



# Genus: *Pipizella*



*Pipizella viduata* male

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**Genus:** *Pipizella* Rondani, 1856

**Family:** Syrphidae

**Subfamily:** Pipizinae

**Tribe:** Pipizini

**Number of species of this genus found in Europe:** 22

## Description

### Head

The face is black, shiny and covered with white hairs that are as long as 1/2 of the length of basoflagellomere. The lunule is black. The frontal triangle in males is black and covered with predominantly white hairs, except for black hairs around the lunule. The frons in females is black, shiny and covered with white hairs which are as long as hairs on the face. In some species (as in *P. annulata*), white dust stripes are present along the eye margin. The antennae are entirely black with a basoflagellomere about two times as long as wide carrying a dorsal pale brown, arista. The arista is short haired, with the length of the hairs shorter than the basal diameter of the arista. The occiput is black, shiny and covered with long yellow hairs as long as the length of basoflagellomere. The eyes are covered with hairs that are as long as the length of four ommatidia. The eyes of males of most species are holoptic, but in some species more or less dichoptic (*P. mongolorum*, *P. nigriana*).



*Pipizella virens* head lateral



*Pipizella maculipennis* male habitus



*Pipizella nigriana* male habitus

## Thorax

The scutum is black, usually with a bronze or greenish reflection and is covered with yellow hairs. In females, the hairs on the scutum are shorter than the hairs on the occiput. The pleuron is black, shiny; the posterior anepisternum, anepimeron and katepisternum have long white hairs as long as hairs on the scutum. The scutellum is black and covered with long yellow hairs of the same length as on the scutum.

## Wings

The wing membrane is hyaline and densely covered with microtrichia. The pterostigma is cream brown. In some species the wing is infuscated (as in *P. maculipennis*).



*Pipizella nigriana* male habitus



*Pipizella viduata* male habitus



*Pipizella pennina* sternite 4

## Abdomen

The tergites are completely black and covered with white hairs anteriorly and black hairs posteriorly, shorter than the hairs on the scutum, but with long hairs on the lateral margin of the tergites. The sternites are completely black with white hairs. In *P. bispina*, *P. pennina* and *P. cantabrica* sternite 4 is convex, which is a very important taxonomic character.

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## General comments on identification to species level

The genus *Pipizella* has been placed historically in two subfamilies: Syrphinae, based on larval characters by Rotheray and Gilbert (1989, 1999), and Eristalinae, based on adult characters by Thompson (1969). According to recent phylogenetic studies, *Pipizella* belongs to the subfamily Pipizinae (Mengual et al. 2015). In most species only males can be identified with confidence, by examination of the genitalia. Identification of females is complicated because there are no reliable taxonomic distinguishing characters and therefore there are no Europe-wide keys. Females can sometimes be identified based on distribution and association with males, but some species are inseparable and for a lot of species the females are still unknown. The genus is therefore in need of taxonomic revision.



*Pipizella viduata* male habitus



*Pipizella virens* male habitus



*Pipizella viduata* head lateral

### Differential diagnosis

The genus *Pipizella* consists of small-sized hoverflies which are completely black, apart from the legs which are partially yellow. Members of this genus have a flattened face, without a facial tubercle and a protruded oral margin. Body length ranges from 5 mm to 8 mm.

Pipizella can be confused with other genera of subfamily Pipizinae: *Triglyphus*, *Trichopsomyia*, *Pipiza*, *Heringia* and *Neocnemodon*. *Pipizella* can be distinguished from these genera by the following combination of characters: tergite 4 is well developed, the anterior anepisternum lacks long hairs (microtrichia present), the face is not protruded at the level of antenna and the angle between veins  $R_{4+5}$  and  $M_1$  is about right. Sometimes, especially in the field, *Pipizella* might be mistaken for *Paragus* or *Cheilosia*. *Pipizella* differs from *Paragus* by a reduced tergite 1 (in *Paragus* tergite 1 is well developed) and from *Cheilosia* by the flattened face and undeveloped parafacia (in *Cheilosia* face has a distinct facial tubercle and parafacia).



