



Ghent University Botanical Garden

***Buddleja* L. (Scrophulariaceae)**

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 pubescence and leaf margin incisions.
- 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: → [page 6](#).

Taxa referred to synonymy in this key: → [page 6](#).

Remarks: → [page 6](#).

References:

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

Bean, W.J. & Clarke, D.L. - (1976) - *Buddleja* in Bean's Trees and Shrubs hardy in the British Isles 1, p.445-458. – and [Trees and Shrubs online](#)

Krüssmann, G. - (1977) - *Buddleja* in Handbuch der Laubgehölze 1, p.258-265.

Leeuwenberg, A.J.M. - (1979) - The Loganiaceae of Africa, *Buddleja*, Revision of the African and Asiatic species in Med. Landbouwhogeschool Wageningen 79-6, 163p.

Norman, E. - (2000) - Buddlejaceae in Flora Neotropica 81, 225p.

Stuart, D.D. - (2006) - Buddlejias (Royal Horticultural Society Plant Collector Guide), 192p.

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[Plantentuin Universiteit Gent](#)

[Arboretum Wespelaar](#)

KEY to GROUPS

- 01 a Mature lamina margin always entire. **GROUP A** ↓ p2
- b Mature lamina margin not entire, OR at least not entire in part of the mature foliage. ... 02
- 02 a Mature lamina margin lobed, OR minutely to coarsely crenate/dentate with predominantly <25 teeth/side. 03
- b Mature lamina margin dentate to crenulate, with 25-100(-more) teeth/side at least in part of the mature foliage. 04
- 03 a Lamina base cordate to sagittate or truncate at least in part of the foliage. **GROUP B** → p3
- b Lamina base predominantly cuneate to rounded. **GROUP C** → p3
- 04 a Interpetiolar auricles conspicuous (10× LENS). **GROUP D** → p4
- b Interpetiolar auricles usually absent. 05
- 05 a Lamina sessile/amplexicaul, OR petiole conspicuously broadly winged. ... **GROUP E** → p4
- b Lamina with clearly developed narrow petiole. **GROUP F** → p5

GROUP A

Mature lamina margin always entire.

- 01 a Lamina apex predominantly obtuse to acute. 02
- b Lamina apex predominantly acute to acuminate. 05
- 02 a Leaves always alternate. **B. alternifolia**
- b Leaves predominantly opposite. 03
- 03 a Lamina L/W ratio >5/1. **B. saligna**
- b Lamina L/W ratio predominantly <4/1. 04
- 04 a Lamina margin LS recurved. Shoot, petiole and lamina LS whitish-grey pubescent (10× LENS). **B. caryopteridifolia**
- b Lamina margin LS flat. Shoot, petiole and lamina LS yellowish to brownish pubescent. **B. coriacea**
- 05 a Lamina L/W ratio >6/1. 06
- b Lamina L/W ratio predominantly <3/1. 07
- 06 a Shoot, petiole and lamina LS pubescence rather white and appressed. **B. longiflora**
- b Shoot, petiole and lamina LS pubescence rather tan and floccose. **B. speciosissima**
- 07 a Lamina secondary veins predominantly 45-60° to midvein. **B. madagascariensis**
- b Lamina secondary veins predominantly ≤45° to midvein. 08

- 08 a Shoot, petiole and lamina LS glabrous or almost so (10x LENS). **B. lindleyana**
 b Shoot, petiole and lamina LS stellate pubescent. 09
- 09 a Lamina apex +/- acute. Shoot, petiole and lamina LS whitish pubescent. **B. parviflora**
 b Lamina apex acuminate to caudate. Shoot, petiole and lamina LS yellowish tan pubescent. **B. curviflora**

GROUP B
 Lamina base cordate to sagittate or truncate at least in part of the foliage.

