

Occurrence and distribution of *Chenopodium vulvaria* L. in Košice city , Slovakia

SERGEJ MOCHNACKÝ

Botanical Garden of P. J. Šafárika University in Košice, Mánesova 23, 043 52 Košice;
sergej.mochnacky@upjs.sk

Mochnacký S. (2012): Occurrence and distribution of *Chenopodium vulvaria* L. in Košice city , Slovakia. – Thaiszia – J. Bot. 22 (2): 191-195. – ISSN 1210-0420.

Abstract: In this paper the author presents the occurrence, distribution and phytocoenological classification of the endangered synanthropic species *Chenopodium vulvaria* L. in the residential agglomeration of Košice city, Slovakia.

Keywords: synanthropic plant, endangered species, therophyte, city, Slovakia

Description of the species

According to MEDVECKÁ et al (2012), *Chenopodium vulvaria* L. is annual, 5-40 cm high, grey-green, greyish floury and sticky herb with unpleasant scent. Creeping to ascending stem, lower branches prostrate, often pressed to the surface. Lower leaves egg-shaped to widely rhombic elliptical, wedge-shaped at their bases, entire or with an inconspicuous dent at their widest parts. Flowers tiny, inconspicuous, axillary, glomerate, in terminal false spikes or panicles, floral formula: $\oplus P 5 A 5 G (2)$, flowering VI-IX. Fruit is globular to slightly flattened achene, seeds kidney-like, black.

Note: Plants after crushing smell with methylamine. This typical scent can be compared to the scent of fishes (sprats). In the past, it was used due its healing effects (Herba vulvarie), antihystericum, homeopathic product. It is considered to be invasive species (MEDVECKÁ et al. 2012).

Distribution

This species grows naturally in Europe and Asia, from Mediterranean region to the mild climatic zone, eastwards to Pamir. It is introduced to North America,



Fig. 1 *Chenopodium vulvaria* L. - flowering plants in the locality of Košice

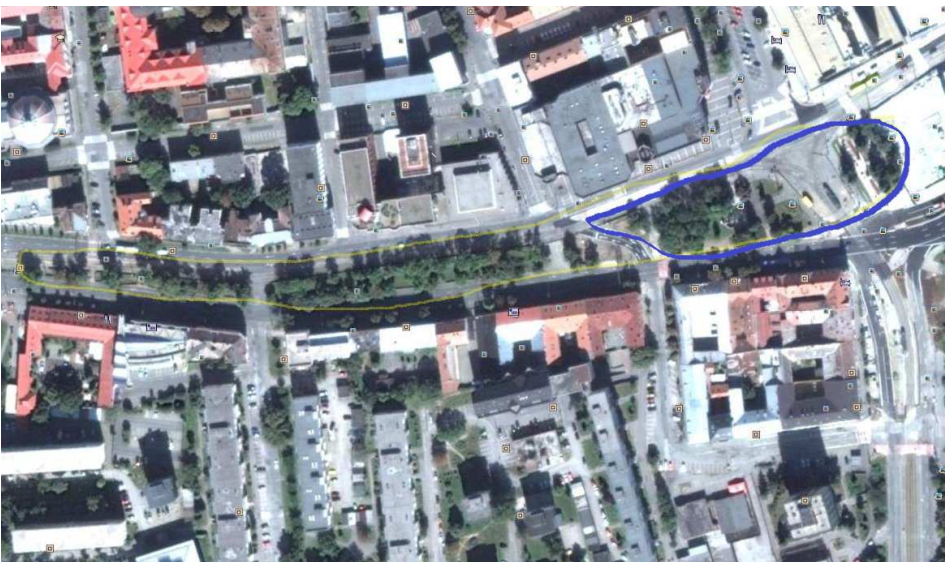


Fig. 2 Occurrence of *Chenopodium vulvaria* L. in Košice city (in the midst of the streets Štúrova and Námestie Osloboditeľov).

North Patagonia, Chile, Australia and New Zealand. In Slovakia (MARHOLD & HINDÁK 1998), it is distributed sparsely, especially in warm regions. In connection with the rebuilding of town residential areas and changed life style in cities, this species vanishes. In Košice, it occurs in a built-up area with favourable conditions (temperature, humidity, disturbance).



Fig. 3 *Chenopodium vulvaria* L. in the locality of Námestie Osloboditeľov, in Košice.

Ecology

It grows in ruderal sites, near pathways, walls, building sides, in intensively trampled down and disturbed areas. In urban agglomerations it has favourable growing conditions. It is a component part of phytobiodiversity of urban ecosystem.

Threat and protection

In Slovakia, it is classified within species VU (vulnerable). Practical protection measures do not exist, protection of this species is potentially possible in open area museums of rustic architecture.

Phytocoenological notes

During analysis of occurrence and distribution of *Chenopodium vulvaria* in Košice-city, the phytocoenological relevés were done to demonstrate the floristic composition and structure of stands.

Relevé No. 1: Košice, locality Námestie osloboditeľov, surroundings of Monument to the Soviet Army liberators, in the area near fencing; N 48°43'01.18", E 021°15'38.73", 208 m a.s.l., slope 0°, 15 m², total cover 90%, E₁ 100%, E₂ 10%, E₃ 20%, E₀ 0%, 18.07.2012, Sergej Mochnacký.

