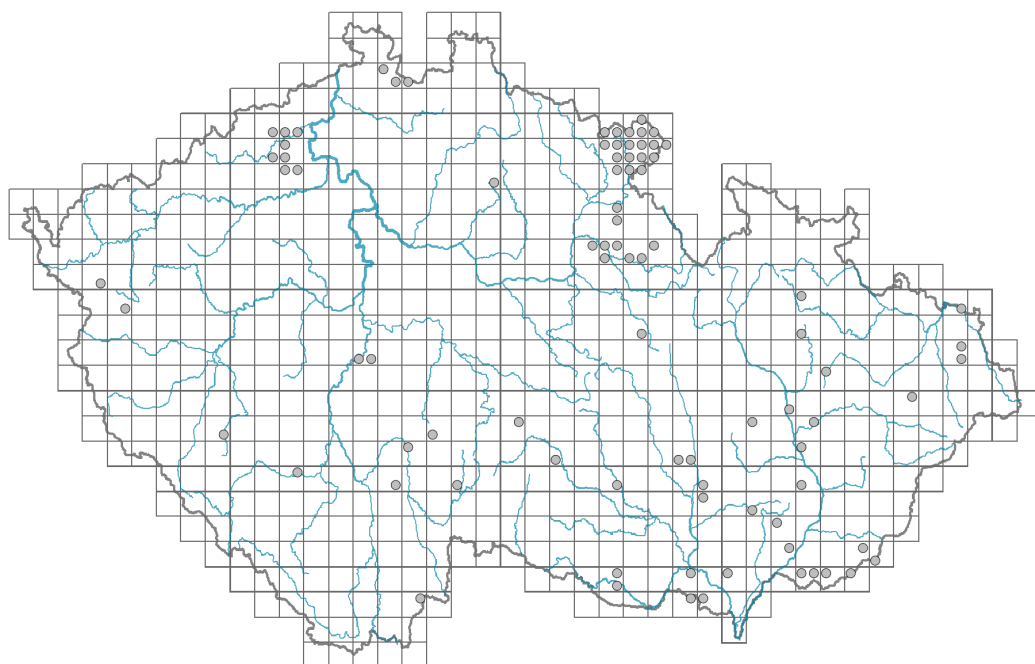


# *Arrhenatherum elatius* subsp. *elatius*

## 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]: **0.6-1.2**

Growth form: **clonal herb**

Life form: **hemicryptophyte**

Life strategy: **C - competitor**

Life strategy (Pierce method based on leaf traits): **SR/CSR**

Life strategy (Pierce method, C-score): **23.1 %**

Life strategy (Pierce method, S-score): **40.3 %**

Life strategy (Pierce method, R-score): **36.5 %**



## Leaf

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

Leaf arrangement (phyllotaxis): **alternate**

Leaf shape: **simple - entire**

Stipules: **absent**

Petiole: **absent**

Leaf life span: **summer green**

Leaf anatomy: **mesomorphic**



## Flower

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

Flowering phase: **6 Cornus sanguinea-Melica uniflora (start of early summer)**

Flower colour: **green**

Perianth type: **reduced**

Perianth fusion: **reduced**

Inflorescence type: **panicula e spiculis composita**

Dicliny: **andromonoecious**

Generative reproduction type: **facultative allogamy**

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

## Fruit, seed and dispersal

Fruit type: **dry fruit - caryopsis**

Fruit colour: **brown**

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

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

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

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

## Belowground organs and clonality

Shoot metamorphosis: **shoot tuber**

Storage organ: **shoot tuber, tuft**

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

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

Shoot life span (cyclicity): **dicyclic or polycyclic 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: **4**

Lateral spreading distance by clonal growth [m]: **0.08**

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**

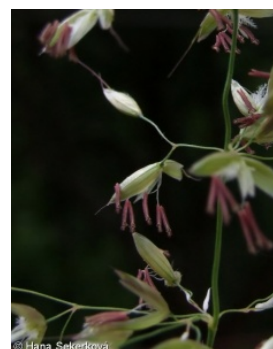
Depth of the belowground bud bank (root buds included) [cm]: **4**

## Trophic mode

Parasitism and mycoheterotrophy: **autotrophic**

Carnivory: **non-carnivorous**

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



## Karyology

Chromosome number (2n): **28**

Ploidy level (x): **4**

2C genome size [Mbp]: **14814.91**

1Cx monoploid genome size [Mbp]: **3703.73**

Genomic GC content: **47.3 %**

## Taxon origin

Origin in the Czech Republic: **archaeophyte**

Invasion status: **invasive**

Geographic origin: **Europe**

Period of introduction: **Early Middle Ages (550-1200)**

Introduction pathway: **intentional - other, unintentional - plantations, unintentional - nature**

## 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: **5x - moderate heat indicator, occurring from lowland to montane belt, mainly in submontane-temperate areas (generalist)**

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

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

Nutrient indicator value: **7 - occurring at nutrient-rich sites more often than at average sites and only exceptionally at poor sites**

