

Vascular Plants of Williamson County
Juglans nigra – BLACK WALNUT [Juglandaceae]

Juglans nigra L., BLACK WALNUT. Tree, winter-deciduous, with 1 trunk, in range often 10+ m tall; monoecious; shoots with variable-sized glandular hairs, the hairs with broad heads and aging yellowish, aromatic; bark brown, fissured into narrow plates. **Stems:** angled becoming cylindrical when woody, with rounded V-shaped leaf scars having 3 prominent traces ca. 5.5 mm across; pith of young twigs chambered, 1 mm diameter, brown, with ca. 35 diaphragms per 10 mm; bark thick and furrowed, gray. **Leaves:** helically alternate, odd-1-pinnately compound having (9–)11–19(–23) leaflets with lateral leaflets subopposite and a diminutive terminal leaflet (absent), petiolate, without stipules; petiole not channeled but indented close to stem, in \times -section biconvex, 35–85 mm long, short-tomentose and with small, densely short-hairy next to axillary bud, stalked glandular hairs of varied lengths often with reddish heads; rachis not channeled, 250–400 mm long, pairs spaced to 50 mm apart, densely glandular-hairy; petiolules short–1.5 mm long, short-tomentose and glandular-hairy; blades of leaflets lanceolate or narrowly ovate, (40–)55–115 \times 13–45 mm with the longest leaflet midleaf, lateral leaflets asymmetric + oblique and cordate at base (indented on leading edge), low-serrate (subentire) on margins, acuminate to acute at tip, pinnately veined with principal veins somewhat raised on both surfaces, upper surface glabrous, lower surface glandular-hairy and when young with shaggy hairs mostly in axils between midrib and lateral veins. **Staminate inflorescence:** catkin (ament), racemelike, clustered, many-flowered, preformed during previous year and emerging before leaves from winter buds below new growth, shedding pollen several months later with mature leaves present, lax and pendent, long-cylindric, to 100 mm long, with radiating, nodding flowers 6–7 per 10 mm on pedicel-like axes, glabrous or with several hairs approaching each pedicel, becoming mostly glabrescent before anthesis; peduncle absent; pedicel-like axes spreading, at anthesis sparsely hairy; bractlet subtending flower acuminate-ovate, 0.7–1.1 mm long, on the oldest, sterile nodes of catkins without pedicel and heart-shaped, ca. 1.5 \times 1.5 mm, reddish, hairy, subtending 2 bracteoles, the bracteoles sepal-like and indistinguishable from sepals; axis to 1.5 mm long, enlarged at top, with scattered branched hairs. **Staminate flower:** 3.3–4.5 mm across; on green, dishlike receptacle; **perianth (calyx)** mostly 6-lobed, fused at base to receptacle, green; lobes subequal, obovate to roundish, mostly 1.5–2 mm long, stringing curved inward cupping anthers; **stamens** 25–35, attached to receptacle; filaments short; anthers exerted, basifixed, dithecal, 0.8–1.7 mm long, distinctly 4-lobed, greenish yellow, with light green on connective and a fleshy, shallowly lobed extension to 0.3 mm long at tip, glabrous, longitudinally dehiscent; pollen light yellow, copious, dry, wind-borne; **pistil** absent. **Pistillate inflorescence:** spike, terminal at tip of new shoot, mostly 2–3-flowered, erect; peduncle < 7 mm long, with several vegetative shoots arising at base, short-tomentose and glandular-pubescent; bract subtending “flower” absent; **involucre** containing female flower, ovoid, ca. 6 \times 3 mm, formed by fusion of 1 bract and 2 bracteoles into a single uniform structure fused to and surrounding 3/4 to 7/8 of ovary, covered with tufted, branched hairs and glandular-pubescent. **Pistillate flower:** **perianth (calyx)** ca. 5-lobed; tube fused with involucre and ovary wall, constricted at tip; lobes erect to ascending, unequal, triangular, 1.2–1.9 \times 1–1.3 mm long, green, sometimes with several much smaller

lobes interior to calyx lobes narrowly triangular and < 0.8 mm long; **stamens** absent; **pistil** 1, within involucre; ovary inferior, subspheroid, green, 2-chambered, each chamber with 1 ovule; styles 1, 2-branched, lower portion stout, ca. $1.5 \times 1.5 \times 1.2$ mm, the branches spreading, fusiform ca. 8×3 mm, stigmatic for most of length in \pm longitudinal, bumpy, feathery (plumose) crests, green aging rose-colored. **Fruit:** drupelike nut, 1–2 per cluster, indehiscent, 1–2-seeded, spheric, while attached to plant in range 36–42 mm, dull green, when shed becoming purplish brown and low-dimpled; husk leathery, strongly aromatic, with dried glandular hairs; pulp blackening fingers when handled and turning black (tannins), easily cut; nut shell (endocarp) spheroid in outline and woody, ca. 25 mm across, extremely hard, shallowly grooved with rough to warty surfaces between grooves.

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