

Vascular Plants of Williamson County

Glandularia bipinnatifida – DAKOTA VERVAIN, PRAIRIE VERBENA [Verbenaceae]

Glandularia bipinnatifida (Nutt.) Nutt., DAKOTA VERVAIN, PRAIRIE VERBENA. Annual or perennial herb, taprooted and often fibrous-rooted on prostrate stems, several-stemmed at base, decumbent or procumbent to ascending, in range 10–40 cm tall, spreading to 40 cm from taproot; shoots never strongly 2-dimensional (plagiotrophic) but horizontal, spreading shoots often with leaves oriented to upper side, not tufted, short-hirsute, short-strigose, and hirsute, sometimes somewhat hispid, with some inconspicuous glandular hairs; adventitious roots at nodes of basal stems and horizontal stems touching the ground.

Stems: 4-sided and \pm 4-angled, to 4.5 mm diameter, often with reddish purplish red angles and sometimes midveins, internodes to 55 mm long and facing sun sometimes purplish red, hairs mostly spreading. **Leaves:** opposite decussate, deeply, mostly symmetrically 2-pinnately dissected (larger leaves) to 1-pinnately dissected (smaller leaves), petiolate with pair connected by low ledges across node, without stipules; petiole channeled, indistinct from blade, to $25 \times 1-1.5$ mm, 1-veined, the vein white, upper side glabrous, lower side and margins hirsute, commonly with some glandular hairs on lower side; blade ovate to broadly ovate or broadly triangular in outline, $< 15-55 \times < 15-80$ mm, primary segments of larger leaves mostly opposite to subopposite and \pm equal, the lower ones to 35 mm long, principal axis mostly $< 3(-7)$ mm wide, channeled with halves somewhat unequal, segments oblanceolate to oblong or fusiform and ultimate segments like acute lobes or teeth, < 8 mm long, pinnately veined with principal veins sunken on upper surface and raised on lower surface, upper surface sparsely short-strigose to strigose with upward-pointing hairs, lower surface hirsute along margins and veins. **Inflorescence:** spike, terminal, densely many-flowered, at anthesis appearing flat-topped, axis elongating in fruit, flowers \pm alternate to subopposite decussate, bracteate, hirsute; peduncle to 10 mm long; rachis at anthesis with conspicuous purplish red stripes, increasing in fruit by forming internodes, internodes \pm cylindric, 2.5–3(–8) mm long, hirsute and pustulate short-hirsute with stalked glandular hairs; bractlet subtending flower awl-shaped to lanceolate-linear, slightly $>$ calyx, green with midvein and margins colorless, upper surface glabrous, lower surface hirsute, persistent and fused to receptacle. **Flower:** bisexual, slightly bilateral, 8–12 mm across with oblique limb, ca. 11 mm long, strongly and sweetly fragrant like lilac (*Syringa*); **calyx** 5-lobed (toothed); tube \pm pleated and 5-ribbed, $6.5-8 \times 1.1-1.7$ mm, expanding slightly above midpoint, ribs green alternating with membranous or translucent-purple strips (furrows), with several glands like those on bractlet; lobes unequal, fingerlike extensions of ribs, the shortest lobe on upper side to 0.7 mm long, lateral 2 lobes ca. 1.5 mm long, the longest 2 on lower side 3–3.3 mm long, with stiff hairs on margins; **corolla** slightly 2-lipped, 5-lobed, narrowly trumpet-shaped (salverform), $>$ calyx, generally reddish purple (magenta) or deep purple to blue-purple (all-white cultivars); tube 6.5–10 \times 0.7–1 mm, not expanded around ovary, whitish but pinkish approaching top, internally glabrous to midpoint and hairy above midpoint, the hairs varying from upward-pointing to downward-pointing or spreading, fading to white at base; throat slightly expanding from tube and mostly above calyx, lower throat 2.5–4 \times 1.5 mm, pale violet, upper throat funnel-shaped, 3 mm long, violet, internally white-hairy with downward-pointing hairs on lower part opposite lower anthers to upward-pointing hairs on upper part; upper lip 2-lobed, lobes oblong, ca. 3 \times 1.3 mm, rounded at tip (not notched), lower lip 3-lobed, 4.5–5 \times 2.5–

4.5 mm, lateral lobes widely spreading, ca. 2.5×1.8 mm and shallowly notched, central lobe wider and conspicuously notched, ca. 3×2.3 mm, lips brilliantly colored but paler on lower surface, upper surface with domed cells, short-hirsute; **stamens** 4, all fertile, pairs fused to corolla at different levels, 2 stamens arising at top of corolla throat and barely visible and 2 stamens at base of throat and not visible, upper stamens 1–1.5 mm long and lower stamens ± 1 mm long; filaments ± 0.7 mm long (upper stamens) and 0.5 mm long (lower stamens), yellowish green, anthers basifixed, dithecal, \pm heart-shaped, having equal sacs but obliquely positioned or unequal and having a subterminal appendage (upper stamens) and equal or subequal sacs lacking appendage (lower stamens), 0.7–1 mm long, yellowish green to light green, longitudinally and inwardly dehiscent, the appendage = a fingerlike extension of connective ± 0.5 mm long, purple and resembling cluster of grapes (colliculate); pollen whitish or colorless to pale yellow; **nectary disc** below ovary, 0.25 mm long, green; **pistil** 1; ovary superior, 4-lobed, ± 1 mm \times 0.6 mm, 4-chambered, each chamber with 1 ovule; style nearly = corolla tube-throat (typically 9–10 mm long), light green, compressed side-to-side approaching 2-forked tip, light green, with stigma in crotch, the longer fork surpassing stigma and slightly exerted from corolla throat hairs, \pm conic, arched outward and compressed side-to-side, the shorter fork triangular and $<$ stigma; stigma at same level as upper anthers, \pm spheroid, 0.3–0.35 mm, dark green at base to pale green above, papillate. **Fruits:** schizocarp (microbasarium), of 4 dry, 1-seeded mericarps (nutlets), nutlets oblong-linear, $3\text{--}4 \times 0.7\text{--}1$ mm, the widest and slightly flaring at base, brown on outer faces, angled with fine, warty growths (muricate) on inner faces, longitudinally 4-veined on outer face but with cross veins and appearing pitted above midpoint; persistent calyx with several purple stripes before drying.

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