

Vascular Plants of Williamson County

Solidago altissima subsp. *altissima* – LATE GOLDENROD [Asteraceae]

Solidago altissima L. subsp. *altissima*, LATE GOLDENROD. Perennial herb, clonal with widely spaced stems, rhizomatous, fibrous-rooted, not rosetted, 1-stemmed at base from creeping rhizome, erect to ascending, in range 35–140+ cm tall; shoots with only cauline leaves, lower cauline leaves withered and absent at flowering (often leafless to midplant), scabrous, short-stiff hairy with minute glandular hairs; rhizomes several per stem, shallow and ± horizontal, cylindrical, to 160 × 3–4 mm, initially white to light red-purple aging pale orangish brown, internodes 3–7 mm long, with adventitious root at some nodes, scales appressed-deltate, 2.5–3 mm, white to light red-purple, glabrous; adventitious roots on taprootlike rhizome at base of stem. **Stems:** cylindrical, to 8 mm diameter, tough, woody, lower stem often with periderm, periderm brown or tinged purplish. **Leaves:** helically alternate, simple and sessile to subsessile, without stipules; petiole indistinct from blade; blade lanceolate to narrowly ovate or oblanceolate to narrowly elliptic, in range < 10–85 × 2–20 mm, long-tapered at base, entire to low-serrate on margin but often entire at base below the widest point, acuminate to acute at tip, pinnately veined with a pair of thinner lateral veins at base, having principal veins slightly raised on upper surface and raised on lower surface, conspicuously scabrous. **Inflorescence:** heads, in terminal, paniclelike array, < 30–150+ mm long, with alternate, widely spreading to recurved (ascending) lateral branches having many heads oriented to upper side (secund), branches several–20+, the lower ones often with diminutive leaves on lower shoot and < 150 mm long, racemelike and with secondary racemes, decreasing upward with loss of leafy axis and reduction to absence of secondary racemes, heads closely spaced on upper side with leafy bracts on lower side, head radiate of ca. 13 pistillate ray flowers and 3–5 disc flowers, bracteate, short-hirsute and with minute glandular hairs; bract subtending peduncle awl-shaped, 1.5–2 mm long, green, short-hirsute to short-hispid with minute glandular hairs; peduncle 1.5–2.3 mm long, light green; **involucre** narrowly bell-shaped, 3.7–4 × 1.6–1.9 mm, phyllaries 15–19, outer phyllaries acute-lanceolate, ± 1 × 0.35 mm, green, glandular short-ciliate on fully exposed margins, middle and inner phyllaries obtuse-oblong to oblanceolate-oblong, 2.5–3 × 0.4 mm, with membranous margins to above midpoint and glandular short-ciliate approaching tip; receptacle without bractlets (paleae), glabrous. **Ray flower:** bilateral, slender; **calyx (pappus)** of ca. 30 capillary bristles in 2 series on short rim, 2.5–3 mm long, white; **corolla** unlobed to minutely notched, 2.5–3.5 mm long; tube slender, 1 mm long; limb spreading from involucre and phyllaries, linear to oblanceolate-linear, 1.6–2.5 × ca. 0.25 mm, light yellow, glabrous; **stamens** absent; **pistil** 1; ovary inferior, inversely conic, ca. 0.4 mm long, whitish, densely short-hirsute with ascending white hairs, 1-chambered with 1 ovule; style exerted, 2-branched, ca. 1.5 mm long, the branches ascending, linear, 0.5 mm long, light yellow. **Disc flower:** radial, ca. 2 mm across (spreading corolla lobes); **calyx (pappus)** of ca. 30 capillary bristles in 2 series on short rim, 3–3.5 mm long, white; **corolla** 5-lobed, 2.8–3.2 mm long; tube ± 0.5 mm long; throat narrowly funnel-shaped, 1 mm diameter at orifice, colorless with 5 yellow veins to sinuses; lobes triangular, < 0.7–1.1 mm long, light yellow, becoming spreading to somewhat reflexed; **stamens** 5, attached to top of corolla tube; filaments slender, elongating to 2.7 mm long; anthers fused into cylinder surrounding style, becoming exerted, basifixed, dithecal, 1.3–1.5 mm long incl.

appendages, golden yellow and appendages paler, longitudinally dehiscent; pollen golden yellow; **nectary disc** not evident; **pistil** 1; ovary inferior, inversely conic, ca. 0.4 mm long, whitish, densely short-hirsute with ascending white hairs, 1-chambered with 1 ovule; style eventually exerted above anthers, ca. 3 mm long increasing to 6 mm, short 2-branched, yellowish at base, the branches 0.5–0.7 mm long, golden yellow, papillate on outer (lower) side. **Fruits:** cypselae (achenes), of ray and disc flowers, monomorphic, narrowly obovoid, 1–1.2 × 0.35 mm, beige, weakly 5-ribbed, ± short-strigose with upward-pointing hairs; pappus capillary bristles ca. 30 in 1 whorl, ca. 3 mm long.

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