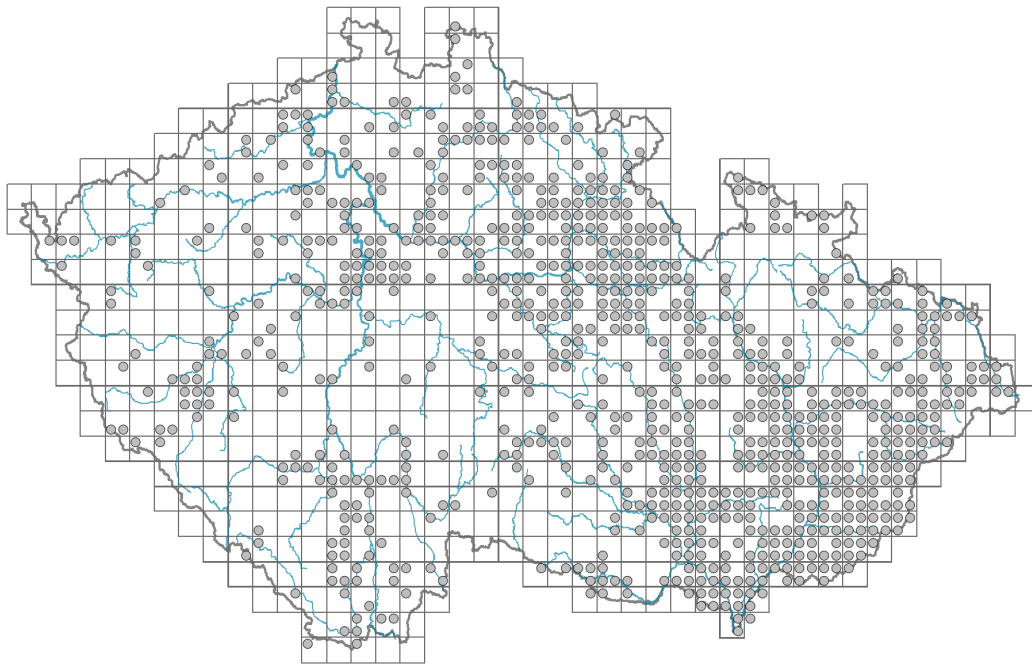


# *Helianthus tuberosus*

## 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]: **1.2-2.5**

Growth form: **clonal herb**

Life form: **geophyte**

Life strategy: **C - competitor**

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

Life strategy (Pierce method, C-score): **72.6 %**

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

Life strategy (Pierce method, R-score): **27.4 %**

## Leaf

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

Leaf arrangement (phyllotaxis): **alternate, opposite**

Leaf shape: **simple - entire**

Stipules: **absent**

Petiole: **present**

Leaf life span: **summer green**

Leaf anatomy: **mesomorphic**

## Flower

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



Flowering phase: **8 Clematis vitalba-Galium sylvaticum (mid-summer)**

Flower colour: **yellow**

Flower symmetry: **actinomorphic, zygomorphic**

Perianth type: **calyx reduced, corolla present**

Perianth fusion: **fused**

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

Calyx fusion: **pappus**

Inflorescence type: **corymbothsus ex anthodiis compositus**

Dicliny: **synoecious**

Generative reproduction type: **allogamy self-incompatibility, facultative allogamy**

Pollination syndrome: **insect-pollination**

## Fruit, seed and dispersal

Fruit type: **dry fruit - achene/cypsela/samara**

Reproduction type: **mostly vegetatively, rarely by seed/spores**

Dispersal strategy: **Zea (no dispersal)**

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

## Belowground organs and clonality

Shoot metamorphosis: **stolon, stolon with tuberous tip**

Storage organ: **stolon, stolon with tuberous tip**

Type of clonal growth organ: **belowground stem tuber**

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

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

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

Primary root: **absent**

Persistence of the clonal growth organ [year]: **1.4**

Number of clonal offspring: **7.6**

Lateral spreading distance by clonal growth [m]: **0.11**

Clonal index: **5**

### 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): **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): **20**

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): **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): **20**