*Triglyphus primus* male habitus



*Trichopsomyia flavitarsis* male habitus



*Pipiza noctiluca* male habitus



*Heringia heringi* male habitus



*Neocnemodon pubescens* male habitus



*Paragus haemorrhous* male habitus



*Cheilosia mutabilis* male habitus

# Geographical distribution and global diversity

The genus *Pipizella* is widely distributed and is absent only from the Afrotropics. There are now 22 *Pipizella* species known from Europe.

## Presence in Europe

Albania, Andorra, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Gibraltar, Greece, Hungary, Ireland, Isle of Man, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Moldova, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation - European Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom.

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## Biology

**Adult behaviour and flower preferences.** Adults of the genus *Pipizella* prefer open habitats as well as forests. They fly close to the ground in the majority low growing herbs, but also around shrubs and bushes, where often settle on leaves to bask. The adult flight period is from April to October (Speight, 2020). Umbellifers such as *Torilis* sp., *Daucus* sp., *Pimpinella saxifraga* and *Conium maculatum* are attractive for *Pipizella* (Morris, 1998 & Morris pers comm.). They visit also plants belong to genera such as *Euphorbia* sp., *Galium* sp., *Potentilla* sp., *Mercurialis* sp., *Thymus* sp. and *Viburnum* sp. (Speight, 2020).

**Reproduction and larval biology.** The larvae are aphidophagous, probably feeding primarily on root aphids, and it is possible that they may occasionally have an ant-associated lifestyle.

**Seasonal life cycle.** The species of the genus *Pipizella*, like all other species of hoverflies, belong to the group of holometabolous insects, i.e. during their lifecycle they go through four stages: egg, larva, pupa and adult. Most of the European species of the genus *Pipizella* are most probably univoltine, with one generation per year, but *P. viduata* and *P. virens* with their long flight period are likely to be partially bivoltine (i.e. having have two generations during the year).



**Type species:** *Mulio virens* Fabricius, 1805

**Common names:**

SV - rotlusblomflugor;

FI - mustasysiset;

NB - rotlusblomsterfluer

## List of species found in Europe:

1. *Pipizella annulata* (Macquart, 1829)
2. *Pipizella bispina* Šimić, 1987
3. *Pipizella brevis* Lucas, 1977
4. *Pipizella calabra* (Goeldlin, 1974)
5. *Pipizella cantabrica* Claussen, 1991
6. *Pipizella certa* Violovitsch, 1981
7. *Pipizella divicoi* (Goeldlin, 1974)
8. *Pipizella elegantissima* Lucas, 1976
9. *Pipizella lyneborgi* Torp Pedersen, 1971
10. *Pipizella maculipennis* (Meigen, 1822)

11. *Pipizella mongolorum* Stackelberg, 1952
  12. *Pipizella nataliae* Kuznetzov, 1990
  13. *Pipizella nigriana* (Séguy, 1961)
  14. *Pipizella obscura* Van Steenis & Lucas, 2011
  15. *Pipizella pennina* (Goeldlin, 1974)
  16. *Pipizella siciliana* Nielsen & Torp, 1973
  17. *Pipizella speighti* Verlinden, 1999
  18. *Pipizella thapsiana* Kassebeer, 1995
  19. *Pipizella viduata* (Linnaeus, 1758)
  20. *Pipizella virens* (Fabricius, 1805)
  21. *Pipizella zeneggenensis* (Goeldlin, 1974)
  22. *Pipizella zloti* Vujić, 1997
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## References

Morris, R.K.A. (1998) Hoverflies of Surrey. Surrey Wildlife Trust, Pirbright UK. 244 pp.

Speight, M.C.D., Lebard, T. (2014) *Pipizella siciliana* Nielsen & Torp (Diptera, Syrphidae) recorded from France, with notes on its separation from related species. *Dipterists Digest* 21: 123-133.

Speight, M.C.D. (2020) Species accounts of European Syrphidae, 2020. *Syrph the Net, the database of European Syrphidae (Diptera), vol. 104*, Syrph the Net publications, Dublin, 314 pp.

van Steenis, J., Lucas, J.A.W. (2011) Revision of the West- Palearctic species of *Pipizella* Rondani, 1856 (Diptera, Syrphidae). *Dipterists Digest* 18: 127-180.

Vujić, A. (1997) The genus *Pipizella* (Diptera, Syrphidae) on the Balkan Peninsula and description of *Pipizella zloti* sp. n. *Dipterists Digest* 4: 51-60.

## Attributions

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