MORPHOLOGICAL VARIABILITY OF SPECIES *IVA XANTHIFOLIA* 1818 (ASTERACEAE, HELIANTHAE) IN RUDERAL HABITATS

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Species *Iva xanthifolia* is invasive plant species from North America that is naturalized in the area of Europe. Iva most often inhabits a ruderal habitats, abandoned meadows and crops but sometimes grows along roadsides. The aim of this study is better understanding of species *I. xanthifolia* morphology, especially variability of organs that are responsible for production of biomass and potential allergens, which depend on habitats in urban areas, such as the city of Novi Sad.

Figure 2. *I. xanthifolia* specimen on construction waste soil substrate (*orig.*)

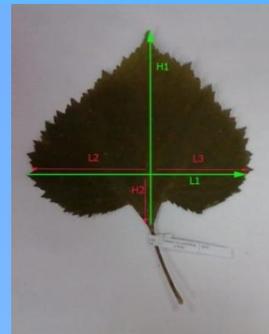Figure 3. Sandy soil type as one of observed substrates (*orig.*)

Figure 4. Analyzed morphometric characters of leaves of species *I. Xanthifolia* H1, H2, H3 – length L1, L2 - width (*orig.*)

Three sites with different type of soil substrates were selected: arable land (fig.1), construction waste (fig.2) and sandy soils (fig.3). In total were analyzed twenty quantitative characters, including twelve morphometric and eight meristic, observed organs were stem, leaf (fig.4) and inflorescence.

Processed populations show a high degree of variability which is related to the morphometric and meristic characters, which are dependent on ecological conditions.

Statistical analysis of characters included measures of central tendency: separately and for all analyzed populations, correlation analysis, as well as multivariate methods of principal components and discriminant analysis, *a priori* with populations defined as factors.

According to the first axis there is a separation of the first and the third population. The second population is separated exclusively by the second axis, which has a lower power of discrimination, mainly due to the strength of the load caused by the plant height character (fig.5).

The first discriminant axis successfully separated the first and second studied population, while is the third divided in the middle by the first discriminant axis. The third population is clearly separated by the second discriminant axis that carries a smaller percentage of the total variability of the sample (fig.6).

Figure 1. Monodominant population of I. xanthifolia on arable land (*orig.*)

This high degree of variability, may be another contribution to the assumption that process of adaptation and naturalization of Iva in our region has not been completed yet.
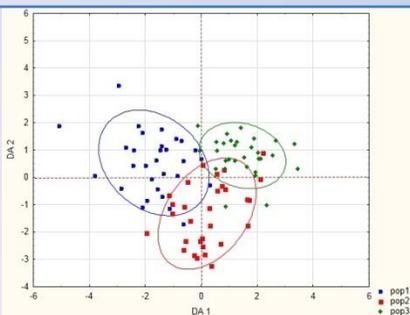

Figure 5. Positions of analyzed individuals within populations of *I. xanthifolia* in Novi Sad in the space of the first two discriminant axes according to morphometric characters (*orig.*)
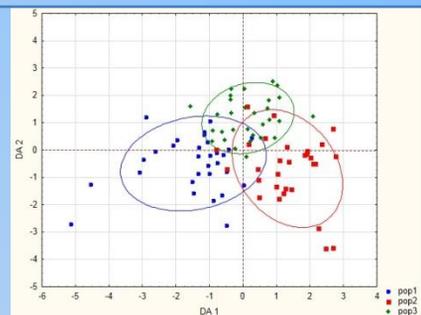

Figure 6. Positions of analyzed individuals within populations of *I. xantifolia* in Novi Sad in space of the first two discriminant axes according to meristic characters (*orig.*)