats. *Festuca perennis* includes the populations formerly treated as two species of *Lolium* (*L. perenne* L., a perennial, and *L. multiflorum* Lam., an annual) or two subspecies or varieties of *L. perenne*. Two forms can generally be recognized using traditional characters (leaves conduplicate vs. folded, blade width, awns present or absent on lemmas, and size of plant and inflorescence), but there will always be hybrids and subsequent generations of offspring with intermediate phenotypes. The common practice of reseeding Bermuda grass lawns in autumn with either perennial or annual ryegrass provides a seed source that can be dispersed to nearby natural habitats. Although the two forms possibly are worthy of recognition, nomenclatural combinations under *F. perennis* to accommodate the two forms have not been published. That notwithstanding, *L. perenne* is often difficult to distinguish from *L. multiflorum*; e.g., number of florets per spikelet seems an arbitrary character that can vary greatly on the same plant, awn length varies greatly, and it is often difficult to determine whether a plant is an annual or perennial.

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