

# Bees and Buxus

## Author:

Didier Hermans  
Herplant BV  
Lilsedijk 80, 2340 Beerse - België

## 1 | INTRODUCTION

“Bees and Buxus” is rather an unusual title because most people have absolutely no idea that Boxwood is an important bee plant. In my previous articles on this subject, I have focused mainly on the honeybees that forage en masse on flowering Boxwood. In this article, I want to focus primarily on the observations of wild bees and other beneficial insects on flowering Boxwood in 2021 and 2022. I notice that there is still a lot of ignorance on this topic and mostly biased reports appear in the media. I am also surprised that when it comes to biodiversity, the so-called “garden plants” are often overlooked, although they play an important role in our current ecosystems.

## 2 | FLOWERING TIMES AND HOST PLANTS

Worldwide the genus *Buxus* has more than 100 wild species. Most of these are tropical and cannot thrive in our temperate climate. In Europe, *Buxus balearica* and *Buxus sempervirens* are indigenous. The latter we also find in many gardens and is a native plant in Belgium.

Besides the common *Buxus sempervirens* we have a whole collection of Asian species. The flowering times vary depending on the species. The last 10 years we have intensively monitored the flowering times.



Flowering time Buxus			
Year	<i>Buxus microphylla</i> var.koreana	<i>Buxus sempervirens</i>	<i>Buxus balearica</i>
2013	20 February	25 March	15 April
2014	15 February	7 April	12 April
2015	1 March	15 April	19 April
2016	10 March	8 April	30 April
2017	1 March	30 March	24 April
2018	15 February	15 April	25 April
2019	24 February	30 March	24 April
2020	15 February	18 March	15 April
2021	25 February	25 March	30 April
2022	5 February	21 March	27 April

The earliest flowering *Buxus* in our regions, *Buxus microphylla* var. *koreana*, is a Korean boxwood. It usually grows as a stocky shrub with very small leaves. Depending on the weather conditions, this boxwood sometimes blooms from the beginning of February with its strongly scented flowers. Flowers may be an exaggerated term for *Buxus* because they are usually small and inconspicuous but the bees certainly know how to find them.

From the end of March/beginning of April the main flowering of *Buxus sempervirens* and its cultivars starts. Most other Asian species also bloom in this period. The flowering of *Buxus* is concluded by *Buxus balearica* which usually ends around April 30.

The flowering times and especially the length of the flowering depend greatly on the weather. In dry cool days, flowering lasts exceptionally long as opposed to a short flowering period in rainy weather. This statement probably applies to most plants. In 2022, we observed massive flowering in all species. The dry spring also caused this bloom to be exceptionally longer than in other years.

Boxwood that is not pruned much or is already of a certain age will bloom every year. This has no negative effect on the plant and is a natural process. There is a lot of confusion about this also among so-called professionals in our sector. Usually they refer to plants that are in pots and undergo extreme conditions (no nutrition and insufficient water) and flower as a result. This is survival instinct of the plant and has nothing to do with normal growing conditions.

Boxwood blooms at a time when few other plants are in bloom and is therefore massively visited by a wide variety of beneficial insects. Both pollen and nectar are collected, crucial for the young bees and other insects.

According to several sources, both the pollen and nectar value of Buxus is catalogued with the highest score.

Gids van nectar-en stuifmeel voortbrengende planten: Lode Meert

<https://www.imkerpedia.nl/wiki/index.php/Drachtplanten>

<https://www.honeybeevalley.eu/plantit>

### 3 | OBSERVATIONS

This study is based on more than 600 observations on flowering boxwood in our nursery during 2021 and 2022. In 2021, monitoring was conducted from 31/3/2021 to 24/4/2021. In 2022 from 2/3/2022 to 17/5/2022.

It included monitoring a large colony of mining bees that developed on a landscaped heath border on the edge of our nursery.

These sightings were recorded on the website [www.waarnemingen.be](http://www.waarnemingen.be) with date, places and photos. This website has proved to be a great help in the determination of the different species and as a consultable database. Once logged in you can find this information under the name 'Didier Hermans'.

The observation itself took place in our nursery on flowering plants of various Buxus species. Most bees were photographed. Some wild species of bees are very shy and could not be photographed, or could only be photographed unclearly. A standard magnification of 5X was set.

Insects were observed very early in the spring at the budding of the first flowers of Korean boxwood. The temperature has to be high enough so that observations were usually made at noon or in the early afternoon. On rainy days, bees were much less active.

We observed not only bees but also large numbers of hoverflies. This insect species flies quite early in the spring and was observed in massive numbers, especially in 2022.

### 4 | BEE SPECIES AND HOVERFLIES

There are about 360 species of wild bees and about 340 different species of hoverflies in Belgium. Bees have 4 wings and long antennae. Hoverflies have 2 wings and short antennae. Hoverflies are very agile and can hover on the spot. Hoverflies mimic wasps and bees. They do this to deter their natural enemy. Yet they have no sting and are therefore harmless.