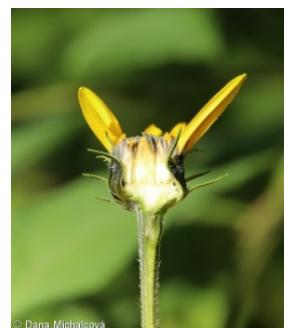
Depth of the belowground bud bank (root buds included) [cm]: **4**

## Trophic mode

Parasitism and mycoheterotrophy: **autotrophic**

Carnivory: **non-carnivorous**

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



## Karyology

Chromosome number (2n): **102**

Ploidy level (x): **6**

2C genome size [Mbp]: **20283.91**

1Cx monoploid genome size [Mbp]: **3380.65**

Genomic GC content: **41.1 %**

## Taxon origin

Origin in the Czech Republic: **neophyte**

Invasion status: **invasive**

Geographic origin: **North America**

Year of the first record in the wild: **1885**

Period of introduction: **Late Modern Period (1800-1950)**

Introduction pathway: **intentional - crops**



## Ecological indicator values

Ellenberg-type indicator values

Light indicator value: **8 - light plant, only exceptionally occurring at less than 40% of diffuse radiation incident in an open area**

Temperature indicator value: **7 - heat indicator, occurring in relatively warm lowlands**

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

Reaction indicator value: **7 - indicator of slightly acidic to slightly basic conditions, never occurring in very acidic conditions**

Nutrient indicator value: **8 - pronounced nutrient indicator**

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

Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-0.4**

Herb layer disturbance frequency indicator value: **-0.38**

Whole-community disturbance severity indicator value: **0.56**

Herb layer disturbance severity indicator value: **0.58**

Whole-community structure based disturbance indicator value: **0.44**

Herb layer structure-based disturbance indicator value: **0.46**



## Habitat and sociology

Occurrence in habitats

4 Wetland and riverine herbaceous vegetation

4L Nitrophilous herbaceous fringes of lowland rivers: **3 - dominant**

12 Forests

12T Robinia pseudacacia plantations: **1 - rare occurrence**

13 Anthropogenic vegetation

13A Annual vegetation of ruderal habitats: **1 - rare occurrence**

13D Perennial thermophilous ruderal vegetation: **2 - optimum**

13E Perennial nitrophilous herbaceous vegetation of mesic sites: **2 - optimum**



**Affinity to the forest environment**

Affinity to the forest environment in Thermophyticum: **0 - taxon that does not spontaneously occur in Czech forests**

Affinity to the forest environment in Mesophyticum and Oreophyticum: **0 - taxon that does not spontaneously occur in Czech forests**

**Diagnostic taxon**

Diagnostic taxon of associations: [XDE07 \*Oenothero biennis-Helianthetum tuberosi\*](#)

**Constant taxon**

Constant taxon of associations: [XDE07 \*Oenothero biennis-Helianthetum tuberosi\*](#)

**Dominant taxon**

Dominant taxon of associations: [XDE07 \*Oenothero biennis-Helianthetum tuberosi\*](#)

**Ecological specialization indices**

Ecological specialization index for all vegetation types: **4.2**

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

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

**Colonization ability**

Index of colonization success (ICS): **2**

Index of colonization potential (ICP): **3**

Optimum successional age [years]: **6**

**Distribution and frequency**

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

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

Continental degree: **5**

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

Elevational belt in the Czech Republic: **lowlands, colline belt, submontane belt**

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: **414**

taxon.data.freq\_in\_quad: **852**

**Commonness in vegetation plots from the Czech Republic**

Occurrence frequency in vegetation plots: **0.4 %**

Occurrence frequency in vegetation plots with a cover above 5%: **51.9 %**

Occurrence frequency in vegetation plots with a cover above 25%: **47.4 %**

Occurrence frequency in vegetation plots with a cover above 50%: **45.2 %**

Mean percentage cover in vegetation plots: **39.1 %**

Maximum percentage cover in vegetation plots: **99 %**

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

Number of narrow habitats in which the taxon occurs: **5**

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

Number of broad habitats in which the taxon occurs: **3**

Number of broad habitats in which the taxon has its optimum: **2**

**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)**



List)

Legal protection: **not protected by law**

