

Symposium proceedings

The Lebbeke Salicetum and Wilgenzoeker (Willow Key) website

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Abstract

A brief introduction to a project launched in 2009, *The creation of a willow collection (Salicetum) in Lebbeke, Belgium* and the website Wilgenzoeker (Willow Key) is given.

Keywords: bees, education, Lebbeke, Salicaceae, Salicetum, *Salix*, website Wilgenzoeker

Lebbeke Salicetum

The creation and management of the Lebbeke Salicetum is a joint project between the local environmental organization, Natuurpunt, and the community of Lebbeke. The Salicetum is situated next to the Heizijde station on the Brussels-Dendermonde railway line. It lies along the Brabantsebeek, a creek of an above-ground water reservoir, one of six such reservoirs that were originally constructed to prevent flooding in the area. The erstwhile natural valley had disappeared following housing construction. To make the Salicetum more accessible, a walkway runs through it (Figs. 1–4).



Figure 1. Walkway through the Salicetum, 17 May 2019



Figure 2. Entrance to the Salicetum, 17 May 2019



Figure 3. View of the Salicetum, 17 May 2019



Figure 4. The Salicetum is situated along a railway line, 17 May 2019

The planting of *Salix* was begun in 2009 so that the plants would be in place for the International Year of Biodiversity which was to be celebrated throughout 2010 to draw attention to the importance of biological diversity. The main aim of the Salicetum was to illustrate plant biodiversity within the Salicaceae family (Table 1 and Figures 5–24 in Appendix). Willows were planted, covering an area of approximately 1500 m². It should be stressed that the arboretum is not a nature reserve. Indeed, it hosts both alien and indigenous *Salix* taxa, some of them still needing to be identified.

Table 1 lists all the willows that are growing in the Salicetum, including those that were already present and those that have been planted as part of the project. The names of the taxa, authors' abbreviations and places of publication follow the nomenclatural database, International Plant Name Index (IPNI, 2020). Taxonomy is given as in Belyaeva & Govaerts (2020) except for the names marked with asterisk. The names of taxa accepted by the author of this paper are given in bold.

Table 1. List of taxa at the Lebbeke Salicetum (25 June 2019)

№.	Name	Origin, collector, date
1.	<i>Salix acutifolia</i> Willd. ♂	Belgium, Beervelde, beekeepers' plantation, 2009
2.	<i>Salix adenophylla</i> Hook. = <i>S. cordata</i> Michx.	Belgium, Lebbeke, private collection Joost Verbeke, 2018
3.	<i>Salix aegyptiaca</i> L. ♂	Belgium, Beervelde, beekeepers' plantation, 2009
4.	<i>Salix alba</i> L. var. <i>vitellina</i> (L.) Stokes = <i>S.</i> × <i>fragilis</i> L. f. <i>vitellina</i> (L.) I.V.Belyaeva	Belgium, Moerzeke, Karmel Abbey, 2018
5.	<i>Salix apennina</i> A.K.Skvortsov ♂ [Fig. 5]	Belgium, Moerzeke, Karmel Abbey, 2013
6.	<i>Salix appendiculata</i> Vill. ♂	Belgium, Meise Botanic Garden, 2009
7.	<i>Salix aurita</i> L. ♀	Belgium, Lebbeke, Private collection Pol Meert, 2009