Salinity indicator value: **1 - salt tolerant, mostly on low-salt to salt-free soils, but occasionally on slightly salty soils**

Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-0.62**

Herb layer disturbance frequency indicator value: **-0.42**

Whole-community disturbance severity indicator value: **0.39**

Herb layer disturbance severity indicator value: **0.4**

Whole-community structure based disturbance indicator value: **0.47**

Herb layer structure-based disturbance indicator value: **0.57**

## Habitat and sociology

Occurrence in habitats

1 Vegetation of cliffs, screes and walls

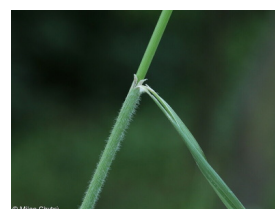
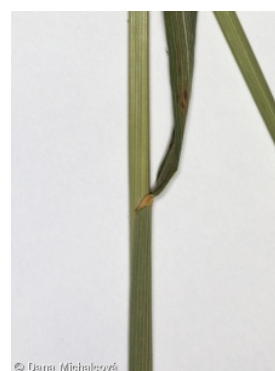
1A Calcareous cliffs: **1 - rare occurrence**

1B Siliceous cliffs and block fields: **1 - rare occurrence**

1C Walls: **1 - rare occurrence**

1D Mobile calcareous screes: **2 - optimum**

4 Wetland and riverine herbaceous vegetation



- 4A Reed-beds of eutrophic still waters: **1 - rare occurrence**  
 4B Halophilous reed and sedge beds: **1 - rare occurrence**  
 4D Riverine reed vegetation: **1 - rare occurrence**  
 4E Reed vegetation of brooks: **1 - rare occurrence**  
 4G Tall-sedge beds: **1 - rare occurrence**  
 4H Vegetation of low annual hygrophilous herbs: **1 - rare occurrence**  
 4I Vegetation of nitrophilous annual hygrophilous herbs: **1 - rare occurrence**  
 4J River gravel banks: **1 - rare occurrence**  
 4K Petasites fringes of montane brooks: **1 - rare occurrence**  
 4L Nitrophilous herbaceous fringes of lowland rivers: **2 - optimum**  
 5 Vegetation of springs and mires  
 5D Calcareous fens: **1 - rare occurrence**  
 5E Acidic moss-rich fens and peatland meadows: **1 - rare occurrence**  
 6 Meadows and mesic pastures  
 6A Mesic Arrhenatherum meadows: **4 - constant dominant**  
 6B Montane mesic meadows: **1 - rare occurrence**  
 6C Pastures and park grasslands: **1 - rare occurrence**  
 6D Alluvial meadows of lowland rivers: **1 - rare occurrence**  
 6E Wet Cirsium meadows: **1 - rare occurrence**  
 6F Intermittently wet Molinia meadows: **1 - rare occurrence**  
 6G Vegetation of wet disturbed soils: **1 - rare occurrence**  
 7 Acidophilous grasslands  
 7B Submontane Nardus grasslands: **1 - rare occurrence**  
 8 Dry grasslands  
 8A Hercynian dry grasslands on rock outcrops: **1 - rare occurrence**  
 8B Submediterranean dry grasslands on rock outcrops: **1 - rare occurrence**  
 8C Narrow-leaved sub-continental steppes: **2 - optimum**  
 8D Broad-leaved dry grasslands: **2 - optimum**  
 8E Acidophilous dry grasslands: **2 - optimum**  
 8F Thermophilous forest fringe vegetation: **3 - dominant**  
 9 Sand grasslands and rock-outcrop vegetation  
 9B Open vegetation of acidic sands: **1 - rare occurrence**  
 9C Festuca grasslands on acidic sands: **2 - optimum**  
 9D Pannonian sand steppes: **1 - rare occurrence**  
 9E Acidophilous vegetation of spring therophytes and succulents: **1 - rare occurrence**  
 9F Basiphilous vegetation of spring therophytes and succulents: **1 - rare occurrence**  
 10 Saline vegetation  
 10I Inland saline meadows: **1 - rare occurrence**  
 11 Heathlands and scrub  
 11A Dry lowland to subalpine heathlands: **1 - rare occurrence**  
 11J Willow galleries of loamy and sandy river banks: **1 - rare occurrence**  
 11L Tall mesic and xeric shrub: **2 - optimum**  
 11N Low xeric 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: **1 - rare occurrence**  
 12F Limestone beech forests: **1 - rare occurrence**  
 12H Peri-Alpidic basiphilous thermophilous oak forests: **1 - rare occurrence**  
 12I Sub-continental thermophilous oak forests: **1 - rare occurrence**  
 12J Acidophilous thermophilous oak forests: **1 - rare occurrence**  
 12K Acidophilous oak forests: **1 - rare occurrence**  
 12L Boreo-continental pine forests: **1 - rare occurrence**  
 12O Peri-Alpidic pine forests: **1 - rare occurrence**  
 12T Robinia pseudacacia plantations: **2 - optimum**  
 12U Plantations of broad-leaved non-native trees: **2 - optimum**  
 12V Spruce plantations: **1 - rare occurrence**  
 12W Pine and larch plantations: **1 - rare occurrence**  
 13 Anthropogenic vegetation  
 13A Annual vegetation of ruderal habitats: **2 - optimum**  
 13B Annual vegetation of arable land: **1 - rare occurrence**  
 13C Annual vegetation of trampled habitats: **1 - rare occurrence**  
 13D Perennial thermophilous ruderal vegetation: **2 - optimum**  
 13E Perennial nitrophilous herbaceous vegetation of mesic sites: **2 - optimum**  
 13F Herbaceous vegetation of forests clearings and Rubus scrub: **1 - rare occurrence**