E₁: *Lolium perenne* 4, *Hordeum murinum* 3, *Poa annua* 3, *Chenopodium vulvaria* 3, *Poa pratensis* 2, *Tithymalus helioscopia* 1, *Chenopodium murale* 1, *Xanthoxalis stricta* 1, *Ch. hybridum* +, *Capsella bursa-pastoris* 1, *Polygonum aviculare* agg. 1, *Glechoma hederacea*, *Conyza canadensis* +, *Taraxacum* sect. *Ruderalia* +, *Lactuca serriola* +, *Sonchus arvensis* +, *Plantago major* +, *Malva neglecta* +, *Solanum nigrum* +, *Chenopodium album* agg. +.

E₂: *Forsythia x intermedia* +, *Ailanthus altissima* juv. +.

E₃: *Pinus sylvestris* +.

Relevé No 2: Košice, locality Námestie osloboditeľov, surroundings of Monument to the Soviet Army liberators, in the area towards Štúrova street (park); N 48°42'59.29", E 021°15'35.38", 207 m a.s.l., 20 m², total cover 100%, E₁ 100%, E₂ 10%, E₃ 20%, E₀ 0%, 18.07.2012, Sergej Mochnacký.

E₁: *Lolium perenne* 4, *Hordeum murinum* 3, *Poa annua* 3, *Chenopodium vulvaria* 3, *Poa pratensis* 2, *Tithymalus helioscopia* 1, *Chenopodium murale* 1, *Xanthoxalis stricta* 2, *Ch. hybridum* +, *Capsella bursa-pastoris* 1, *Polygonum aviculare* agg. 2, *Glechoma hederacea* 1, *Echinochloa crus-galli* 1, *Conyza canadensis* +, *Taraxacum* sect. *Ruderalia* 1, *Lactuca serriola* +, *Sonchus arvensis* +, *S. oleraceus* *Plantago lanceolata* 1, *P. major* +, *Malva neglecta* +, *Solanum nigrum* +, *Chenopodium album* agg. +, *Silene latifolia* subsp. *alba* 1, *Setaria pumila* 3, *Trifolium repens* 1, *Medicago lupulina* 1, *Galinsoga parviflora* +, *Digitaria ischaemum* +.

E₂: *Forsythia x intermedia* +, *Ailanthus altissima* +, *Spiraea media* +, *Aethusa cynapium* +.

E₃: *Ailanthus altissima* 1, *Betula pendula* r, *Juglans regia* +, *Sophora japonica* r, *Pinus sylvestris* +, *Tilia cordata* +, *Gleditsia triacanthos* r.

Relevé No. 3: Košice, locality Námestie Maratónu mieru, the stand near *Tilia cordata* MILL., N 48°43'39.05", E 21°15'12.80", 212 m a.s.l., slope 0°, 20 m², total cover 90%, E₁ 100%, E₂ 10%, E₃ 20%, E₀ 0%, 28.08.2012, Sergej Mochnacký.

E₁: *Chenopodium vulvaria* 3, *Lolium perenne* 4, *Festuca pratensis* 2, *Convolvulus arvensis* +, *Poa annua* 2, *Capsella bursa-pastoris* +, *Trifolium repens* 1, *Dactylis glomerata* 1, *Polygonum aviculare* 2.

E₂: *Juniperus virginiana*

E₃: *Tilia cordata*

After comparison of phytocoenological material from individual localities in the city with published results, the society with *Chenopodium vulvaria* can be phytotaxonomically classified as follows (JAROLÍMEK et al. 1997, LOSOSOVÁ 2009):

Stellarietea mediae R. TX. et al. ex von Rochow 1951
Sisymbrietalia J. Tx. in Lohmeyer et al. 1962
Malvion neglectae (Gutte 1966) Hejný 1978
Malvo neglectae-Chenopodietum vulvariae Gutte 1966
(*Chenopodietum vulvariae* Gutte et Pyšek 1976)

References

- JAROLÍMEK I., ZALIBEROVÁ M., MUCINA L. & MOCHNACKÝ S. (1997): Rastlinné spoločenstvá Slovenska. 2. Synantropná vegetácia. Veda, Bratislava, pp. 166 - 167.
- MARHOLD K. & HINDÁK F. (eds.) (1998): Zoznam nižších a vyšších rastlín flóry Slovenska. Veda, Bratislava.
- MEDVECKÁ J., KLIMENT J., MÁJEKOVÁ J., HALADA Ľ, ZALIBEROVÁ M., GOJDIČOVÁ E., FERÁKOVÁ V. & JAROLÍMEK I. (2012): Inventory of the alien flora of Slovakia [Přehled nepůvodní flóry Slovenska]. Preslia 84: 257–309.
- LOSOSOVÁ Z. (2009): XBI04 *Malvo neglectae-Chenopodietum vulvariae* Gutte 1972. In: CHYTRÝ M. (ed.), Vegetace České republiky. 2. Ruderální, plevelová, skalní a suťová vegetace [Vegetation of the Czech Republic 2. Ruderal, weed, rock and scree vegetation]. Academia, Praha, pp. 182-185.

Received: November 21st 2012
Revised: November 29th 2012
Accepted: December 5th 2012