- 01 a Lamina margin regularly lobed. **B. glomerata**
 b Lamina margin minutely to coarsely dentate, or irregularly coarsely dentate to lobed. .. 02
- 02 a Lamina base cordate AND margin scattered denticulate. **B. madagascariensis**
 b Lamina base variably cordate to sagittate or truncate, OR margin (coarsely) crenate to dentate. 03
- 03 a Lamina base predominantly cuneate to truncate or shallowly cordate/sagittate. 04
 b Lamina base deeply cordate/sagittate at least in part of the foliage. 06
- 04 a Lamina midvein length predominantly ≤ 4 cm. **B. marrubiifolia**
 b Lamina midvein length predominantly 5-12(-more) cm. 05
- 05 a Lamina largest width near the middle. **B. farreri**
 b Lamina largest width near the base. **B. tibetica**
- 06 a Petiole predominantly ≤ 12 mm. **B. crispa**
 b Petiole 12-60 mm. 07
- 07 a Lamina secondary veins predominantly 3-4(-5)/side. **B. dysophylla**
 b Lamina secondary veins predominantly 5-7(-10)/side. 08
- 08 a Lamina midvein length predominantly ≤ 7 cm, secondary veins 5-7/side. **B. sterniana**
 b Lamina midvein length 7-14(-more) cm, secondary veins 7-10/side. **B. agathosma**

GROUP C
 Lamina base predominantly cuneate to rounded.

- 01 a Lamina margin +/- entire to dentate with 3-5 coarse obtuse teeth-lobes/side. **B. indica**
 b Lamina margin +/- entire to denticulate or dentate with 6-20 teeth/side. 02
- 02 a Petiole remarkably short < 3 mm. **B. heliophylla**
 b Petiole 5-15(-more) mm. 03

03 a	Lamina base cuneate to attenuate and remarkably decurrent.	04
b	Lamina base cuneate to rounded.	06
04 a	Mature lamina US without long armed stellate hairs.	<i>B. tucumanensis</i>
b	Mature lamina US with obvious long armed stellate hairs (10× LENS).	05
05 a	Lamina midvein length predominantly <12 cm.	<i>B. officinalis</i>
b	Lamina midvein length predominantly 10-25 cm.	<i>B. stachyoides</i>
06 a	Lamina LS greenish.	07
b	Lamina LS whitish to tan.	08
07 a	Shoot conspicuously winged. Lamina apex acute to acuminate.	<i>B. japonica</i>
b	Shoot terete to angled. Lamina apex caudate.	<i>B. venenifera f. calvescens</i>
08 a	Interpetiolar auricles conspicuous (10× LENS) <u>AND</u> lamina width <3 cm.	<i>B. auriculata</i>
b	Interpetiolar auricles absent, <u>OR</u> lamina width 3-6(-more) cm.	09
09 a	Lamina apex acuminate to caudate.	<i>B. curviflora</i>
b	Lamina apex acute to acuminate.	10
10 a	Lamina base rounded.	<i>B. parviflora</i>
b	Lamina base cuneate.	<i>B. paniculata</i>

<p>GROUP D</p> <p>Interpetiolar auricles conspicuous (10× LENS).</p>
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01 a	Lamina (sub)sessile.	02
b	Lamina with petiole clearly developed.	03
02 a	Lamina midvein length predominantly 6-12 cm, L/W ratio $\geq 3/1$	<i>B. salviifolia</i>
b	Lamina midvein length predominantly 3-6 cm, L/W ratio $\leq 3/1$	<i>B. verbascifolia</i> HORT
03 a	Mature lamina base cuneate to rounded.	04
b	Mature lamina base narrowly cuneate.	05
04 a	Mature leaves with petiole <5 mm.	<i>B. davidii</i>
b	Mature leaves with petiole 5-10 mm.	<i>B. albiflora</i>
05 a	Lamina margin at mid-leaf with teeth apiculi very asymmetric.	<i>B. macrostachya</i>
b	Lamina margin at mid-leaf with teeth apiculi sub-symmetric: approaching middle of tooth.	<i>B. pterocaulis</i>

GROUP E

Lamina sessile/amplexicaul or petiole conspicuously broadly winged.