#### Affinity to the forest environment

Affinity to the forest environment in Thermophyticum: **2.2 - taxon occurring partly in the forest, but mainly in open vegetation**

Affinity to the forest environment in Mesophyticum and Oreophyticum: **2.2 - taxon occurring partly in the forest, but mainly in open vegetation**

#### Diagnostic taxon

Diagnostic taxon of alliances: [TDA Arrhenatherion elatioris](#)

Diagnostic taxon of associations: [TDA02 Ranunculo bulbosi-Arrhenatheretum elatioris](#)

#### Constant taxon

Constant taxon of alliances: [KBF Balloto nigrae-Robinion pseudoacaciae](#), [TDA Arrhenatherion elatioris](#), [THF Bromion erecti](#), [THI Trifolion medii](#)

Constant taxon of associations: [KBF01 Arrhenathero elatioris-Robiniatum pseudoacaciae](#), [LCB02 Carici fritschii-Quercetum roboris](#), [SCA03 Teucrio botryos-Melicetum ciliatae](#), [TDA01 Pastinaco sativae-Arrhenatheretum elatioris](#), [TDA02 Ranunculo bulbosi-Arrhenatheretum elatioris](#), [TDA03 Poo-Trisetetum flavescentis](#), [TDA04 Potentillo albae-Festucetum rubrae](#), [TDE04 Cnidio dubii-Deschampsietum cespitosae](#), [TFC02 Erysimo diffusi-Agrostietum capillaris](#), [THF01 Carlino acaulis-Brometum erecti](#), [THF02 Brachypodio pinnati-Molinietum arundinaceae](#), [THG02 Avenulo pratensis-Festucetum valesiaca](#), [THH03 Geranio sanguinei-Peucedanetum cervariae](#), [THI01 Trifolio medii-Agrimoniolum eupatoria](#), [THI02 Trifolio-Melampyretum nemorosi](#), [XBG09 Sisymbrietum altissimi](#), [XBK03 Eragrostio poaeoidis-Panicetum capillaris](#), [XCA02 Salvia nemorosae-Marrubietum peregrini](#), [XCB04 Dauco carotae-Picridetum hieracioidis](#), [XCB08 Artemisia vulgaris-Echinopsietum sphaerocephali](#), [XCB09 Rudbeckio laciniatae-Solidaginetum canadensis](#), [XCB10 Buniadetum orientalis](#), [XCB11 Asclepiadetum syriaca](#), [XCC02 Falcario vulgaris-Elytrigietum repentis](#), [XDD02 Torilidetum japonicae](#), [XDE04 Chaerophylletum aurei](#), [XDE05](#)

***Chaerophylletum bulbosi***

Dominant taxon

Dominant taxon of associations: **KBB04 *Pruno spinosae-Ligustretum vulgaris***, **KBF01 *Arrhenathero elatioris-Robiniatum pseudoacaciae***, **TDA01 *Pastinaco sativae-Arrhenatheretum elatioris***, **TDA02 *Ranunculo bulbosi-Arrhenatheretum elatioris***, **TDA03 *Poo-Trisetetum flavescentis***, **XCC02 *Falcario vulgaris-Elytrigietum repentis***, **XCC04 *Cardarietum drabae***, **XDE04 *Chaerophylletum aurei***

Ecological specialization indices

Ecological specialization index for all vegetation types: **4.1**

Ecological specialization index for non-forest vegetation: **4.2**

Ecological specialization index for forest vegetation: **3.9**

Colonization ability

Index of colonization success (ICS): **9**

Index of colonization potential (ICP): **7**

Optimum successional age [years]: **25**

## **Distribution and frequency**

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

Floristic region: **Europe**

Continental degree: **4**

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

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

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: **662**

taxon.data.freq\_in\_quad: **2409**

Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **9.5 %**

Occurrence frequency in vegetation plots with a cover above 5%: **30.6 %**

Occurrence frequency in vegetation plots with a cover above 25%: **11.5 %**

Occurrence frequency in vegetation plots with a cover above 50%: **3.1 %**

Mean percentage cover in vegetation plots: **9.3 %**

Maximum percentage cover in vegetation plots: **88 %**

Number of habitats with taxon occurrence in the Czech Republic

Number of narrow habitats in which the taxon occurs: **62**

Number of narrow habitats in which the taxon has its optimum: **15**

Number of broad habitats in which the taxon occurs: **11**

Number of broad habitats in which the taxon has its optimum: **8**

## **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**