

A revised key for the *Lycopersicon* and related *Solanum* species

Pollination methode: collect pollen of different plants in tube or petridish by lateral opening the anthers with a tweezers. Direct pollination of the flowers.

The following key is a revision to that formulated by Rick et al. (1990) and published in the Tomato Genetics Cooperative Report, 40: 31. The key has been expanded to add subspecific taxa, as well as the tomato-like nightshades.

1. Interior of ripe fruit red: seeds 1.5 mm or longer.

1.1. Fruit diameter more than 1.5 cm; leaf margin generally serrate. (*gekarteld*)

1.1.1. Fruit diameter 3 cm or larger, 2-to-many loculed. ...[L. esculentum](#) Mill. *Stigma inside= autogamous*

1.1.2. Fruit diameter 1.5-2.5 cm; 2-loculed. ...[L. esculentum var. cerasiforme](#) (Dun.) Gray (*stigma inside= autogamous*), *shorter inflorescence than pimpinellifolium*

1.2. Fruit diameter less than 1.5 cm, usually ca. 1 cm; leaf margin generally undulate (*gegolfd*) or entire. ...[L. pimpinellifolium](#) (Jusl.) Mill. *Long inflorescences, stigma outside, small red fruits*

2. Interior of fruit yellow or orange; seeds 1.0 mm or shorter ...[L. cheesmanii](#) Riley

2.1. Leaves highly subdivided, internodes short, densely pubescent, large accrescent (*achtergebleven*) calyx...[L. cheesmanii f. minor](#) (Hook.) C.H. Mull.

3. Interior of ripe fruit green or whitish; seeds of varying sizes.

3.1. Sympodia with 2 leaves. *Number of leaves between two inflorescences, not strict*

3.1.1. Inflorescences with small or no bracts (*schutblad*). (subgeneric "minutum" complex)

3.1.1.1. Flowers small (corolla diameter 1.5 cm or less); seeds 1 mm or shorter. ...[L. parviflorum](#) Rick, Kesicki, Fobes, and Holle (*stigma inside=autogamous*)

3.1.1.2. Flowers larger (corolla diameter 2 cm or more); seeds 1.5 mm or longer. ...[L. chmielewskii](#), Rick, Kesicki, Fobes, and Holle (*stigma outside, allogamous?*)

3.1.2. Inflorescences with large bracts (*schutblad*).

3.1.2.1. Anthers attached in a tube, dehiscent (*opengaand*) by lateral apertures (*openingen*). (subgeneric "*peruvianum*" complex)

3.1.2.1.1. Plants erect; peduncle (*steel*) longer than 15 cm; flowers congested (*verstopt*); anther tube straight. ...[L. chilense](#) Dun. *Large flowers, difficult to cross with esculentum (embryo rescue), allogamous Ripe fruits are green, young fruits covered by the sepals*

3.1.2.1.2. Plants spreading; peduncle shorter than 15 cm; flowers more loosely arrayed; anther tube generally bent distally. ...[L. peruvianum](#) (L.) Mill.

3.1.2.2. Anthers free, poricidal. ...[L. pennellii](#) (Corr.) D'Arcy (formerly *Solanum pennellii* Corr.)

3.1.2.2.1. Leaves and stems puberulous (*behaard*), shiny. ... [L. pennellii var. puberulum](#) (Correll) D'Arcy

3.2. Sympodia with 3 leaves. ...[L. hirsutum](#) Humb. and Bonpl. *Variation in sympodia, lot of hairs but also variation in one accession possible, long plant, small inflorescences*

3.2.1. Leaves and stems nearly free of hairs, stems slender, darkly pigmented with anthocyanins ...[L. hirsutum f. glabratum](#) C.H. Mull.

3.3. Sympodia with more than 3 leaves.

3.3.1. Anthers white to cream-colored, leaf margins dissected (*ingesneden*)

3.3.1.1. Leaves and stems pubescent, fruit purplish green, < 1 cm diameter, ripen to berry texture. ...[S. lycopersicoides](#) Dun.

3.3.1.2. Leaves and stems glabrous (*onbehaard*) nearly succulent (*vettig*), fruit yellowish green, usually, >1 cm diameter, ripen to a papery texture. ...[S. sitiens](#) Johnst..

3.3.2. Anthers yellow, leaf margins entire, leaflets elliptic to lanceolate

3.3.2.1. Leaflets relatively broad, scabrous (*ruw*) above, generally 2 pairs of lateral leaflets, fruits 2-3 cm.[S. juglandifolium](#) Dun.

3.3.2.2. Leaflets relatively narrow, smooth-velvety above, fruit large, mostly multilocular. ...[S. ochranthum](#) Dun.