- 01 a Lamina L/W ratio $\geq 5/1$ **B. araucana**
 b Lamina L/W ratio $< 5/1$ 02
- 02 a Lamina LS quaternary vein pattern + small areoles quite visible (10x LENS). **B. salviifolia**
 b Lamina LS quaternary vein pattern invisible. 03
- 03 a Lamina LS tertiary vein pattern almost invisible (10x LENS).
 **B. crotonoides** subsp. **amplexicaulis**
 b Lamina LS tertiary vein pattern quite visible. **B. sessiliiflora**

GROUP F

Lamina with clearly developed narrow petiole.

- 01 a Lamina L/W ratio $> 4/1$ 02
 b Lamina L/W ratio predominantly $< 4/1$ 04
- 02 a Lamina apex acute. **B. loricata**
 b Lamina apex acuminate to caudate. 03
- 03 a Lamina US conspicuously finely rugose (10x LENS). **B. globosa**
 b Lamina US veinlets scarcely impressed. **B. asiatica**
- 04 a Petiole 2-3(-more) cm. **B. cordata**
 b Petiole < 2 cm. 05
- 05 a Shoot and petiole moderately stellate pubescent: surface visible (10x LENS). 06
 b Shoot and petiole densely pubescent: surface completely covered by pubescence. 08
- 06 a Shoot variable rounded quadrangular to sub terete. **B. colvilei**
 b Shoot clearly quadrangular to winged. 07
- 07 a Shrub to small tree 1-6 m. Shoot quadrangular to narrowly winged. **B. forrestii**
 b Shrub < 2 m. Shoot conspicuously winged. **B. limitanea**
- 08 a Shoot, petiole and lamina LS tan coloured. **B. megalocephala**
 b Shoot, petiole and lamina LS greyish white. 09
- 09 a Lamina midvein length < 15 cm **AND** lamina base cuneate. **B. fallowiana**
 b Lamina midvein length predominantly > 15 cm, lamina base roundish to cuneate. 10

- 10 a Mature lamina margin dentate to crenate-dentate, with teeth only in part apiculate. ***B. stenostachya***
- b Mature lamina margin coarsely dentate, with teeth always apiculate. 11
- 11 a Mature lamina midvein length 10-25(-30) cm. ***B. nivea***
- b Mature lamina midvein length 25-50 cm. ***B. yunnanensis***

Taxa treated in this identification key.

B. agathosma
B. albiflora
B. alternifolia
B. araucana
B. asiatica
B. auriculata
B. caryopteridifolia
B. colvilei
B. cordata
B. coriacea
B. crispa
B. crotonoides subsp. *amplexicaulis*
B. curviflora
B. davidii
B. dysophylla
B. fallowiana
B. farreri
B. forrestii
B. globosa
B. glomerata
B. heliophila
B. indica
B. japonica
B. limitanea

B. lindleyana
B. longiflora
B. loricata
B. macrostachya
B. madagascariensis
B. marrubifolia
B. megaloccephala
B. nivea
B. officinalis
B. paniculata
B. parviflora
B. pterocaulis
B. saligna
B. salviifolia
B. sessiliflora
B. speciosissima
B. stachyoides
B. stenostachya
B. sterniana
B. tibetica
B. tucumanensis
B. venenifera f. *calvescens*
B. verbascifolia HORT
B. yunnanensis

Taxa referred to synonymy in this identification key.

B. curvifolia = *B. japonica*
B. delavayi = *B. heliophila*
B. hemsleyana = *B. albiflora*

B. nappei = *B. araucana*
B. verbascifolia = *B. americana*

Remarks.

Some plants under the name *Buddleja americana* and its synonym *B. verbascifolia*, with small ovate +/- amplexicaul leaves and conspicuous auricles do not belong to this taxon and are previously kept here under the name *B. verbascifolia* Hort. Fide Eliane Norman and John Chau the identity of this plant remains unclear.

Plants in cultivation under the name *B. longifolia* (with short petiole and inflorescence long and narrow) are often *B. davidii*.

Plants in cultivation under the name *B. myriantha* (without interpetiolar stipules) are usually *B. curviflora* or *B. venenifera*.

