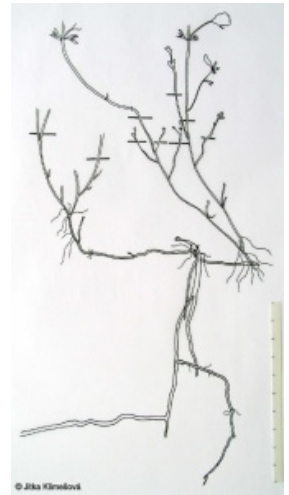
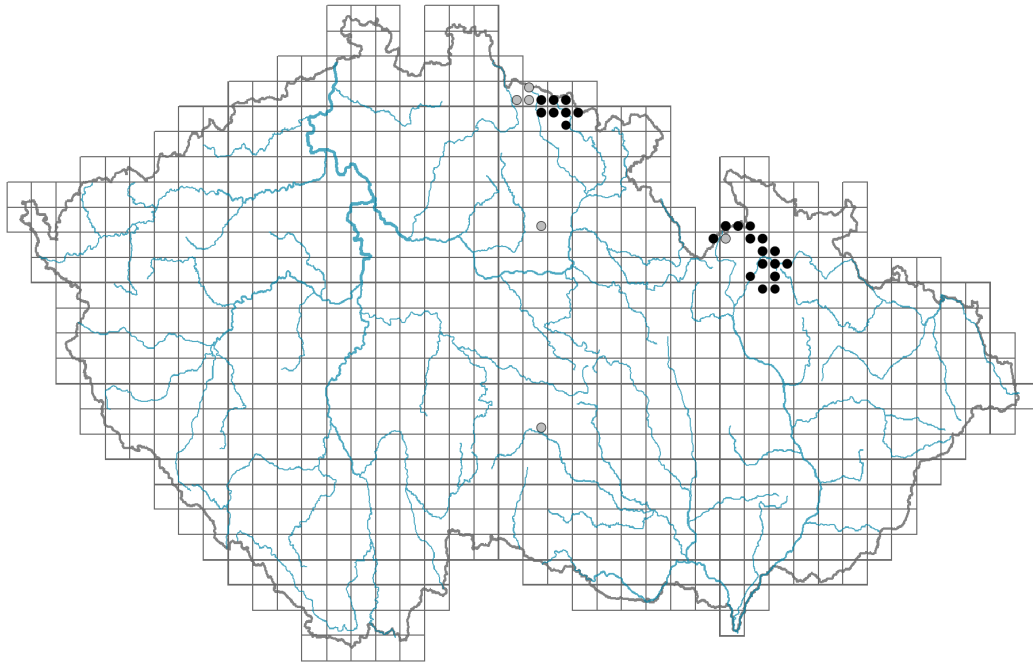


# *Viola lutea*

## 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]: **0.1-0.25**

Growth form: **clonal herb**

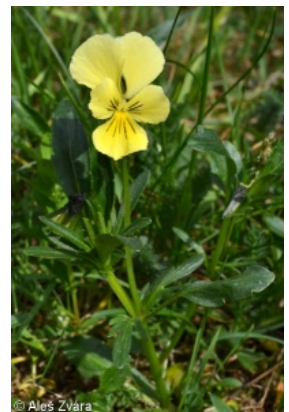
Life form: **hemicryptophyte**

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

Life strategy (Pierce method, C-score): **13.5 %**

Life strategy (Pierce method, S-score): **12.7 %**

Life strategy (Pierce method, R-score): **73.8 %**



## Leaf

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

Leaf arrangement (phyllotaxis): **alternate**

Leaf shape: **simple - entire**

Stipules: **present**

Petiole: **present**

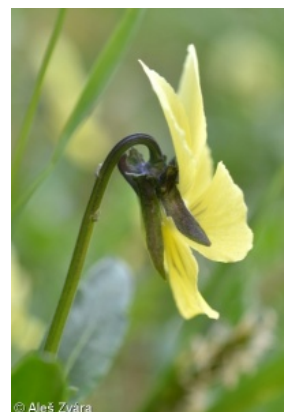
## Flower

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

Flower colour: **yellow**

Flower symmetry: **zygomorphic**

Perianth type: **calyx and corolla**



Perianth fusion: **free**

Calyx fusion: **aposepalous**

Inflorescence type: **flores solitarii**

Pollinator spectrum: **flies s. l. (solitary bees, hoverflies, meat flies s. l., other Diptera, butterflies)**

