

## Vascular Plants of Williamson County

*Rudbeckia hirta* – BROWN-EYED SUSAN, BLACK-EYED SUSAN [Asteraceae]

*Rudbeckia hirta* L. (var. *pulcherrima* Farw., if accepted), BROWN-EYED SUSAN, BLACK-EYED SUSAN. Annual in range (short-lived perennial herb), taprooted, not rosetted, 1-stemmed at base, often unbranched or later robust plant with ascending flowering branches above midplant from successive nodes, erect to ascending, in range 25–60 cm tall; shoots with only cauline leaves, conspicuously hispid-hirsute having hairs swollen at base mostly 1–2 mm long and conspicuously swollen at cell boundaries, aging scabrous with persistent hair bases. **Stems:** initially ridged aging cylindrical, in range to 6 mm diameter, with 3 ridges descending from each leaf, tough, internode < leaf. **Leaves:** helically alternate, simple, petiolate to sessile (the uppermost cauline leaves) but never clasping, without stipules; petiole indistinct from blade, 0–several mm long; blade ovate or elliptic to obovate (lower cauline leaves), 10–55 × 3.5–24 mm, tapered to long-tapered at base, entire to remotely short-toothed on margins, acute (obtuse) at tip, pinnately veined with 1 vein at base with 1–2 principal lateral veins several mm from base raised on lower surface. **Inflorescence:** head, solitary and terminal on a long peduncle, head radiate, in range 19–60 mm across, with 8–12 neuter ray flowers and 200+ bisexual disc flowers, the disc flowers in range on a conelike mound 4–11 × 7–17 mm (length < width) somewhat truncate with depressed center while flowering, the mound purple with some brown and covered with appressed, stiff short hairs, bracteate, hispid-hirsute; bract subtending peduncle leaflike and short-petiolate to sessile, petiole flattish on upper surface, to 1 mm long, whitish, blade elliptic, 10–25 × 3.2–10 mm, with midrib strongly raised on lower surface; peduncle 5-ridged or 8-ridged, 48–125 × 1.5 mm (ca. 1/3 plant height), stiff-hairy along ridges, lacking bracts along peduncle; **involucre** dishlike with widely spreading to somewhat deflexed phyllaries, ca. 14–30 mm across, phyllaries 13–18 (green) in 3–4 series, phyllaries 8 or 13 in outer series lanceolate to oblong, in range 13–16 × 2–2.4 mm, hispid-hirsute, upper surface somewhat cobblestonelike, inner series mostly of 5 phyllaries with an ovate lower portion 3–3.5 mm long and narrowly triangular upper portion to 7 mm long decreasing upward, upper surface of lower portion strigose with upward-pointing hairs and of upper portion glabrous with stiff-ciliate margins; often the two innermost phyllaries subtending ray flowers resembling bractlets (paleae); receptacle narrowly conic, ca. 5 × 1 mm, densely covered by helically alternate bractlets (paleae), palea subtending each disc flower (+ several ray flowers), acute-obovate slightly keeled to keeled, in range 4–5 × 1.5–1.8 mm, white at base to above midpoint and pale purple then purple approaching tip with 3 purple veins from base (central vein later), stiff-ciliate on margins approaching tip with the longest hair terminal, upper (inner) surface glabrous, outer (lower) surface short-hirsute except at base. **Ray flower:** bilateral, 3–8 mm across; **calyx** (pappus) absent; **corolla** unlobed sometimes with 1–2 short teeth; tube flattened front-to-back, < 0.5 mm long; limb elliptic to oblong, in range < 9–19 × 3–8 mm, dark yellow with deep red blotch at base appearing purple to brownish, the blotch flaring and irregularly lobed to jagged, 2–4 mm long, obtuse to short-notched at tip, upper surface glabrous and minutely papillate, lower surface short-strigose to short-hirsute with upward-pointing hairs and some sessile spheric glandular hairs; **stamens** absent; **pistil** 1, sterile; ovary inferior, narrowly top-shaped flattened front-to-back, ca. 2.5 × 1 mm, white and purplish brown,

faces glabrous, with stiff short-hairs to 0.25 mm long along top rim; style absent. **Disc flower:** bisexual, radial, < 1 mm across; **calyx (pappus)** absent; **corolla** 5-lobed, ca. 3 mm long; tube somewhat squarish, 0.7–0.8 mm long, white; throat angled, 0.6–0.65 mm diameter, lower portion white with purple stripes, upper portion purple; lobes widely spreading aging somewhat reflexed, triangular,  $0.7 \times 0.5$  mm, purple to brown; **stamens** 5, attached to top of corolla tube; filaments 0.5 mm long, white; anthers fused into cylinder surrounding style, basifixed, dithecal, ca. 1.6 mm long including appendage at tip, deep purple, the appendages exserted, triangular, 0.4 mm long; pollen orange-yellow; **pistil** 1; ovary inferior, narrowly inverted pyramidal and mostly 4-sided,  $1 \times 0.4$  mm, white, 1-chambered with 1 ovule; nectary disc surrounding base of style at top of ovary,  $0.25 \times 0.30.35$  mm; style slender, 1.8 mm long, white at base to deep purple above, 2-branched from below midpoint, the stigmatic branches exserted < 1 mm above anther appendages and appressed, conspicuously short-hairy. **Fruits:** cypselae (disc flowers only) obelisklike and 4-sided,  $\pm 2 \times 0.4$ –0.45 mm, black, finely textured with cells in well-defined vertical files; pappus absent.

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