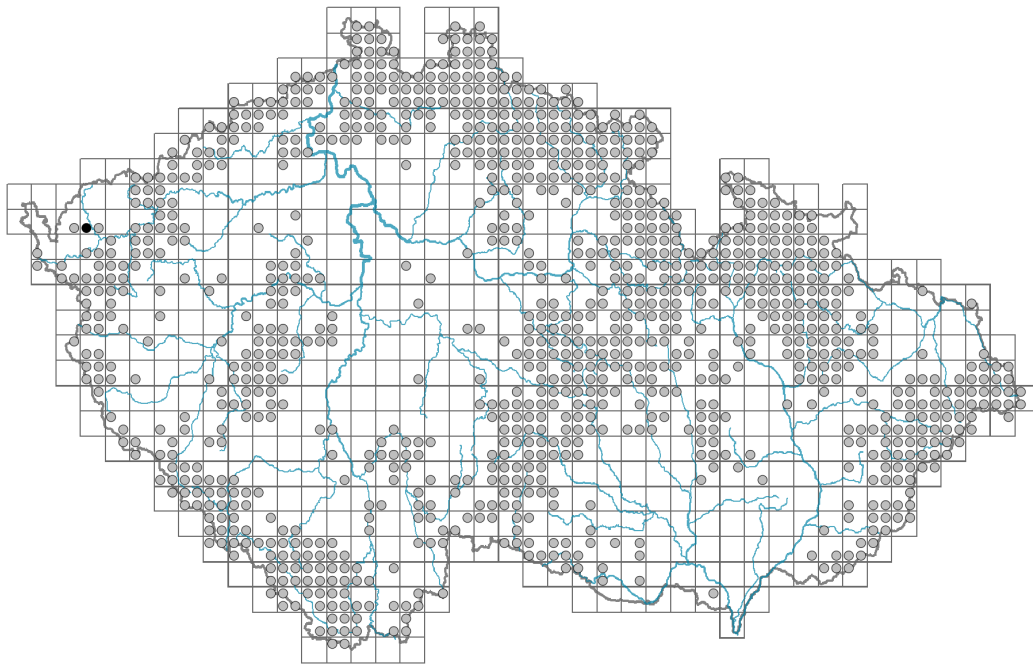


# *Polygonatum verticillatum*

## 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]: **0.3-1**

Growth form: **clonal herb**

Life form: **geophyte**

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

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

Life strategy (Pierce method, C-score): **29.4 %**

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

Life strategy (Pierce method, R-score): **70.6 %**



## Leaf

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

Leaf arrangement (phyllotaxis): **verticillate**

Leaf shape: **simple - entire**

Stipules: **absent**

Petiole: **absent**

Leaf life span: **summer green**

Leaf anatomy: **mesomorphic**

## Flower

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



Flowering phase: **5 Sorbus aucuparia-Galium odoratum (end of mid-spring)**

Flower colour: **white**

Flower symmetry: **actinomorphic**

Perianth type: **homochlamydeous**

Perianth fusion: **fused**

Shape of the sympetalous corolla or syntepalous perianth: **tubular**

Inflorescence type: **flores solitarii**

Dicliny: **synoecious, andromonoecious**

Generative reproduction type: **mixed mating**

Pollination syndrome: **insect-pollination, selfing**

## Fruit, seed and dispersal

Fruit type: **fleshy fruit - berry**

Fruit colour: **red, blue, black**

Reproduction type: **by seed/spores and vegetatively**

Dispersal unit (diaspore): **seed, fruit, infructescence or its part**

Dispersal strategy: **Cornus (mainly autochory and endozoochory)**

Myrmecochory: **non-myrmecochorous (b)**

## Belowground organs and clonality

Shoot metamorphosis: **rhizome**

Storage organ: **rhizome**

Type of clonal growth organ: **hypogeogenous rhizome**

Freely dispersible organs of clonal growth: **absent**

Shoot life span (cyclicity): **monocyclic shoots prevailing**

Branching type of stem-derived organs of clonal growth: **sympodial**

Primary root: **absent**

Persistence of the clonal growth organ [year]: **4**

Number of clonal offspring: **1**

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): **3**

Number of buds per shoot at a depth of 0–10 cm (root buds excluded): **15**

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): **18**

Depth of the belowground bud bank (root buds excluded) [cm]: **4**

Number of buds per shoot at the soil surface (root buds included): **3**

Number of buds per shoot at a depth of 0–10 cm (root buds included): **15**

Number of buds per shoot at a depth greater than 10 cm (root buds included): **0**

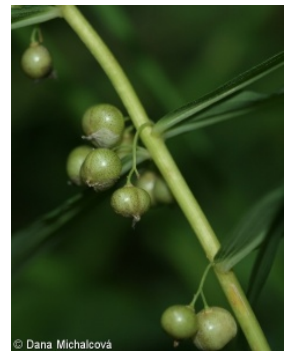
Size of the belowground bud bank (root buds included): **18**