## Fruit, seed and dispersal

Fruit type: **dry fruit - capsule**

Fruit colour: **brown**

Dispersal unit (diaspore): **seed**

Dispersal strategy: **Allium (mainly autochory)**

Myrmecochory: **myrmecochorous**

## Belowground organs and clonality

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

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]: **4**

Number of clonal offspring: **6**

Lateral spreading distance by clonal growth [m]: **0.13**

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): **48**

Ploidy level (x): **12**

2C genome size [Mbp]: **5378.72**

1Cx monoploid genome size [Mbp]: **448.23**



Genomic GC content: **44.3 %**

## Taxon origin

Origin in the Czech Republic: **native**

## Ecological indicator values

Ellenberg-type indicator values

Light indicator value: **7 - half-light plant, mostly occurring at full light, but also in the shade up to about 30% of diffuse radiation incident in an open area**

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

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: **3 - acidity indicator, occurring mainly in acidic conditions, exceptionally in neutral conditions**

Nutrient indicator value: **3 - occurring at nutrient-poor sites more frequently than at average sites and exceptionally at rich sites**

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

Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-0.52**

Herb layer disturbance frequency indicator value: **-0.52**

Whole-community disturbance severity indicator value: **0.21**

Herb layer disturbance severity indicator value: **0.25**

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

Herb layer structure-based disturbance indicator value: **0.64**

## Habitat and sociology

Occurrence in habitats

2 Alpine and subalpine grasslands

2A Alpine grasslands on siliceous bedrock: **1 - rare occurrence**

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

6 Meadows and mesic pastures

6B Montane mesic meadows: **2 - optimum**

7 Acidophilous grasslands

7A Subalpine and montane acidophilous grasslands: **2 - optimum**

11 Heathlands and scrub

11D Subalpine acidophilous *Pinus mugo* scrub: **1 - rare occurrence**

11H Subalpine deciduous scrub: **1 - rare occurrence**

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 alliances: [\*ADA Calamagrostion villosae\*](#), [\*TEA Nardion strictae\*](#)

Diagnostic taxon of associations: [\*ADA03 Viola sudeticae-Deschampsietum\*](#)

[\*cespitosae\*, TDB02 \*Melandrio rubri-Phleetum alpini\*, TEA02 \*Thesio alpini-Nardetum strictae\*](#)

Constant taxon

Constant taxon of associations: [ADA03 \*Violo sudeticae-Deschampsietum cespitosae\*, TDB02 \*Melandrio rubri-Phleetum alpini\*](#)

Ecological specialization indices

Ecological specialization index for all vegetation types: **6**

Ecological specialization index for non-forest vegetation: **6.1**

Colonization ability

Index of colonization success (ICS): **1**

Index of colonization potential (ICP): **1**

## Distribution and frequency

Elevational belt in the Czech Republic: **montane belt, subalpine belt**

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: **25**

taxon.data.freq\_in\_quad: **41**

Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **0.1 %**

Occurrence frequency in vegetation plots with a cover above 5%: **25 %**

Occurrence frequency in vegetation plots with a cover above 25%: **5.6 %**

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

Mean percentage cover in vegetation plots: **6.3 %**

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: **6**

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

Number of broad habitats in which the taxon occurs: **4**

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

## Threats and protection

Red List 2017 (national categories): **C2b - endangered taxon, rare and declining**

Red List 2017 (IUCN categories): **EN - endangered**

Legal protection: **endangered taxon**