

ON THE OCCURRENCE OF THE WILD PARSNIP (*PASTINACA SATIVA* L.) WITHIN THE PREŠOV CITY URBAN GREENERY

Beáta Baranová

Short communication

ABSTRACT

Pastinaca sativa L. (Apiales: Apiaceae) is an autochthonous plant species within the area of Slovakia and its wild form is found to be a natural component of the grassy biotopes. On the other side, species is found to be invasive within the area of North America, with proven consequences for the human and animal health. Based on the personal observation during the last 10 years, species was noticed within the urban greenery of Prešov city, Eastern Slovakia, since this plant previously absented there at all. Its completely new and relatively massive occurrence within the urban ecosystem, i.e. out of its natural range is interesting and unusual, at least from the botanical point of view, and, in connection to the possible health threat and because of proximity of the human settlements its undoubtedly worth increased attention. However, the cause and consequences of its spread for the urban ecosystem are unclear.

KEYWORDS

wild parsnip, *Pastinaca sativa*, urban greenery



Cultivated variety of *Pastinaca sativa* L. (Apiales: Apiacea, subspecies *Pastinaca sativa* ssp. *sativa*) is a root vegetable, closely related to carrot and parsley. Its wild form – i.e. wild parsnip is and heliophilous, 1.2 meters tall biennial/perennial herb (Figure 1) of the sunny habitats without the shadowing. The species prefers nutrients, especially nitrogen rich, chalk and limestone soils and various degrees of soil moisture. Flowering occurs from July till September. Plant could be typically found within the meadows, pastures and fields in the agricultural landscape. Based on the personal observation during the last 10 years, plant was atypically noticed in the grassy areas within the urban greenery of Prešov city, Eastern Slovakia, since it previously absented there at all.

Figure 1. Botanical illustration of the wild parsnip *Pastinaca sativa* L. (Apiales: Apiaceae) from Johann Georg Sturm's 1796 *Deutschlands Flora in Abbildungen* Botanical illustration (Source: https://commons.wikimedia.org/wiki/File:Pastinaca_sativa_Sturm28.jpg).

University of Prešov, Faculty of Humanities and Natural Sciences, Department of Ecology, 17. novembra 1, SK-081 16 Prešov, Slovakia; e-mail: beata.baranova@unipo.sk

Equally, natural range of its occurrence is in the Europe, including Britain, middle Norway, Sweden, Spain, Caucasus and Altai (AVERILL & DI TOMMASO, 2007; GLEASON & CRONQUIST, 1991; RUBATZKY et al., 1999). But, according to *Invasive plant atlas of the United States*, the species is found to be an invasive neophyte, previously introduced as a facultative biennial plant from Eurasia. Nowadays, the species is widespread throughout the United States and southern Canada, colonizing old fields, railroad embankments, roadsides or waste areas and is causing increasing problems as a weed (USDA NRCS, 2006). What's more, plants produce furanocoumarins, which can irritate digestive tracts of herbivores and so protect its foliage before being eaten, and, myristicin compound, which is alleged to be psychotropic if consumed. Equally, due to furanocoumarins, after the plant sap comes into the contact with skin and being exposed to sunlight, phyto-photodermatitis can occur in sensitive people and in livestock too, resulted in patches of redness, severe rashes, blisters or discoloration of the skin (Figure 2) (BRENNEMAN, 2010). Several medical professionals associate this plant with the burns it causes, and institutions as f.e. Southeastern Wisconsin Invasive Species Consortium warns of parsnip's potential threat to human health and recommend wearing of protective gloves, long sleeves and long pants when handling. Recently, human and livestock is exposed to more frequent contact with expanding population of this plant, so the wild parsnip has received increasing attention.



Figure 2. Examples of the ineligible *Pastinaca sativa* L. sap impact on the human skin (Sources: <https://www.cfscoop.com/news/company-news/be-aware-of-wild-parsnips> <https://www.sleoinvasives.org/invasives/tiered-species-list/wild-parsnip/>).

In summary, new and relatively massive occurrence of wild parsnip within the urban ecosystem, i.e. out of its natural range is interesting and unusual, at least from the botanical point of view. Simultaneously, in connection with the possible health threat and because of proximity of the human settlements its undoubtedly worth increased attention. That is why its previously recorded occurrence within the urban greenery of Prešov town was more closely checked. During the growing seasons 2018 till 2020, all grassy areas on housing estates number II and III of Prešov city, were regularly visually observed in July and August to assess presence/absence and extension of wild parsnip vegetation within the selected part of Prešov city.

On the basis, the presence of the wild parsnip (Figure 3) was noticed practically in the all checked grassy areas, however, plant presence ,*manifestation*, changes within the blooming period, according to mowing, as the part of the urban greenery maintenance. Eventually, several plots with *P. sativa* coverage assessed to be > 50%, were noticed within the open, sunny spaces, omitting shadow places like a park with the trees (Fig. 4, Table 1). Equally interesting, invasive neophytes *Asclepias syriaca* L. and *Stenactis annua* L. was observed within the urban greenery of Prešov city, since their presence can be, according to actual knowledges, found to be completely new too.



Figure 3. Individual specimens of the wild parsnip at the Torysa river bank.

It seems, that wild parsnip became a common part of the grassy areas within the urban greenery of Prešov city, what is in accordance with RENDEKOVÁ & MIČIETA (2016), who described the presence of *P. sativa* in the urban ecosystem of Malacky city as the fully new, in comparison to phase forty years ago. However, the cause and consequences of the wild parsnip spread for the urban ecosystem and human health are unclear.

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Figure 4. Selected grassy areas with the occurrence of *Pastinaca sativa* L. within the urban greenery of housing estate II and III, Prešov city, Eastern Slovakia.

Table 1. GPS and area of the several plots with the assessed *P. sativa* coverage > 50%

area	GPS	
>2 000 m ²	49° 0' 40.7025634" N	21° 13' 41.4177132" E
>3 000 m ²	49° 0' 4.9784213" N	21° 13' 35.7400131" E
>3 000 m ²	49° 0' 11.6677385" N	21° 13' 40.7997322" E
>3 000 m ²	49° 0' 26.8698041" N	21° 13' 41.5722084" E
>4 000 m ²	49° 1' 3.3495019" N	21° 13' 55.5926514" E
>5 000 m ²	49° 0' 22.9173911" N	21° 13' 35.0061607" E

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