

INVASIVE SPECIES OF FLORA BELOW THE LOWER DNISTER RIVER – TILIGUL AS A POTENTIAL MEDICINAL RAW MATERIAL

Bondarenko O. Yu.

Odesa I. I. Mechnikov National University, Odessa, Ukraine

Introduction. Synanthropic plant species are elements of anthropogenically transformed areas, of which there are especially many in the South of Ukraine. Such species are often a problem for agriculture, as there are many weeds among them [1, 9]. Synanthropic species are more competitive than cultivated plants. Among synanthropic plant species, a group of species with a high invasive capacity stands out [6]. Due to their biomorphological and ecological features, these species can even compete with the components of natural coenoses, erasing the features of extra-, intra- and zonal types of flora [2, 7, 8].

However, these species are the first to settle in man-made areas. They create the basis for the processes of soil formation, become the primary elements of the future plant cover here.

Among the invasive species of plants there are those characterized by medicinal properties. Thus, garden purslane (*Portulaca oleracea* L.) is used to treat liver and stomach diseases [10]. In the traditional medicine of some countries, the raw material, quarantined in Ukraine, is *Acroptilon repens* (L.) DC. used as an antiepileptic, antimalarial, etc. agent. They are studying the possibility of fighting, with its help, diabetes and oncology [11]. Such works are also carried out in Ukraine. In particular, the presence of 55 biologically active compounds in the raw material of the invasive species *Centaurea diffusa* Lam. was established, which makes this product promising for the development of various phytopreparations with antioxidant, antitumor, diabetic, and hypocholesterolemic effects [4].

Main part. According to the results of our long-term research, 69 invasive plant species from 22 families were found in the region [3]. The status of "invasive species" is established according to literature data [6].

Among the noted invasive species, according to literature data, there are 49 species that are medicinal plants in official or folk medicine [5]. These species represent a wide range of coenoses, but the vast majority of them are ruderal plants (participants of the flora of changed, transformed ecotopes) – 33 species (67.35% of 49 species). There are significantly fewer types of natural coenoses: meadow (5 species; 10.20%), psamphytic (3; 6.12%), marsh and shrub (1 species each; 2.04% each). Two species are "fugitives" from culture (4.08% each). Three species occur in fields as weeds (6.12%).

32 species are most widely represented in the lower part of the Dniester – Tiligul interfluvium, these are mainly species of ruderal coenoses. We list them in the order of the Latin alphabet: *Acorus calamus* L., *Ailanthus altissima* (Mill.) Swingle, *Amaranthus albus* L., *Amaranthus retroflexus* L., *Ambrosia artemisiifolia* L., *Amorpha fruticosa* L., *Artemisia absinthium* L., *Artemisia annua* L., *Atriplex tatarica* L., *Ballota nigra* L., *Cannabis ruderalis* Janisch., *Capsella bursa-pastoris* (L.) Medik., *Cardaria draba* (L.) Desv., *Centaurea diffusa* Lam., *Centaurea solstitialis* L., *Cichorium intybus* L., *Conium maculatum* L., *Conyza canadensis* (L.) Cronq., *Descurainia sophia* (L.) Webb ex Prantl, *Digitaria sanguinalis* (L.) Scop., *Echinochloa crusgalli* (L.) P.Beauv., *Elaeagnus angustifolia* L., *Grindelia squarrosa* (Pursh) Dunal, *Lactuca serriola* L., *Lepidium ruderale* L., *Lycium barbarum* L., *Malva pusilla* Smith, *Onopordum acanthium* L., *Papaver rhoeas* L., *Portulaca oleracea* L., *Setaria viridis* (L.) P.Beauv., *Tripleurospermum inodorum* (L.) Sch.Bip. Nomenclature names of species are given according to [12].

Conclusions. In the lower reaches of the Dniester – Tiligul confluence, 32 species with high invasiveness were identified, which are widely represented, mainly in ecotopes with ruderal flora. All of them, according to literature, have medicinal properties.

Of course, it is not worth recommending the collection of medicinal raw materials near transport routes, on man-made industrial sites, etc., where plants can accumulate harmful substances. However, the use of raw materials of invasive species from areas represented by natural flora is quite acceptable. Especially considering the fact that such types of plants are ecologically plastic, are distinguished by rapid growth of vegetative mass, produce a large number of seeds, are competitors of natural flora species, and can even hybridize with them.

References

1. Бондаренко О.Ю. *Acroptilon repens* (L.) DC. у флорі пониззя межиріччя Дністер – Тилігул // Агроекологічний журнал. – 2023, № 3. – С. 80–86.
DOI: <https://doi.org/10.33730/2077-4893.3.2023.287766>
2. Бондаренко О.Ю. Інвазійні види флори трансформованих ділянок залізничних колій у пониззі межиріччя Дністер – Тилігул // Агроекологічний журнал. – 2022, № 4. – С. 27–33.
DOI: <https://doi.org/10.33730/2077-4893.4.2022.273246>
3. Бондаренко О.Ю. Конспект флори пониззя межиріччя Дністер – Тилігул. – Київ: Фітосоціоцентр, 2009. – 332 с.
4. Мозуль В. І., Аксьонова І.І. Панасенко О.І. Дослідження хімічного складу волошки розлогої // Актуальні питання фармацевтичної і медичної науки та практики Том 12, № 3(31), вересень – грудень 2019 р. – С. 285–290. Режим доступу:

http://dspace.zsmu.edu.ua/bitstream/123456789/12364/1/09_420_Mozul_Aksonova_et_all.pdf

5. Протопопова В.В. Синантропная флора Украины и пути её развития. – К.: Наук. думка, 1991. – 192 с.
6. Протопопова В.В. та ін. Інвазійні види у флорі Північного Причорномор'я. – К.: Фітосоціоцентр, 2009. – 56 с. Режим доступу: <https://www.botany.kiev.ua/doc/shevera21.pdf>
7. Протопопова В.В., Шевера М.В. Інвазійні види у флорі України. I. Група високоактивних видів. GEO&BIO. 2019. Vol. 17. pp. 116–135. Режим доступу: <https://doi.org/10.15407/gb.2019.17.116>
8. Стратегія біобезпеки та біологічного захисту <https://zakon.rada.gov.ua/laws/show/668/2021#Text>
9. Bondarenko O.Yu., Myronov S.L. *Euphoria davidii* Subils (*Euphorbiaceae*) in flora of railway tracks of Dniester bay bar // Вісник ОНУ. Біологія. – 2021. – Т. 26, вип. 2(49). – С. 101–108. Режим доступу: <http://dspace.onu.edu.ua:8080/bitstream/123456789/32291/1/101-108.pdf>
10. Farkhondeh Tahereh, Samarghandian Saeed. The therapeutic effects of *Portulaca oleracea* L. in hepatogastric disorders // Gastroenterologia y Hepatologia. (February 2019). Vol. 42. Issue 2. Pp. 127–132. DOI: 10.1016/j.gastrohep.2018.07.016
11. Moradia Mohammad, Mojab Faraz and Arbabi Sepideh. Biogolia Toxicity Assessment of *Asteraceae Centaurea Repens* L extract in Mice. Iranian Journal of Pharmaceutical Research. 2017. № 16 (3). P. 1071–1079. Режим доступу: https://www.researchgate.net/publication/318685033_Toxicity_Assessment_of_Asteraceae_Centaurea_Repens_L_Extract_in_Mice/link/598b7ebf0f7e9b07d21f69a3/download
12. Mosyakin S.L., Fedoronchuk M.M. Vascular Plants of Ukraine. A nomenclature Checklist. – Kiev, 1999. – 345 p.