8.	<i>Salix babylonica</i> L. 'Crispa' ♀	Belgium, Aalst, Swimming Pool Park, 2012
9.	* <i>Salix babylonica</i> L. 'Tortuosa'	Belgium, Lebbeke, private collection Pol Meert, 2014
10.	<i>Salix</i> × 'Bögelsack' (<i>S. aegyptiaca</i> L. × <i>S. caprea</i> L.) ♂ [Fig. 6–9]	Belgium, Beervelde, beekeepers' plantation, 2009
11.	* <i>Salix</i> × <i>calodendron</i> Wimm. (<i>S. caprea</i> L. × <i>S. cinerea</i> L. × <i>S. viminalis</i> L.) ♀	Belgium, Moerzeke, Karmel Abbey, 2015
12.	<i>Salix caprea</i> L. ♂	Belgium, Lebbeke, private collection Pol Meert, 2009
13.	<i>Salix caprea</i> L. × <i>S. cinerea</i> L. × <i>S. viminalis</i> L. ♂	Belgium, Aalst, Swimming Pool Park, 2016
14.	<i>Salix caprea</i> L. × <i>S. udensis</i> Trautv. & C.A.Mey. 'Sekka' ♀ [Fig. 10]	Belgium, Buggenhout, Cultural Center De Pit, 2013
15.	<i>Salix</i> × <i>capreola</i> A.Kern. ex Andersson (<i>S. aurita</i> L. × <i>S. caprea</i> L.) ♀	Belgium, Dendermonde, river Scheldt alluvial plains, 2018
16.	<i>Salix cinerea</i> L. ♀ [Fig. 11]	Belgium, Zomergem, private collection Joost Verbeke, 2016
17.	<i>Salix cinerea</i> L. ssp. <i>oleifolia</i> Macreight = <i>S. atrocinerea</i> Brot.	Belgium, Lebbeke, private collection Pol Meert, 2017
18.	<i>Salix</i> × <i>confinis</i> A.Camus & E.G.Camus (<i>S. aurita</i> L. × <i>S. cinerea</i> L. × <i>S. purpurea</i> L.) ♀ [Fig. 12]	Belgium, Aalst, Swimming Pool Park, 2016
19.	<i>Salix daphnoides</i> Vill. ♂ [Fig. 13]	Belgium, Beervelde, beekeepers' plantation, 2018
20.	<i>Salix eleagnos</i> Scop. ♀ [Fig. 14]	Belgium, Lebbeke, planted, 2013
21.	<i>Salix</i> × <i>erdingeri</i> A.Kern. (<i>S. caprea</i> L. × <i>S. daphnoides</i> Vill.) ♂ [Fig. 15]	Belgium, Sint-Amands, river Scheldt cay, 2016
22.	<i>Salix eriocephala</i> Michx. 'Russelliana' ♂	Belgium, Meise Botanic Garden, 2009
23.	<i>Salix euxina</i> I.V.Belyaeva ♂	Belgium, Oostkamp, private collection Arnout Zwaenepoel, 2015
24.	<i>Salix exigua</i> Nutt. ♂	Belgium, Aalst, Swimmig Pool Park, 2014
25.	* <i>Salix</i> × <i>fragilis</i> L. f. <i>basfordiana</i> (Scaling ex J.Salter) P.D.Sell ♀	Belgium, Dendermonde, river Scheldt bank, 2009
26.	<i>Salix</i> × <i>fragilis</i> L. var. <i>russelliana</i> (Sm.) W.D.J. Koch	Belgium, Lebbeke, private collection Pol Meert, 2014
27.	<i>Salix</i> × <i>friesiana</i> Andersson (<i>S. repens</i> L. × <i>S. viminalis</i> L.) ♀ [Fig. 16]	Belgium, Grimminge, Domain De Helix, 2009
28.	<i>Salix</i> × <i>fruticosa</i> Döll (<i>S. aurita</i> L. × <i>S. viminalis</i> L.) ♀	Belgium, Zomergem, private collection Joost Verbeke, 2018
29.	<i>Salix gmelinii</i> Pall. 'Gewone Kletters' ♀ [Fig. 17–19]	Belgium, Dendermonde, river Scheldt embankment, 2009
30.	<i>Salix gmelinii</i> Pall. 'Kattekletters' ♀	Belgium, Dendermonde, river Scheldt embankment, 2015
31.	<i>S. gracilistyla</i> f. <i>melanostachys</i> (Makino) H.Obashi ♂	The Netherlands, Boskoop, Nursery Esveld (gift), 2015
32.	<i>Salix integra</i> Thunb. 'Hakuro-Nishiki' ♀	Belgium, Lebbeke, private collection Pol Meert, 2009
33.	<i>Salix irrorata</i> Andersson ♂	Belgium, Oostduinkerke, 2014
34.	<i>Salix koriyanagi</i> Kimura ex Goerz.	Belgium, Zomergem, private collection Joost Verbeke, 2018
35.	<i>Salix</i> 'Kroonveldwilg' ♂ (Fig. 20–21)	Belgium, Lebbeke, 2018
36.	<i>Salix</i> × <i>leiophylla</i> A.Camus & E.G.Camus (<i>S. purpurea</i> L. × <i>S. triandra</i> L.) ♀	Belgium, Bornem, river Scheldt bank, 2009
37.	<i>Salix</i> × <i>meyeriana</i> Rostk. ex Willd. (<i>S. euxina</i> I.V.Belyaeva × <i>S. pentandra</i> L.) ♀	Belgium, Moerzeke, Karmel Abbey, 2015
38.	<i>Salix miyabeana</i> Seemen	Belgium, Zomergem, private collection Joost Verbeke, 2018
39.	<i>Salix</i> × <i>mollissima</i> Hoffm. ex. Elwert var. <i>undulata</i> (Ehrh.) Wimm. (<i>S. triandra</i> L. × <i>S. viminalis</i> L.) ♀ [Fig. 22]	Belgium, Sint-Amands, river Scheldt embankment, 2015

