

## 161. MELILOTUS (Linnaeus) Miller, Gard. Dict. Abr., ed. 4. 1754.

草木犀屬 cao mu xi shu

*Trifolium* [unranked] *Melilotus* Linnaeus, Sp. Pl. 2: 764. 1753 [“*Meliloti*”]; *Brachylobus* Dulac.

Annual or biennial herbs, taprooted, upright. Leaves pinnately 3-foliolate; stipules entire or nearly so, basally adnate to petiole; leaflets serrulate, lateral veins ending in teeth; stipels absent. Racemes axillary, slender, elongate; flowers numerous; bracts minute; bracteoles absent. Calyx teeth subequal. Corolla yellow or white, petals free from staminal tube, deciduous; standard ovate-oblong; wings narrowly oblong; keel broadly falcate. Stamens diadelphous; filaments capillary. Ovary sessile or shortly stipitate; ovules 2–8; style filiform, curved upward, often persistent. Legume obovoid or globose, slightly exserted from calyx, surface reticulate veined or wrinkled. Seeds 1 or 2, broadly ovoid, smooth or papillate.

About 20 species: temperate and subtropical N Africa, Asia, and Europe; four species in China.

These are fragrant herbs grown as green manure, forage crops, or bee plants.

- 1a. Flowers white ..... 1. *M. albus*
- 1b. Flowers yellow.
  - 2a. Flowers up to 3 mm, pedicels less than 1 mm; legumes globose, ca. 2 mm ..... 4. *M. indicus*
  - 2b. Flowers (3–)7 mm, pedicels 1.5 mm or more; legumes ovoid-elliptic, 3–5 mm.
    - 3a. Stipules lanceolate, base hastate and split into several teeth or incised; leaflets serrate, teeth 15–20 on a side ..... 3. *M. dentatus*
    - 3b. Stipules linear-falcate, base entire or with 1 minute tooth; leaflets obscurely to strongly serrate, teeth fewer than 15 on a side ..... 2. *M. officinalis*

**1. *Melilotus albus*** Medikus, Vorles. Churpfälz. Phys.-Öcon. Ges. 2: 382. 1787.

白花草木犀 bai hua cao mu xi

Annual or biennial herbs, glabrescent. Stems erect, 70–200 cm, terete, hollow, much branched. Stipules subulate, 6–10 mm, entire; petiole slender, shorter than leaflet; leaflets lanceolate, oblong, or oblanceolate-oblong, 15–30 × (4–)6–12 mm, puberulent abaxially, glabrous adaxially, lateral veins running into teeth, 12–15 pairs, margins shallowly serrate. Racemes 8–20 cm; flowers 40–100; bracts 1.5–2 mm; pedicels 1–2 mm. Corolla white, 3.5–5 mm; standard larger than wings and keel. Ovary narrowly ovate; ovules 2–4. Legume elliptic to oblong, 3–3.5 mm, veins reticulate, thin, brown, dark when ripe, apex acute, beaked. Seeds 1 or 2, brown, ovoid, papillate. Fl. May–Jul, fr. Jul–Sep.

Moist soil in fields, roadsides, wastelands. Anhui, Fujian, Gansu, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Jiangsu, Liaoning, Nei Mongol, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Yunnan [Asia, Europe].

**2. *Melilotus officinalis*** (Linnaeus) Lamarck, Fl. Franç. 2: 594. 1779.

草木犀 cao mu xi

*Trifolium officinale* Linnaeus, Sp. Pl. 2: 765. 1753 [*T. “M. officinalis”*]; *Brachylobus officinalis* (Linnaeus) Dulac; *Melilotus graveolens* Bunge; *M. officinalis* f. *suaveolens* (Ledebour) H. Ohashi & Tateishi; *M. suaveolens* Ledebour.

