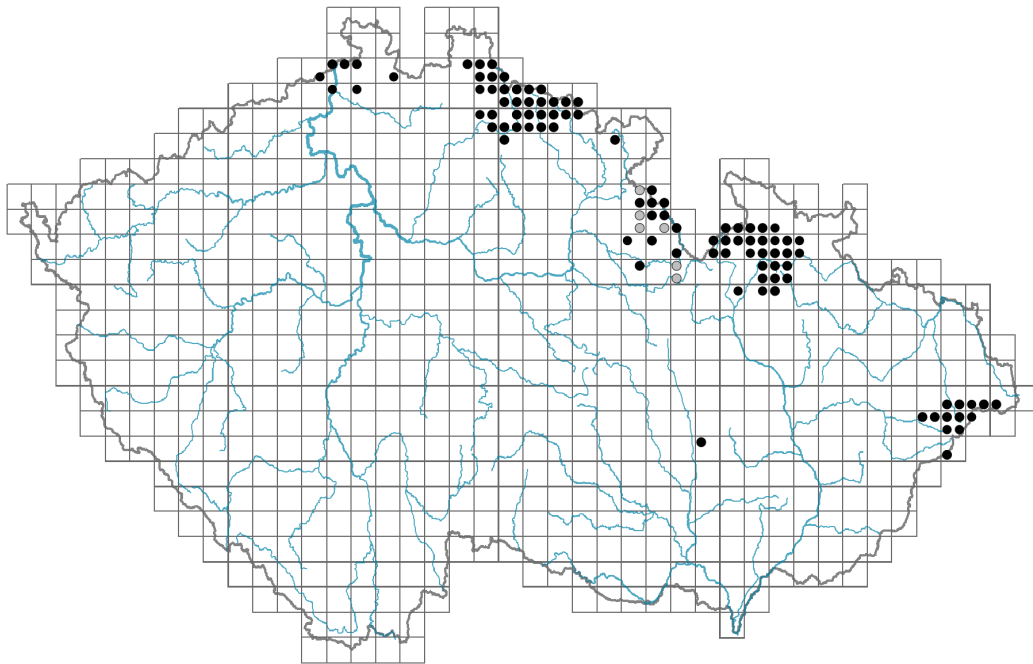


# *Viola biflora*

## Distribution



### Map info

● revised records

● unrevised records

On the map are not visualized records without the coordinates and records marked as incorrect or doubtful.

## Habitus and growth type

Height [m]: **0.1-0.2**

Growth form: **clonal herb**

Life form: **hemicryptophyte**

Life strategy: **CSR - competitor/stress-tolerator/ruderal**

Life strategy (Pierce method based on leaf traits): **R**

Life strategy (Pierce method, C-score): **8.6 %**

Life strategy (Pierce method, S-score): **0 %**

Life strategy (Pierce method, R-score): **91.4 %**



## Leaf

Leaf presence and metamorphosis: **leaves present, not modified**

Leaf arrangement (phyllotaxis): **alternate**

Leaf shape: **simple - entire**

Stipules: **present**

Petiole: **present**

Leaf life span: **evergreen**

Leaf anatomy: **hygromorphic**



## Flower

Flowering period [month]: **May-August**

Flowering phase: **3 Prunus avium-Ranunculus auricomus (end of early spring)**  
 Flower colour: **yellow**  
 Flower symmetry: **zygomorphic**  
 Perianth type: **calyx and corolla**  
 Perianth fusion: **free**  
 Calyx fusion: **aposepalous**  
 Inflorescence type: **flores solitarii**  
 Dicliny: **synoecious**  
 Generative reproduction type: **mixed mating**  
 Pollination syndrome: **insect-pollination, selfing, cleistogamy**  
 Pollinator spectrum: **hoverflies, flies s. l., meat flies s. l., other Diptera (other Hymenoptera)**