In addition to the described wild bees and hoverflies, 17 different species of flies were photographed foraging on flowering Buxus.

## BEES

### Honey bees (Apis):

Honey bees are the most common bee species kept in hives by beekeepers. They are used to pollinate agricultural and horticultural crops.





### Mining bees (*Andrena*):

The mining bees are with ca.100 species the largest genus of wild bees in Belgium. The size varies depending on the species from very small to larger than the honey bee. All mining bees dig their nests in the soil, preferably in sandy soils in a sunny location. In our nursery, we have a large sandy berm planted with *Calluna vulgaris* (heather) which is very popular with this species of bee.

Many species of mining bees forage on specific plants with some, according to the literature being restricted to 1 species. However, observations show that they certainly also fly on *Buxus* and that it rather depends the availability of good pollen and nectar at the time of their flight. Mining bees fly early in the spring as from March.

In total, about 18 different species of mining bees were observed. Tawney mining bees and Orange-tailed mining bees were the most frequently observed: see table of bee observations.

### Silk bees (*Colletes*):

Silk bees are medium-sized, hairy bees with usually an abdomen with striped bands. About ten species are found in Belgium. They make nests in sandy soil. The large silk bee was observed the most of all wild bees in our nursery. They nested en masse in a long heath berm, together with several Mining bees. It was striking that in spring, even before the flowering of willows, they foraged massively on *Buxus*.



### Nomad bees (*Nomada*):

These wild bees form a large genus of parasitic bees and get their name from the yellow-black markings that make them look like wasps. They do not collect pollen themselves and lay their eggs in the nest of other, mainly Mining bees. So they can always be found near the nests of digging bees and some Nomad bees have one specific host. In our nursery 2 species were observed.

### Blood bees (*Sphecodes*):

These wild bees are also parasitic and usually have a black and red abdomen. They lay their eggs in nests of often groove bees or other burrowing bees. 2 species were observed with the large blood bee primarily parasitizing the large silk bee.



### Furrow or Sweat bees (*Lasioglossum*):

This group consists of 2 genera and resembles mining bees. They also dig nests in mostly sandy soils. 3 different species were observed.

**Yellow-faced bees (Hylaeus):**

These bees are small, bald and usually shiny black with a small mask-like yellow spot on the head. Unlike most bee species, they do not collect pollen on their bodies but in a kind of throat pouch.



**Bumblebees (Bombus):**

Bumblebees consist of a large group of woolly bees often with black and yellow bands. They live in colonies of dozens to sometimes hundreds of specimens. In Belgium about 30 species of bumblebees are known. Bumblebees collect pollen in baskets on their hind legs and can even fly at colder temperatures. About 6 species were observed on Buxus.

Observation bees			
Family	Dutch naam	Scientific name	Number of observations
<b>Honey bees</b>	Honingbij	Apis melifera	62
<b>Mining bees</b>	Vosje	Andrena fulva	21
	Asbij	Andrena cinaria	2
	Roodgatje	Andrena haemorrhoa	17
	Grijze rimpelrug	Andrena tibialis	1
	Grasbij	Andrena flavipes	3
	Meidoornzandbij	Andrena scotica	3
	Grijze zandbij	Andrena vaga	3
	Viltvlekszandbij	Andrena nitida	2
	Zandbij onbekend	Andrena spec	10
<b>Silk bees</b>	Grote zijdebij	Colletes cunicularius	42
<b>Nomad bees</b>	Geelzwarte wespbij	Nomada succincta	1
	Wespbij onbekend	Nomada spec.	2
<b>Blood bees</b>	Grote bloedbij	Sphecodes albilabris	3
	Bloedbij onbekend	Sphecodes spec.	6
<b>Furrow or Sweat bees</b>	Groefbij onbekend	Lasioglossum spec.	3
	Roodpotige groefbij	Halictus rubicundus	1
	Breedbandgroefbij	Halictus scabiosae	1
<b>Yellow-faced bees</b>	Maskerbij onbekend	Hylaeus spec.	1
<b>Bumblebees</b>	Boomhommel	Bombus hypnorum	1
	Weidehommel	Bombus pratorum	1
	Hommels onbekend	Bombus spec.	4
<b>Total Bees and Humblebees</b>			<b>190</b>

## HOVERFLIES

### Drone fly (*Eristalis*) :

Most drone flies are firmly built, usually brown with pale spots on the side of their first abdominal segments. There are about 14 species of drone flies known in our area of which the Common drone fly and the Tapered drone fly are the most common and also the most observed. Six species were observed in our nursery on Buxus.



