

Vascular Plants of Williamson County

Neptunia lutea – YELLOW PUFF, YELLOW NEPTUNIA [Fabaceae]

Neptunia lutea (Leavenw.) Benth., YELLOW PUFF, YELLOW NEPTUNIA. Perennial vine, not spinescent, several-stemmed at base, branches trailing close to ground; shoots with only cauline leaves, secondary leaflets folding together when touched (thigmotropic), lacking bristles, prickles, and other forms of armature, lacking glandular pits or cups. **Stems:** ridged, to 2 mm diameter, with 3 ridges descending from each leaf, internodes to 75 mm long, aging cylindric, tough, upper side purplish red, with scattered short-hirsute hairs.

Leaves: helically alternate, even-2-pinnately compound having 2–4 pairs of primary leaflets (pinnae) and primary leaflets with (8–)14–18 lateral pairs of secondary leaflets, petiolate with pulvinus, with stipules; stipules 2, attached to leaf base below pulvinus, asymmetric acuminate-ovate, 5–7.5 mm long, with parallel veins at base and reddish principal veins raised on lower surface, short-ciliate on margins, \pm persistent; petiole pulvinus 1.5–3 mm long, channeled above pulvinus, to 30 mm long, lacking glands and armature; rachis channeled with primary leaflets arising in pairs from 2 ridges, to 24 mm long + extended beyond leaflets 1.5–2 mm, pilose-hirsute especially on upper side, ridges often purple-red; stipels absent; petiolule of primary leaflets = elevated pulvinus 1–1.3 mm long, purplish to rose-red, conspicuously short-hirsute with orange food bodies at base, lacking axis above pulvinus; rachilla hemicylindric, to 24 mm long + extended 1.5–2 mm beyond leaflets at top, with scattered hirsute hairs, lacking prickles; secondary leaflets strictly paired, the lowest pair at top of pulvinus; secondary petiolule pulvinus flat on upper side, \pm 0.35 mm long, with food bodies at base; blades of secondary leaflets \pm oblong to lanceolate-oblong, (2–)3–5.5 \times 0.8–2 mm, conspicuously asymmetric and oblique at base, entire and short-ciliate on margins, rounded obtuse with short point at tip, 3-veined at base but veins slightly raised on lower surface, somewhat glaucous and surfaces glabrous.

Inflorescence: headlike spike, subspheroid, 15–20 mm across, 40–60-flowered, flowers helically alternate, tightly packed, \pm sessile, bracteate; peduncle pulvinus 3–4 mm long, hirsute, above pulvinus slender and angled, 25–35 mm long, $>$ petiole of associated leaf, short-hairy with radiating hairs and some stalked glandular hairs, having several widely spaced bracts along peduncle, bracts ovate to awl-shaped, $<$ 2–3 \times 1.4 mm, 3-veined at base, short-ciliate on margins, often purplish red; rachis subspheroid, without internodes; bractlet obovate to cupped-ovate, 1.3–1.5 \times 0.6 mm, \ll flower, white with yellowish center, sparsely short-ciliate above midpoint, acute at tip, abscising at or after anthesis.

Flowers: bisexual and staminate (diminutive pistil or absent), radial, ca. 2 mm across; **calyx** 5-lobed, funnel-shaped, 1.6–2 mm long; tube 1–1.2 mm long, colorless with 5 green veins to lobes; lobes triangular, ca. 0.7 mm long, having rounded sinuses, with green ridge on outer (lower) surface, glabrous; **petals** 5, narrowly obovate to elliptic, 2.5–3 \times 0.7–1.2 mm, light yellow, acute at tip, pinnately veined with veins raised on outer (lower) surface; **stamens** 10, free; filaments straight cylindric, 6–8 \times 0.2 mm, yellow-orange; anthers dorsifixed, dithecal, 0.5–0.7 mm, brown, longitudinally dehiscent; pollen orange-yellow; **pistil** 1, stalked (stipe), stalk 0.5 mm long, green, glabrous; ovary superior, \pm ellipsoid, 0.6 \times 0.3–0.35 mm, greenish white or pale green, short-hairy, 1-chambered with several ovules attached to upper side; in functionally staminate flowers diminutive, sterile pistil $<$ 2 mm long; style thicker than filaments, 6.5–7 \times 0.3 mm, yellowish green aging yellow-orange,

short hairs near ovary, stigma terminal, recessed and calderalike 0.25 mm. **Fruit:** pod (legume), stalked, dehiscent, 2-valved, oblong and strongly flattened bulging at seeds, 23–30 × 7–8 mm, valves brown and papery, veiny and with minute bumps (minute glandular hairs), edges with stalked glandular hairs, before dry edges purple and tip acute ca. 90°. **Seed:** broadly elliptic strongly compressed, 4–4.7 × 2.5–3 mm, glossy dark olive with dark brown, U-shaped scar on 2 faces, having a small, subterminal hilum.

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