40.	<i>Salix</i> × <i>multinervis</i> Döll (<i>S. aurita</i> L. × <i>S. cinerea</i> L.) ♀	Belgium, Dendermonde, river Scheldt bank, 2009
41.	<i>Salix</i> × <i>multinervis</i> Döll (<i>S. aurita</i> L. × <i>S. cinerea</i> L.) ♂	Belgium, Dendermonde, river Scheldt bank, 2009
42.	<i>Salix</i> × <i>multinervis</i> Döll (<i>S. aurita</i> L. × <i>S. cinerea</i> L.)	Belgium, Buggenhout, cultural center De Pit, 2018
43.	<i>Salix myrsinifolia</i> Salisb. ♂	Belgium, Beervelde, beekeepers' plantation, 2014
44.	<i>Salix myrsinifolia</i> Salisb. ♂	Belgium, Beervelde, beekeepers' plantation, 2009
45.	<i>Salix</i> × <i>pendulina</i> Wender. f. <i>erythroflexuosa</i> I.V.Belyaeva ♀	Belgium, Meise Botanic Garden, 2009
46.	<i>Salix pentandra</i> L. ♀	Belgium, Beervelde, beekeepers' plantation, 2009
47.	<i>Salix pseudopentandra</i> (Flod.) Flod.	Belgium, Zomergem, private collection Joost Verbeke, 2018
48.	<i>Salix purpurea</i> L. f. <i>purpurea</i> ♀	Belgium, Dendermonde, river Scheldt embankment, 2009
49.	<i>Salix purpurea</i> L. f. <i>gracilis</i> Wimm. ♀	Belgium, Bonheiden, Salicetum Sonja Deneve, 2017
50.	<i>Salix pyrifolia</i> Andersson	Belgium, Zomergem, private collection Joost Verbeke, 2017
51.	<i>Salix schraderiana</i> Willd. = <i>S. bicolor</i> Ehrh. ex Willd. ♂	Germany, Vaale, Eggert Nursery, 2016
52.	<i>Salix schwerinii</i> E.L.Wolf	UK, West Wales Willows, 2017
53.	<i>Salix silesiaca</i> Willd.	Belgium, Zomergem, private collection Joost Verbeke, 2018
54.	<i>Salix</i> × <i>smithiana</i> Willd. ♀	Belgium, Lebbeke, nature reserve Hof ten Dijke, 2016
55.	<i>Salix triandra</i> L. ♂ [Fig. 23]	Belgium, Dilsen-Stokkem, former arm of river Maas, 2009
56.	<i>Salix triandra</i> L. 'Groene Reins' ♂	Belgium, Dendermonde, river Scheldt embankment, 2009
57.	<i>Salix triandra</i> L. 'Grote Grijze Wis'	Belgium, Dilsen-Stokkem, former arm of river Maas, 2009
58.	<i>Salix triandra</i> L. 'Kleine Grijze Wis' ♂	Belgium, Dilsen-Stokkem, former arm of river Maas, 2009
59.	<i>Salix triandra</i> L. 'Noir de Villaines' ♀	Belgium, Lebbeke, private collection Pol Meert, 2009
60.	<i>Salix udensis</i> Trautv. & C.A.Mey. 'Sekka' ♂	Belgium, Beervelde, beekeepers' plantation, 2009
61.	<i>Salix viminalis</i> L. [Fig. 24] ♀	Belgium, Dendermonde, Vlassenbroek, river river Scheldt bank, 2015
62.	<i>Salix viminalis</i> L. 'Gele Wiedauw' ♀	Belgium, Dendermonde, river Scheldt embankment, 2009
63.	<i>Salix viminalis</i> L. 'Rode Wiedauw'	Belgium, Moerzeke, Grote Roggeman, upper area of the river Scheldt, 2018
64.	<i>S. viminalis</i> L. × <i>Salix udensis</i> Trautv. & C.A.Mey. 'Sekka' ♂	Belgium, Dendermonde, plot adjoining rugby field, 2017

