

## Vascular Plants of Williamson County

### *Solidago petiolaris* – DOWNY RAGGED GOLDENROD [Asteraceae]

*Solidago petiolaris* Aiton, DOWNY RAGGED GOLDENROD. Perennial herb, with caudex and horizontal rhizomes, fibrous-rooted, not rosetted, unbranched to few-branched in canopy, in range spreading to ascending, < 40 cm tall; gynomonoecious; shoots with only cauline leaves, lower cauline leaves absent at flowering, axes and foliage short-hirsute (hirtellous) or somewhat scabrous, the terminal cell of a hair often bent  $\perp$ , minute stalked glandular hairs in canopy mostly associated with inflorescence, aromatic when crushed; rhizome horizontal and relatively shallow, to 3 mm diameter with brown periderm, tip white, internodes mostly 6–10 mm long, scales appressed, acute and ca. 1 mm long, colorless, abscising; adventitious roots few from rhizomes. **Stems:** low-ridged, in range mostly 3 mm diameter (caudex to 5 mm diameter and woody), with a ridge descending from each leaf aging cylindrical, tough, short-hirsute, often aging purple-red. **Leaves:** helically alternate, simple, short-petiolate, without stipules; petiole crescent-shaped to U-shaped in  $\times$ -section, flared to base, of cauline leaves to 2 mm long, pale green, short-ciliate on edges; blade of cauline leaf ovate or obovate, in range to 50  $\times$  30 mm (approaching inflorescence cauline leaves much smaller than other cauline leaves), broadly tapered at base, entire to low-serrate especially above midblade with callus on teeth, acute to obtuse at tip, pinnately veined with midrib slightly sunken to slightly raised on upper surface and principal veins raised on lower surfaces, short-hairy with scattered slender hairs mixed with thicker hairs, surfaces having a prominent network of veins (colorless), with scattered, inconspicuous stalked glandular hairs on smaller, nearly entire leaves approaching inflorescence, upper surface not bumpy (not rugose). **Inflorescence:** head, in terminal, paniclelike array on each shoot having condensed cymelike branchlets of several heads, array 25–100 mm long, on small array appearing racemelike with helically alternate heads and branchlets and on larger arrays with branchlets longer with more heads, head radiate, short-stalked or subsessile (sessile), ca. 10 mm across, in range of 6–8 pistillate ray flowers and 7–11 bisexual disc flowers, bracteate, short-hairy on green tissues; bract subtending array leaflike and short-petiolate, blade ovate, the largest 13–20 mm long; bract subtending lateral cymelike cluster obovate to oblanceolate, to 3.5  $\times$  1.4 mm, successive bracts acute narrowly triangular to elliptic or narrowly ovate, to 2.5 mm long, bract subtending peduncle mostly awl-shaped and < 2.5 mm long, bracts all short-hirsute, in range with minute stalked glandular hairs or not, not viscid; peduncle greenish, short-hirsute generally with minute glandular hairs; **involucre** bell-shaped, in range 4.5–5  $\times$  2.5 mm with outer phyllaries curved outward above midblade, phyllaries 18–32 in several series (fewer phyllaries during fall), outer phyllaries 5–8, narrowly ovate or triangular-lanceolate, 2–3  $\times$  0.4–0.8 mm, green, short-hairy and with some minute glandular hairs, inner phyllaries oblong to elliptic-lanceolate and acute, 3.5–4  $\times$  0.85–1.2 mm, 1-veined with green, raised midvein and colorless margins, thickened at base, acute at tip, short-strigose above midpoint; receptacle narrow and flat, lacking bractlets (paleae), have a conspicuous, fleshy crown surrounding each disc flower ovary to 0.4 mm long, lacking hairs. **Ray flower:** bilateral, 1–1.5 mm across; **calyx (pappus)** of stiff capillary bristles, in range 45–52 in  $\pm$  2 series, unequal, straight, (1.3–)2.5–4 mm long, aging whitish and spreading in fruit; **corolla** with 2–3 minute teeth, lacking hairs; tube cylindrical, 1.8–2  $\times$  0.2 mm, < pappus,

pale greenish; limb obovate to broadly oblanceolate, in range  $4-5.5 \times 1-1.5$  mm, bright yellow, veins inconspicuous; **stamens** absent; **pistil** 1; ovary inferior, narrowly bell-shaped,  $1.1-1.2 \times 0.3$  mm, translucent to greenish, low 10-ribbed, with minute ascending hairs along ribs and inconspicuous glandular hairs, 1-chambered with 1 ovule; **nectary disc** not observed; style threadlike, ca. 3.2 mm long, pale green-yellow at base to golden above, the stigmatic branches fully exerted. **Disc flower:** radial, 1–2 mm across; **calyx (pappus)** of stiff capillary bristles, in range 45–52 in  $\pm 2$  series, unequal, straight, (1.3–)2.5–4 mm long, aging whitish and spreading in fruit; **corolla** (4–)5-lobed, 4–4.5 mm long,  $\geq$  pappus, lacking hairs; tube cylindric, ca.  $1.2 \times 0.4$  mm, pale greenish-yellow; throat narrowly funnel-shaped, ca. 2 mm long, with 5 yellow ribs; lobes ascending to spreading, triangular to lanceolate, 0.85–2 mm long, bright yellow; **stamens** (4–)5, attached at top of corolla tube; filaments ca. 2 mm long, pale greenish yellow at base to golden approaching anthers; anthers fused into cylinder surrounding style branches, 1.8–1.9 mm long including acuminate appendages, yellow, appendages 0.5 mm long and partially exerted, longitudinally and inwardly dehiscent; pollen golden; **pistil** 1; ovary inferior, narrowly bell-shaped,  $1.1-1.2 \times 0.3$  mm, translucent to greenish, low 10-ribbed, with minute ascending hairs along ribs and inconspicuous glandular hairs, 1-chambered with 1 ovule; **nectary disc** surrounding base of style, short, green; style at anthesis ca. 3 mm long and included and elongating 2 $\times$  and conspicuously exerted, 2-branched, pale green-yellow at base and golden above midpoint, the stigmatic branches ca. 0.8 mm long, golden and no spreading. **Fruits:** cypselae (achenes), monomorphic, columnar to oblanceoloid somewhat compressed and inconspicuously 10-ribbed, in range ca.  $2.5 \times 0.6$  mm, brown, minutely hairy along ribs and before drying sometimes with minute glandular hairs.

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