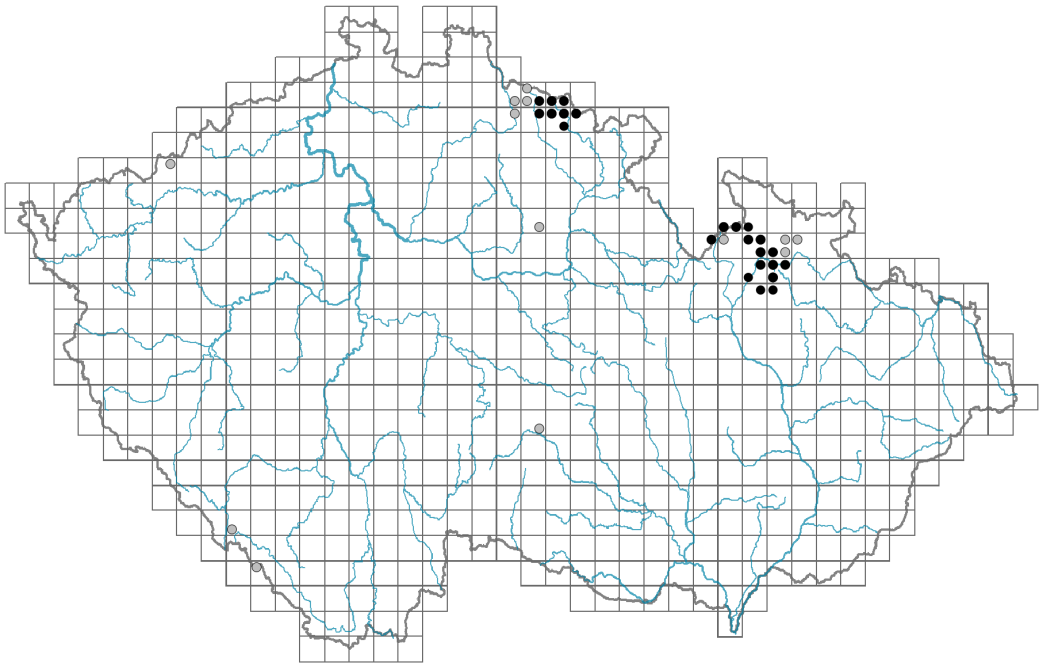
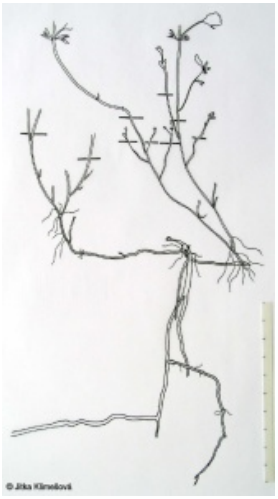
# *Viola lutea*

## Distribution





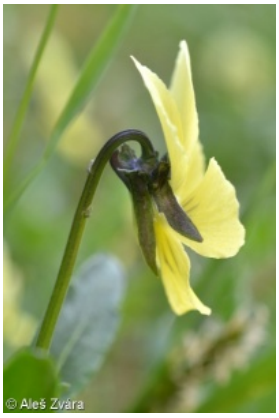
Map info

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**

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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 (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: **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 exluded) [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**

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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 *Violo sudeticae-Deschampsietum***

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***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: 28

taxon.data.freq_in_quad: 45

### 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**

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