### Syrphus hover fly (*Syrphus*) :

Band hoverflies resemble a wasp like many other hoverflies because of the yellow-black pattern on the abdomen. The Hairy-eyed Syrphus has a dull, copper-colored thorax, the yellow bands on the abdomen are slightly moustached, and the eyes are hairy. It is very similar to the other *Syrphus* species, which, however, have bald eyes. The species occurs in forests, at forest edges and near thickets. Several species were spotted on Boxwood with a total of 112 observations.

### Marmalade hover fly (*Episyrphus*) :

These are among the most common hoverflies in our region that can be found anywhere. The species is characterized by the reddish abdomen with 2 black bands on each segment: a straight band and a moustache-shaped band. The larvae feed on aphids and live on leaves of herbs and shrubs.



### Migrant hover fly (*Eupeodes*) :

There are nine species in our region of which the Migrant hoverfly is the best known and most common in Europe. This hoverfly eats nectar from flowers and the young larvae eat aphids. 2 species were observed in our nursery on Buxus.

### Meliscaeva hover fly (*Meliscaeva*) :

Small to medium-sized, slender black hoverflies (7-11 mm) with a yellow face, yellow shield and yellow spots or bands on the abdomen. The flies visit flowers and the larvae feed on aphids.



### Melanostoma hover fly (*Melanostoma*) :

Small hoverflies with a shiny thorax and a black abdomen with yellow spots. They can be found in herbaceous and grassy vegetation and also frequently visit flowers and also Buxus. 1 species was observed.

### Scaeva hover fly (Scaeva) :

Medium to large hoverflies (10-15 mm) with crescent-shaped yellow or white spots on the abdomen. Characteristic are the densely hairy eyes and the swollen forehead (especially in males). Flies on various flowers and the larvae eat aphids. There was 1 species observed on Buxus.



Observations hoverflies			
Family	Dutch name	Scientific name	Number of observations
<b>Hover flies</b>	Kegelbijvlieg	Eristalis pertinax	23
	Blinde bij	Eristalis tenax	40
	Puntbijvlieg	Eristalis nemorum	1
	Kleine bijvlieg	Eristalis arbustorum	1
	Onvoorspelbare bijvlieg	Eristalis similis	1
	Bijvlieg onbekend	Eristalis sp.	1
<b>Syrphus hoverflies</b>	Bosbandzweefvlieg	Syrphus torvus	62
	Bandzweefvlieg onbekend	Syrphus	50
<b>Marmelade hoverflies</b>	Snorzweefvlieg	Episyrphus balteatus	37
<b>Migrant hoverflies</b>	Terassjeskommazweefvlieg	Eupeodes corollae	1
	Grote kommazweefvlieg	Eupeodes luniger	1
<b>Meliscaeva hoverflies</b>	Variabel elfje	Meliscaeva auricollis	26
<b>Scaeva hoverflies</b>	Gele halvemaan-zweefvlieg	Scaeva selenitica	5
<b>Melanostoma hoverflies</b>	Gewone driehoeks-zweefvlieg	Melanostoma mellinum	2
<b>Total Hoverflies</b>			<b>251</b>

### 3 | CONCLUSION

Buxus is an important bee plant and provider of high quality pollen and nectar for both honey bees and wild bees and a whole host of other beneficial insects. Because Boxwood is usually catalogued by many as an 'ordinary garden plant', far too little attention has been paid to this.

Our observations have shown that dozens of species of wild bees, hoverflies and other beneficial insects use Boxwood as a host plant. Our overview is certainly not complete because some species are very difficult to photograph. Further research will provide more insight into this.

In recent years, Buxus has been infested by the invasive Buxus moth and there have even been massive calls to remove Buxus. This action may have caused the disappearance of many older Buxus bushes that flowered frequently each year. This has probably had a major impact on our biodiversity and has probably also been very detrimental to the many species that forage on Boxwood. Further research will have to show what the impact was here but what is certain is that the insects value Buxus highly.

Buxus as a multi-stemmed shrub or small tree or as a little pruned shrub certainly has its value in our gardens and contributes to biodiversity. There are many species and cultivars that require little pruning and can be used perfectly in the more natural garden.

#### SOURCES AND LITERATURE CONSULTED

- [www.waarnemingen.be/](http://www.waarnemingen.be/)
- [www.honeybeevalley.eu/](http://www.honeybeevalley.eu/)
- Gids van nectar-en stuifmeel voortbrengende planten: Lode Meert
- Belgian Red List of Bees ;Maxime Drossart, Pierre Rasmont, Pieter Vanormelingen, Marc Dufrière, Morgane Folschweiller, Alain Pauly, Nicolas J. Vereecken, Sarah Vray, Ella Zambra, Jens D'Haeseleer and Denis Michez
- Opmeten van de huidige ecologische situatie (T0) in de omgeving van het geplande ecodeur over de E19 in Halle; Rik Puls, Peter Claus, Peter Adriaens, Lore De Wolf – Corridor cv
- De Nederlandse zweefvliegen: Menno Reemer