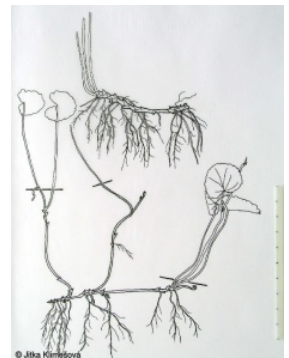
## Fruit, seed and dispersal

Fruit type: **dry fruit - capsule**  
 Fruit colour: **green, brown**  
 Reproduction type: **by seed/spores and vegetatively**  
 Dispersal unit (diaspore): **seed**  
 Dispersal strategy: **Allium (mainly autochory)**  
 Myrmecochory: **myrmecochorous**



## Belowground organs and clonality

Shoot metamorphosis: **rhizome**  
 Storage organ: **rhizome**  
 Type of clonal growth organ: **epigeogenous rhizome**  
 Freely dispersible organs of clonal growth: **absent**  
 Shoot life span (cyclicity): **monocyclic shoots prevailing**  
 Branching type of stem-derived organs of clonal growth: **monopodial**  
 Primary root: **absent**  
 Persistence of the clonal growth organ [year]: **2.5**  
 Number of clonal offspring: **0.9**  
 Lateral spreading distance by clonal growth [m]: **0.1**  
 Clonal index: **4**



## Bud bank

Number of buds per shoot at the soil surface (root buds excluded): **5**  
 Number of buds per shoot at a depth of 0–10 cm (root buds excluded): **12**  
 Number of buds per shoot at a depth greater than 10 cm (root buds excluded): **0**  
 Size of the belowground bud bank (root buds excluded): **17**  
 Depth of the belowground bud bank (root buds excluded) [cm]: **4**  
 Number of buds per shoot at the soil surface (root buds included): **5**  
 Number of buds per shoot at a depth of 0–10 cm (root buds included): **12**  
 Number of buds per shoot at a depth greater than 10 cm (root buds included): **0**  
 Size of the belowground bud bank (root buds included): **17**  
 Depth of the belowground bud bank (root buds included) [cm]: **4**

## Trophic mode

Parasitism and mycoheterotrophy: **autotrophic**

Carnivory: **non-carnivorous**

Symbiotic nitrogen fixation: **no nitrogen-fixing symbionts**

## Karyology

Chromosome number (2n): **12**

Ploidy level (x): **2**

2C genome size [Mbp]: **981.46**

1Cx monoploid genome size [Mbp]: **490.73**

Genomic GC content: **43.3 %**

## Taxon origin

Origin in the Czech Republic: **native**

## Ecological indicator values

Ellenberg-type indicator values

Light indicator value: **4x - transition between values 3 and 5 (generalist)**

Temperature indicator value: **3 - cool indicator, occurring mainly in subalpine areas**

Moisture indicator value: **8 - transition between values 7 and 9**

Reaction indicator value: **6 - transition between values 5 and 7**

Nutrient indicator value: **5 - occurring at moderately nutrient-rich sites, and less frequently at poor and rich sites**

Salinity indicator value: **0 - not salt tolerant, glycophyte**

Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-1.01**

Herb layer disturbance frequency indicator value: **-0.68**

Whole-community disturbance severity indicator value: **0.19**

Herb layer disturbance severity indicator value: **0.23**

Whole-community structure based disturbance indicator value: **0.49**

Herb layer structure-based disturbance indicator value: **0.53**

## Habitat and sociology

Occurrence in habitats

1 Vegetation of cliffs, screes and walls

1B Siliceous cliffs and block fields: **2 - optimum**

2 Alpine and subalpine grasslands

2B Subalpine tall-forb and tall-grass vegetation: **2 - optimum**

4 Wetland and riverine herbaceous vegetation

4K Petasites fringes of montane brooks: **2 - optimum**

5 Vegetation of springs and mires

5B Lowland to montane soft-water springs: **1 - rare occurrence**

5C Alpine and subalpine soft-water springs: **2 - optimum**

## 11 Heathlands and scrub

11H Subalpine deciduous scrub: **2 - optimum**

## 12 Forests

12B Alluvial forests: **1 - rare occurrence**

12R Acidophilous spruce forests: **1 - rare occurrence**

12S Basiphilous spruce forests: **1 - rare occurrence**

Affinity to the forest environment

Affinity to the forest environment in Mesophyticum and Oreophyticum: **2.1 - taxon occurring both in the forest and open vegetation**