Different activities are organised in the Lebbeke Salicetum, such as: (a) educational activities centred around *Salix*; (b) educational tours for school classes; (c) excursions and courses; (d) individual and group recreational walks; (e) botanic work groups; (f) insect work group "Voelspriet"; (g) information for beekeepers' organisations. Beehives in the arboretum ensure an annual yield of honey for the beekeepers.

Visitors are most welcome at the Lebbeke Salicetum which can be found at:-

Fochelstraat, next to nr. 40
9280 Lebbeke, Belgium

Information may be obtained from:-

Community of Lebbeke
Environmental service
Flor Hofmanslaan 1
9280 Lebbeke
Tel. +325246 82 47
www.lebbeke.be

or from:-

Natuurpunt afdeling 's Heerenbosch
<http://www.natuurpunt-sheerenbosch.be>

De Wilgenzoeker (Willow Key)

<https://sites.google.com/site/dewilgenzoeker20c>

This is an alternative determination key, written by volunteers/salicophiles and it is supported by many photographs, articles and an extensive literature list. De Wilgenzoeker website, which has been developed by Pol Meert with the help of Sonja Deneve and Joost Verbeke, offers faster transfer of recent information and is thus considered a very valuable tool.

On the one hand, this atypical key enables direct determination of taxa in the field through the striking-characteristics-rule, i.e. the use of the senses: SEE – FEEL – SMELL – TASTE. On the other hand, a species list directs visitors to individual descriptions of taxa. Both native and alien species are mentioned in De Wilgenzoeker. This stimulates the search for, and discovery of rare taxa in the region.

Striking characteristics page



Figure 25. Willow Key - Striking Characteristics – (screenshot)

<https://sites.google.com/site/dewilgenzoeker20c>

The golden rule to be applied:

- What do I see?
- What don't I see?
- At this point in time.

Thus, the purpose is to zoom in on *striking characteristics* of each taxon.

Some examples

Example 1: What do I see?

Figure 26 shows one of the very characteristic features of *Salix acutifolia*, i.e. twigs with dense glaucous bloom.



Figure 26. *Salix acutifolia* Willd.
(19 November 2015)

Example 2: What don't I see, i.e. which characteristics of Salix-species are not present?

Figure 27 does not show a sparse indumentum of short, stiff rusty hairs on the downside of the leaves.



Figure 27. *Salix cinerea* L. (21 July 2018)

Example no 3: At this point in time and space

Figure 28 shows the typical summer pseudo-stipules as well as the red-coloured young twigs of *Salix × fragilis* var. *russelliana*



Figure 28. *Salix* × *fragilis* L. var. *russelliana* (Sm.) W.D.J.Koch (21 July 2018)

Example no. 4: in some species, leaves turn black when dried.
Figure 29 illustrates this feature.



Figure 29. *Salix myrsinifolia* Salisb. – leaves turning black when dried (31 October 2014)

Species and hybrids list page

A number of taxa are listed in alphabetical order, enabling a direct search. Both native and alien species are mentioned in *De Wilgenzoeker*. This also stimulates the search for, and discovery of rare taxa in the region.

