

Vascular Plants of Williamson County
Solidago juliae – JULIA'S GOLDENROD [Asteraceae]

Solidago juliae G. L. Nesom, JULIA'S GOLDENROD. Perennial herb, generally not clonal, short-rhizomatous, fibrous-rooted, not rosetted, 1–several-stemmed at base, erect to ascending, in range to 70 cm tall; shoots with only cauline leaves, lower cauline leaves of primary shoot withered and absent at flowering, foliage velveteen, uniformly short-villous on stems and leaves, lacking glandular hairs; rhizomes condensed, shallow, internodes short, with several, spreading principal adventitious roots having many secondary roots. **Stems:** cylindric, in range to 5 mm diameter, tough, often red-purple, internodes < 2–6 mm long. **Leaves:** helically alternate, simple and sessile with blade wings to base, without stipules; blade oblanceolate (the lowermost cauline leaves) or narrowly elliptic-linear to linear-oblanceolate to linear to narrowly obovate, in range (5–)25–70 × (1.5–)4–17 mm, long-tapered at base, minutely toothed to subentire on margins, with colorless ovoid teeth, acute at tip, pinnately veined with midrib raised on lower surface, surfaces with abundant, uniform short-villous hairs and conspicuous veiny network, purple-red at base, leaves within inflorescence subtending branches ascending, linear and minutely toothed, < 25 × 2 mm decreasing upward. **Inflorescence:** heads, in terminal, paniclelike array, array narrowly ovoid, in range to 100 mm long, with helically alternate, spreading lateral branches at nodes, the lowest branch in range with < 10 heads and to 20 mm long and with branchlets decreasing upward, heads mostly spreading with leaflike bracts subtending each fork and axis, head radiate, in range of (8–)12–14 pistillate ray flowers and 4–6 disc flowers, bracteate, short-villous; principal axis with shallow furrows, short-villous, not glandular-hairy; bract subtending peduncle half-sheathing awl-shaped, 1–2 mm long, greenish yellow to yellowish green, short-ciliate on margins; peduncle 1–2.5 mm long, light green, short-villous; **involucre** bell-shaped, 3.5–4 × 1.6–2 mm (rarely 2 fused), phyllaries 13–17, outer phyllaries 4–5, narrowly ovate, < 2 × 0.25–0.5 mm, light yellowish green, 1-veined, short-ciliate on margins, sometimes having several minute, stalked glandular-hairs on back below midpoint, middle and inner phyllaries lanceolate, ca. 2.5 × 0.7 mm; receptacle lacking bractlets (paleae), with a winglike crown separating ovaries of disc flowers, lacking hairs. **Ray flower:** bilateral, < 1 mm across; **calyx (pappus)** of ca. 30 capillary bristles in 2 series on short rim, subequal to unequal, 1.8–2.4 mm long, white; **corolla** minutely notched with 2–5 minute teeth (rarely unequally 2-lobed), lacking nonglandular and glandular hairs; tube cylindric, 1.5–1.8 mm, > pappus, greenish to yellowish green; limb spreading to ascending, oblanceolate to narrowly obovate, in range 1.5–2+ × 0.3–0.5 mm, yellow on both surfaces and faintly 3-veined; **stamens** absent; **pistil** 1; ovary inferior, inversely conic, ca. 0.8 × 0.4 mm, translucent but greenish at base, inconspicuously ribbed, sparsely short-hirsute with ascending white hairs, 1-chambered with 1 ovule; **nectary disc** not evident (corolla somewhat thickened at base; style exerted, 2-branched, 3.5–3.8 mm long, colorless at base, the stigmatic branches ascending, linear, ca. 0.7 mm long, light yellow. **Disc flower:** radial, ca. 2.5 mm across (spreading corolla lobes), ca. 5 mm long; **calyx (pappus)** of ca. 30 capillary bristles in 2 series on short rim, unequal, mostly 1.8–2.6 mm long, white; **corolla** 5-lobed, lacking nonglandular and glandular hairs; tube cylindric, 0.8 × 0.35 mm, greenish; throat narrowly funnel-shaped, 1.3–1.5 mm long, ca. 1mm diameter at orifice, colorless with 5 yellow veins to sinuses;

lobes long-triangular, 1.5–2 mm long, light yellow, ascending becoming spreading; **stamens** 5, attached to top of corolla tube; filaments 1.2–1.4 mm long, yellowish; anthers fused into cylinder surrounding style, becoming exerted, basifixed, dithecal, ca. 1.5 mm long incl. triangular appendages, sacs colorless and yellow, longitudinally and inwardly dehiscent; pollen yellow; **pistil** 1; ovary inferior, inversely conic, ca. 0.7 × 0.4 mm, translucent and greenish at base, sparsely short-hirsute with ascending white hairs, 1-chambered with 1 ovule; **nectary disc** not evident; style ca. 3 mm long, 2-branched, lower portion greenish, the stigmatic branches ca. 0.8 mm long, yellow, flat on inner surface, papillate on outer (lower) side. **Fruits:** cypselae (achenes), of ray and disc flowers, monomorphic, inversely narrow tapered from top to base, 1.2–1.6 mm long, brown, weakly 5-ribbed, short-strigose with upward-pointing hairs; pappus capillary bristles ca. 30 in 2 series, spreading, light brown.

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