



Ghent University Botanical Garden

Populus L. (Salicaceae)

VEGETATIVE KEY TO SPECIES IN CULTIVATION

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Vegetative identification key.

Introduction:

This key is based on vegetative characteristics, and therefore also of use when flowers and fruits are absent.

- Use a 10x hand lens to check leaf margin incisions and venation pattern in general.
- Look at the entire plant.
- Beware of hybridisation, especially with plants raised from seed other than wild origin.

Abbreviations used in this key:

- **L/W** = length/width
- **LS** = lower surface
- **US** = upper surface

Taxa treated in this key: → p4.

Taxa referred to synonymy in this key: → p4.

Remarks: → p4.

References:

- JDL herbarium and [illustrations](#)
- living specimens, in various arboreta, botanic gardens and collections
- literature:

Bean, W.J. & Clarke, D.L. - (1987) - *Populus* in Bean's Trees and Shrubs hardy in the British Isles 3, p.293-328. - and [Trees and Shrubs Online](#)
Eckenwalder, J.E. - (1997) - *Populus* in Flora of North America 7. - and [online edition](#)
Fang, C., Zhao, S. & Skvortsov, A.K. - (1999) - *Populus* In Flora of China 4, p.139-162. - and [online edition](#)
Krüssmann, G. - (1977) - *Populus* in Handbuch der Laubgehölze 2, p.445-459.
RHS - (2014) - *Populus* in The Hillier Manual of Trees & Shrubs, p.258-261.

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[Plantentuin Universiteit Gent](#)

[Arboretum Wespelaar](#)

KEY TO GROUPS

- 01 a Lamina margin coarsely dentate, predominantly with ≤12 teeth (-lobes)/side. **Group A**
- b Lamina margin finely serrate, predominantly with 20-numerous teeth/side. 02
- 02 a Lamina length predominantly 10-20(-more) cm AND LS green to glaucous green AND base at least in part of the foliage cordate. **Group B**
- b Not this combination of characters: lamina length <12 cm, OR LS whitish OR base +/- truncate to cuneate. 03
- 03 a Lamina LS green AND petiole Ø laterally flattened, margin often hyaline. ... **Group C → p3**
- b Lamina LS whitish, OR petiole Ø terete to +/- angular, margin not hyaline. . **Group D → p3**

GROUP A

Lamina margin coarsely dentate, predominantly with ≤12 teeth (-lobes)/side.

- 01 a Lamina LS predominantly greyish white to white pubescent, margin irregularly lobed and coarsely dentate. ***P. alba***
- b Lamina LS predominantly green, margin rather uniformly coarsely dentate. 02
- 02 a Lamina predominantly ovate (to elliptic). Marginal teeth apex rather acute (10× LENS).
..... ***P. grandidentata***
- b Lamina predominantly orbicular. Marginal teeth apex rather rounded (10× LENS).
..... ***P. tremula***

GROUP B

Lamina length predominantly 10-20(-more) cm AND LS green to glaucous green
AND base at least in part of the foliage cordate.

- 01 a Lamina margin hyaline (10× LENS) ***P. deltoides***
- b Lamina margin not hyaline (10× LENS) 02
- 02 a Larger leaves with petiole predominantly 4-8 cm. ***P. szechuanicca* var. *tibetica***
- b Larger leaves with petiole predominantly 8-13(-more) cm. 03
- 03 a Lamina base rounded to (sub-)cordate, secondary veins 7-9/side. ***P. glauca***
- b Lamina base strongly cordate, secondary veins 6-7/side. ***P. lasiocarpa***

GROUP C
Lamina LS green AND petiole Ø laterally flattened, margin often hyaline.

- 01 a Lamina ovate to rhombic-orbicular, apex +/- abruptly acute to slightly acuminate. 02
 b Lamina ovate to triangular, apex gradually acuminate to caudate. 03
- 02 a Lamina largest width in or below middle, margin subentire to finely crenate-serrate (10× LENS). *P. tremuloides*
 b Lamina largest width in or above middle, margin crenate-serrate (10× LENS). *P. sieboldii*
- 03 a Lamina base cordate, in part of the foliage rounded to cuneate. *P. adenopoda*
 b Lamina base truncate to cuneate. 04
- 04 a Midvein/lower most secondary vein angle ≤45°. *P. deltoides*
 b Midvein/lower most secondary vein angle ≥60°. 05
- 05 a Lamina marginal teeth +/- 1 mm. *P. nigra*
 b Lamina marginal teeth often 2-5 mm. *P. fremontii*

GROUP D
Lamina LS whitish,
OR petiole Ø terete to +/- angular, margin not hyaline.

- 01 a Lamina lanceolate, L/W ratio +/- 5/1. *P. angustifolia*
 b Lamina elliptic or, obovate, L/W ratio ≤2/1. 02
- 02 a Long shoot Ø angular. 03
 b Long shoot Ø roundish. 05
- 03 a Lamina elliptic to ovate elliptic, petiole predominantly 3 cm. *P. laurifolia*
 b Lamina ovate to triangular ovate, petiole predominantly 3-5(-more) cm. 04
- 04 a Lamina rather triangular ovate, largest width near base. *P. trichocarpa*
 b Lamina rather roundish ovate, largest width approaching the middle. *P. yunnanensis*
- 05 a Lamina US rather rugose. 06
 b Lamina US rather smooth. 09
- 06 a Lamina largest width in or above the middle. 07
 b Lamina largest width at least in part of the foliage clearly below the middle. 08

- 07 a Lamina broadly elliptic to broadly obovate-elliptic, apex always conduplicate/twisted (usually with more pubescence on veins and ciliate margin - 10x LENS). *P. maximowiczii*
- b Lamina elliptic to oblong-elliptic, apex sometimes slightly conduplicate/twisted (usually rather glabrous, margin not ciliate - 10x LENS). *P. koreana*
- 08 a Lamina margin crenate to minutely glandular (10x LENS). *P. suaveolens*
- b Lamina margin conspicuously glandular crenate (10x LENS). *P. purdomii*
- 09 a Lamina largest width in or above the middle. *P. simonii*
- b Lamina largest width below the middle. 10
- 10 a Lamina margin conspicuously glandular crenate and ciliate (10x LENS). *P. ciliata*
- b Lamina margin glabrous and crenate to minutely glandular (10x LENS). 11
- 11 a Short shoot lamina ovate to deltoid ovate. *P. balsamifera*
- b Short shoot lamina roundish ovate. *P. cathayana*

Taxa treated in this identification key.

P. adenopoda
P. alba
P. angustifolia
P. balsamifera
P. cathayana
P. ciliata
P. deltooides
P. fremontii
P. glauca
P. grandidentata
P. koreana
P. lasiocarpa

P. laurifolia
P. maximowiczii
P. nigra
P. purdomii
P. sieboldii
P. simonii
P. suaveolens
P. szechuanica var. *tibetica*
P. tremula
P. tremuloides
P. trichocarpa
P. yunnanensis

Taxa referred to synonymy in this identification key.

P. angulata = *P. deltooides*
P. arizonica = *P. fremontii*
P. palmeri = *P. deltooides*
P. sargentii = *P. deltooides*

P. tacamahacca = *P. balsamifera*
P. violascens = *P. szechuanica*
P. wilsonii = *P. glauca*
P. wislizenii = *P. deltooides*

Remarks.

Hybrids within the genus are countless. Be aware that a lot of plants in collections are probably growing under a wrong name.

P. koreana, *P. maximowiczii* and *P. purdomii* are very close and regarded as synonyms of *P. suaveolens* fide some authorities.