Soortenlijst - De Wilgenzoeker 2-0 C

Salix alba Schietwilg 11ab
Salix alba var. alba Gewone schietwilg 11ac
Salix alba var. caerulea Brede schietwilg 11ad
Salix alba var. vitellina Gele schietwilg 11ae
Salix 'Americana' Amerikaantje 11d
Salix amplexicaulis geen Nederlandse naam 8j; 12j
Salix apennina Apennijnse bergwilg 13s
Salix atrocinerea Rossige wilg 13 b; Bijlage 2
Salix aurita Geoorde wilg 13d
Salix babylonica 'Crispa' Kronkelwilg cv. 'Crispa' 3e
Salix babylonica f. tortuosa (syn. matsudana) Kronkelwilg Krulwilg Paastakken 4a
Salix balsamifera 'Mas' syn. pyrifolia, Balsemwilg Bijlage 3
Salix bicolor nog geen gegevens
Salix caesia nog geen gegevens
Salix caprea Boswilg 6a; 13w
Salix caprea var. sphacelata Boswilg var. sphacelata 6b
Salix cinerea ssp. cinerea Grauwe wilg 13a
Salix cinerea ssp. oleifolia Rossige wilg 13b; Bijlage 2
Salix daphnoides Berijpte wilg 1c; 11c
Salix elaeagnos (de wilde vorm) Bijlage 3
Salix elaeagnos ssp. angustifolia Grijze wilg, ook Rozemarijnbladige wilg 1aa
Salix eriocephala Amerikaantje 11d
Salix euxina Turkse kraakwilg 11s; Bijlage 1

Figure 30. Willow Key – Species and hybrids (screenshot) <https://sites.google.com/site/dewilgenzoeker20c>

The *De Wilgenzoeker* website is user-friendly and contains a great deal of valuable up-to-date information that can be quickly updated. Thus, this website is a very useful additional tool in willow identification.

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References

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International Plant Names Index (IPNI). 2020. <https://beta.ipni.org/> (Accessed 10 September 2020).

Appendix



Figure 5. *Salix apennina* A.K.Skvortsov, habit (left) and male catkins (right), 5 April 2018



Figure 6. *Salix* × 'Bögelsack', buds,
11 November 2015



Figure 7. *Salix* × 'Bögelsack', male catkin,
16 March 2016



Figure 8. *Salix* × 'Bögelsack', habit, 20 February 2016



Figure 9. *Salix* × 'Bögelsack', buds, 20 February 2016



Figure 10. *Salix caprea* L. × *S. udensis* Trautv. & C.A.Mey. 'Sekka', fasciated branch, 23 July 2016



Figure 11. *Salix cinerea* L., female catkins, 17 April 2016



Figure 12. *Salix* × *confinis* A.Camus & E.G.Camus, female catkins, 7 April 2018



Figure 13. *Salix daphnoides* Vill., petioles (left) and buds (right), 25 September 2018



Figure 14. *Salix eleagnos* Scop., leaves, 9 November 2013



Figure 15. *Salix* × *erdingeri* A.Kern., buds, 19 November 2015



Figure 16. *Salix* × *friesiana* Andersson, leaves, 27 July 2018



Figure 17. *Salix gmelinii* Pall. ‘Gewone Kletters,’ leaves, 23 August 2014



Figure 18. *Salix gmelinii* Pall. ‘Gewone Kletters,’ female catkins, 13 March 2018



Figure 19. *Salix gmelinii* Pall. ‘Gewone Kletters,’ habit, 13 March 2018



Figure 20. *Salix* 'Kroonveldwilg,' habit, 4 November 2018



Figure 21. *Salix* 'Kroonveldwilg,' buds and leaves, 4 November 2018



Figure 22. *Salix* \times *mollissima* Hoffm. ex. Elwert var. *undulata* (Ehrh.) Wimm., twig, 14 August 2015



Figure 23. *Salix triandra* L., male catkins, 21 April 2018



Figure 24. *Salix viminalis* L., leaves, 10 October 2015