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): **28**

Ploidy level (x): **2**

2C genome size [Mbp]: **16541.38**

1Cx monoploid genome size [Mbp]: **8270.69**

Genomic GC content: **45.3 %**

## Taxon origin

Origin in the Czech Republic: **native**

## Ecological indicator values

Ellenberg-type indicator values

Light indicator value: **4 - transition between values 3 and 5**

Temperature indicator value: **4 - transition between values 3 and 5**

Moisture indicator value: **5 - indicator of fresh soils, focus on soils of average moisture, missing on wet and on soils that frequently dry out**

Reaction indicator value: **4 - transition between values 3 and 5**

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: **-1.93**

Herb layer disturbance frequency indicator value: **-0.73**

Whole-community disturbance severity indicator value: **0.23**

Herb layer disturbance severity indicator value: **0.08**

Whole-community structure based disturbance indicator value: **0.1**

Herb layer structure-based disturbance indicator value: **0.2**

## Habitat and sociology

Occurrence in habitats

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: **1 - rare occurrence**

5 Vegetation of springs and mires

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

7 Acidophilous grasslands

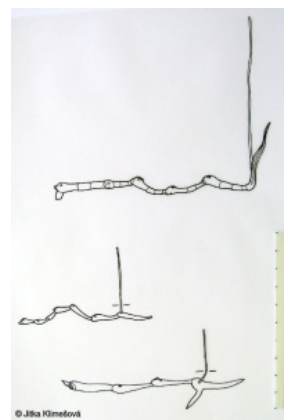
7A Subalpine and montane acidophilous grasslands: **1 - rare occurrence**

11 Heathlands and scrub

11D Subalpine acidophilous Pinus mugo scrub: **2 - optimum**

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

11R Scrub and pioneer woodland of forests clearings: **1 - rare occurrence**



## 12 Forests

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

12C Oak-hornbeam forests: **1 - rare occurrence**

12D Ravine forests: **1 - rare occurrence**

12E Herb-rich beech forests: **2 - optimum**

12F Limestone beech forests: **1 - rare occurrence**

12G Acidophilous beech forests: **2 - optimum**

12I Sub-continental thermophilous oak forests: **1 - rare occurrence**

12K Acidophilous oak forests: **1 - rare occurrence**

12R Acidophilous spruce forests: **2 - optimum**

12S Basiphilous spruce forests: **2 - optimum**

12U Plantations of broad-leaved non-native trees: **1 - rare occurrence**

12V Spruce plantations: **1 - rare occurrence**

## 13 Anthropogenic vegetation

13F Herbaceous vegetation of forests clearings and Rubus scrub: **1 - rare occurrence**

### Affinity to the forest environment

Affinity to the forest environment in Thermophyticum: **1.1 - taxon occurring mainly in the closed forest**

Affinity to the forest environment in Mesophyticum and Oreophyticum: **1.1 - taxon occurring mainly in the closed forest**

### Diagnostic taxon

Diagnostic taxon of alliances: [ADC \*Salicion silesiacae\*](#)

Diagnostic taxon of associations: [ADC01 \*Salici silesiacae-Betuletum carpaticae\*](#), [ADE01 \*Daphno mezerei-Dryopteridetum filicis-maris\*](#), [ADE02 \*Adenostylo alliariae-Athyrietum distentifolii\*](#), [LBC04 \*Athyrio distentifolii-Fagetum sylvaticae\*](#), [LBE02 \*Calamagrostio villosae-Fagetum sylvaticae\*](#)

### Constant taxon

Constant taxon of alliances: [ADC \*Salicion silesiacae\*](#)

Constant taxon of associations: [ADC01 \*Salici silesiacae-Betuletum carpaticae\*](#), [ADE01 \*Daphno mezerei-Dryopteridetum filicis-maris\*](#), [KCA02 \*Adenostylo alliariae-Pinetum mugo\*](#), [LBC04 \*Athyrio distentifolii-Fagetum sylvaticae\*](#), [LBE02 \*Calamagrostio villosae-Fagetum sylvaticae\*](#)

### Ecological specialization indices

Ecological specialization index for all vegetation types: **5.6**

Ecological specialization index for non-forest vegetation: **4.3**

Ecological specialization index for forest vegetation: **5.8**

### Colonization ability

Index of colonization success (ICS): **6**

Index of colonization potential (ICP): **8**

Optimum successional age [years]: **3**

## Distribution and frequency

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

Floristic region: **Europe, Western Asia**

Continentality degree: **4**

Distribution range extension along the continentality gradient: **4**

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

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: 440

taxon.data.freq\_in\_quad: 1057

Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **1.4 %**

Occurrence frequency in vegetation plots with a cover above 5%: **2.9 %**

Occurrence frequency in vegetation plots with a cover above 25%: **0.2 %**

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

Mean percentage cover in vegetation plots: **2.4 %**

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: **20**

Number of narrow habitats in which the taxon has its optimum: 7

Number of broad habitats in which the taxon occurs: 7

Number of broad habitats in which the taxon has its optimum: 3

### Threats and protection

Red List 2017 (national categories): **taxon is not on the Red List**

Red List 2017 (IUCN categories): **LC(NA) - least concern (taxon is not on the Red List)**

Legal protection: **not protected by law**