

## 2. BETA Linnaeus, Sp. Pl. 1: 222. 1753.

甜菜属 tian cai shu

Herbs annual, biennial, or perennial, smooth, glabrous. Stems prostrate or decumbent, ribbed, striate. Leaves alternate, petiolate; leaf blade flattened, margin entire or subentire. Flowers solitary or in 2- or 3-flowered glomerules arranged in terminal spikes on upper part of branches, without bractlets, perfect, fused at base and falling together at utricle maturity. Perianth urceolate, 5-parted, mostly herbaceous, more rarely petaloid, united and hardened at base; segments erect or infolded, longitudinally keeled abaxially. Stamens 5, perigynous; filaments subulate, united proximally into a glandular disk; anthers oblong. Stigmas 2 or 3(-5), stigmatic surface papillate. Utricle proximally adnate to perianth; pericarp succulent or hardened distally. Seed horizontal, depressed globose; testa leathery, lustrous, free from pericarp; embryo annular or subannular; perisperm copious.

About ten species: N Africa, SW Asia, Europe; one species (introduced) in China.

### 1. Beta vulgaris Linnaeus, Sp. Pl. 1: 222. 1753.

甜菜 tian cai

Herbs annual or biennial. Root stout, tuberlike, and napiform or fusiform, or branched and not tuberlike. Stem erect, ± branched, ribbed, striate. Basal leaves long petiolate; petiole stout, abaxially convex, adaxially flattened or slightly concave; leaf blade oblong, 20–30 × 10–15 cm, adaxially crisped, sublustrous, abaxially with strongly protruding veins, base cuneate, truncate, or slightly cordate, margin entire or undulate, apex obtuse. Cauline leaves alternate, smaller than basal ones; leaf blade ovate or lanceolate-oblong, base gradually narrowed into petiole, apex attenuate. Flowers 2- or 3-glomerulate. Perianth united at base; segments linear or narrowly oblong, becoming leathery and incurved in fruit. Utricle basally sunken into perianth, distally subsucculent. Seed red-brown, sublustrous, lenticular, 2–3 mm in diam.; perisperm farinaceous. Fl. May–Sep, fr. Jul.

Commonly cultivated in China [native to N Africa, SW Asia, and Europe; widely cultivated].

This species is highly variable, with many subspecies, varieties, and forms described. Four cultivated varieties are here recognized in China.

- 1a. Root branched, not tuberlike ..... 1b. var. *cicla*
- 1b. Root tuberlike.
  - 2a. Root purple-red; leaf veins purple-red ..... 1a. var. *vulgaris*
  - 2b. Root orange-yellow or white; leaf veins not purple-red.
    - 3a. Root white ..... 1c. var. *altissima*
    - 3b. Root orange-yellow ..... 1d. var. *lutea*

#### 1a. Beta vulgaris var. vulgaris

甜菜(原变种) tian cai (yuan bian zhong)

*Beta vulgaris* var. *rosea* Moquin-Tandon.

Root purple-red, tuberlike, fusiform to globose. Leaf veins purple-red.

Cultivated mostly in Beijing [of cultivated origin].

The roots are used as a vegetable (red beet).

### 1b. Beta vulgaris var. cicla Linnaeus, Sp. Pl. 1: 222. 1754.

菘苳菜 jun da cai

Root branched, not tuberlike.

Cultivated mostly in S China [of cultivated origin].

The leaves are used as a vegetable (spinach beet, Swiss chard).

### 1c. Beta vulgaris var. altissima Döll, Rhein. Fl. 293. 1843.

甜萝卜 tian luo bo

*Beta vulgaris* var. *saccharifera* Alefeld.

Root white, fusiform.

Cultivated mainly in N China [of cultivated origin].

The roots are a commercial source of sugar (sugar beet).

### 1d. Beta vulgaris var. lutea Candolle in Lamarck & Candolle, Fl. Franç., ed. 3, 3: 383. 1805.

饲用甜菜 si yong tian cai

Root orange-yellow, fusiform to globose.

Cultivated mostly in Gansu and Nei Mongol [of cultivated origin].

The roots are used for fodder (yellow beet, mangold).