Biennial herbs, sparsely puberulent to glabrescent. Stems erect, 40–100(–250) cm, longitudinally ridged. Stipules linear-falcate, 3–5(–7) mm, entire or with 1 tooth at base; petiole slender; leaflets obovate, broadly ovate, oblanceolate, to linear, 15–25(–30) × 5–15 mm, lateral veins running into teeth, 8–12 pairs,

margins shallowly serrate. Racemes 6–15(–20) mm, 30–70-flowered, dense at first, becoming lax in anthesis; bracts equal to pedicels, 1.5–2 mm. Corolla yellow, 4.5–7 mm; standard ± equal to wings and keel. Ovary narrowly ovate; ovules (4–)6(–8). Legume ovoid, 3–5 × ca. 2 mm, veins transversely reticulate, dark brown, apex with persistent style. Seeds 1 or 2, yellowish brown, ovoid, ca. 2.5 mm, smooth. Fl. May–Sep, fr. Jun–Oct.

Sandy grasslands, hillsides, ravine shores, margins of mixed woodlands. Throughout China [Asia, Europe].

**3. *Melilotus dentatus*** (Waldstein & Kitaibel) Persoon, Syn. Pl. 2: 348. 1807.

细齿草木犀 xi chi cao mu xi

*Trifolium dentatum* Waldstein & Kitaibel, Descr. Icon. Pl. Hung. 1: 41. 1802; *Melilotus dentatus* prol. *sibiricus* O. E. Schulz; *M. dentatus* subsp. *sibiricus* (O. E. Schulz) Suvorov.

Biennial herbs, glabrous. Stems erect, 20–50(–80) cm, terete, longitudinally ridged. Stipules lanceolate to narrowly triangular, 6–12 mm, base hastate, with 2 or 3 teeth or incised; petiole slender, usually shorter than leaflets; leaflets oblong-lanceolate to suborbicular, 20–30 × 5–13 mm, lateral veins 15–20 pairs, parallel and branching into teeth, prominent on both surfaces, especially obvious near margins, base rounded or cuneate, apex rounded, apiculate. Racemes 3–5 cm, elongated to 8–10 cm when fruiting, scattered 20–50-flowered; pedicels ca. 1.5 mm. Corolla yellow, 3–4 mm; standard slightly longer than wings and keel. Ovary narrowly ovate; ovules 2. Legume globose to ovoid, 4–5 × 2–2.5 mm, veins reticulate, gibbous on ventral suture, brown. Seeds 1 or 2, olive-green, globose, ca. 1.5 mm. Fl. Jun–Sep, fr. Jul–Oct.

Woodland margins, alkaline meadows. Gansu, Hebei, Heilongjiang, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Xinjiang [C Asia, Europe].

**4. *Melilotus indicus*** (Linnaeus) Allioni, Fl. Pedem. 1: 308. 1785.

印度草木犀 yin du cao mu xi

*Trifolium indicum* Linnaeus, Sp. Pl. 2: 765. 1753 [*T. "M. indica"*]; *Melilotus parviflorus* Desfontaines.

Annual herbs, slightly pubescent to glabrescent. Stems erect or ascending, 20–50 cm, terete, simple or branching from base. Stipules lanceolate, 4–6 mm, base auriculate, with 2 or 3 tiny teeth, margin membranous; leaflets obovate-cuneate to narrowly oblong, 10–25(–30) × 8–10 mm, appressed hairy abaxially, glabrous adaxially, lateral veins 7–9 pairs, parallel running into teeth, base cuneate, margins serrulate toward apex, apex obtuse or truncate, sometimes retuse. Racemes slender, dense, 1.5–4 cm; peduncle long; flowers 15–25; bracts filiform; pedicels ca. 1 mm. Corolla yellow, 2.2–2.8 mm; standard broadly ovate, retuse, equal to wings and keel, or sometimes keel slightly longer. Ovary narrowly ovate; ovules 2. Legume olive-green, becoming red-brown when ripe, globose, ca. 2 mm, slightly exserted from calyx, glabrous, veins reticulate. Seed 1, dark brown, broadly ovoid, ca. 1.5 mm. Fl. Mar–May, fr. May–Jun.

Open places, alkaline soil in meadows, roadsides. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Jiangsu, Sichuan, Taiwan, Yunnan, Zhejiang [S and C Asia, Europe].