Diagnostic taxon

Diagnostic taxon of classes: [AC Elyno-Seslerietea](#), [AD Mulgedio-Aconitetea](#), [RA Montio-Cardaminetea](#)

Diagnostic taxon of alliances: [ACA Agrostion alpinae](#), [ADB Calamagrostion arundinaceae](#), [ADD Adenostylion alliariae](#), [RAD Swertio perennis-Dichodontion palustris](#)

Diagnostic taxon of associations: [ACA01 Saxifrago oppositifoliae-Festucetum versicoloris](#), [ADA03 Viola sudeticae-Deschampsietum cespitosae](#), [ADB01 Bupleuro longifoliae-Calamagrostietum arundinaceae](#), [ADC01 Salici silesiacae-Betuletum carpaticae](#), [ADD01 Ranunculo platanifolii-Adenostyletum alliariae](#), [ADD02 Salicetum lapponum](#), [ADD04 Laserpitio archangelicae-Dactylidetum glomeratae](#), [RAD01 Crepido paludosae-Philonotidetum seriatae](#), [RAD02 Swertietum perennis](#), [RAD03 Cardaminetum opicii](#), [RBC04 Bartsio alpinae-Caricetum nigrae](#)

Constant taxon

Constant taxon of alliances: [RAD Swertio perennis-Dichodontion palustris](#)

Constant taxon of associations: [ACA01 Saxifrago oppositifoliae-Festucetum versicoloris](#), [ADD01 Ranunculo platanifolii-Adenostyletum alliariae](#), [ADD02 Salicetum lapponum](#), [KCA02 Adenostylo alliariae-Pinetum mugo](#), [RAD01 Crepido paludosae-Philonotidetum seriatae](#), [RAD02 Swertietum perennis](#), [RAD03 Cardaminetum opicii](#)

Dominant taxon

Dominant taxon of associations: [RAD03 Cardaminetum opicii](#)

Ecological specialization indices

Ecological specialization index for all vegetation types: **5**

Ecological specialization index for non-forest vegetation: **5.1**

Ecological specialization index for forest vegetation: **5.9**

## Distribution and frequency

Floristic zone: **arctic, boreal, northern temperate, southern temperate, submeridional, meridional**

Floristic region: **Europe, Asia, Western America**

Continental degree: **6**

Distribution range extension along the continentality gradient: **5**

Elevational belt in the Czech Republic: **montane belt, subalpine belt (colline belt)**

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: **53**

taxon.data.freq\_in\_quad: 104

## Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **0.3 %**

Occurrence frequency in vegetation plots with a cover above 5%: **13.6 %**

Occurrence frequency in vegetation plots with a cover above 25%: **1.1 %**

Occurrence frequency in vegetation plots with a cover above 50%: **0 %**

Mean percentage cover in vegetation plots: **4 %**

Maximum percentage cover in vegetation plots: **38 %**

## Number of habitats with taxon occurrence in the Czech Republic

Number of narrow habitats in which the taxon occurs: **9**

Number of narrow habitats in which the taxon has its optimum: **5**

Number of broad habitats in which the taxon occurs: **6**

Number of broad habitats in which the taxon has its optimum: **5**

## Threats and protection

Red List 2017 (national categories): **C4a - near threatened taxon**

Red List 2017 (IUCN categories): **LC - least concern**

Legal protection: **not protected by law**