

## INVASIVE AND POTENTIALLY INVASIVE ALOGEN PLANTS IN THE URBAN AND PERIURBAN ZONES OF OLTENIA

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### ABSTRACT

*Floristic research on this category of plants was started with some observations made under a research contract whose main objective was the complex study of anthropophilic flora in the main cities of Oltenia. The results obtained led us to monitor this category of plants to observe their evolution in the habitats in which they are installed.*

*Following numerous movements made in recent years, a floristic inventory of invasive and potentially invasive plants in the urban and periurban areas of Oltenia, totaling 64 taxa, has been compiled. If it relates to the total number of species in this category with area on the territory of our country, we can say that 50% of them prefer urban and periurban places.*

*If we add to the above the aggressiveness of some species and the presence of taxa of concern to the European Union (e.g. *Ailanthus altissima* and *Asclepias syriaca*), we can say that careful monitoring of invasive and potentially invasive plants is more than necessary. A first step would be to limit the expansion of the anthropogenic factor.*

### INTRODUCTION

The natural and semi-natural ecosystems of Oltenia are increasingly threatened by some allogeneic plant and animal species.

Invasive and potentially invasive allogeneic plants adapt very quickly to new habitats where they cause major damage.

This category of plants affects not only the biodiversity of the place but also human health, agriculture and food production.

On the territory of Oltenia there are numerous allogeneic species; some harmless to the natural vegetation of these places (ex *Artemisia annua*, *Datura stramonium*), others harmful (*Ambrosia artemisiifolia*, *Acer negundo*, *Ailanthus altissima*, etc.).

### MATERIAL AND METHOD

To carry out this study, the GPS Essentials application was installed on the phone, necessary to collect the coordinates where the plant taxa were identified.

Chorological data regarding invasive or potentially invasive allogeneic plant species are sporadically found in specialized works aimed at the flora or vegetation of a territory (Buia et Păun, 1958; Buia et al., 1959; Păun, 1967; Păun et Popescu, 1972, 1985; etc.).

The study of invasive and potentially invasive allogeneic plants in Oltenia begin after 2000 and has continued to this day.

Contributions to the corology of this category of plants were made by: Costache et Răduțoiu (2005, 2006); Răduțoiu et Costache (2006a, 2006b, 2008); Răduțoiu (2011); Răduțoiu et Stan (2013); Răduțoiu et Ștefănescu (2017).

All plants found in the field were iconographed with Panasonic camera.

Plants that could not be identified in the field were collected and subsequently determined on the basis of the literature and then included in the CRA herbarium.

The trips in the urban and periurban areas of the different cities from Oltenia

(Craiova, Rm. Vâlcea, Severin, Filiași, Balș, Slatina, Tg. Cărbunești) were made during the vegetation period with higher intensity from June to October.

## RESULTS AND DISCUSSIONS

Following the research carried out by us in the 2 years since we have been closely following these invasive and potentially invasive allogeneic plants, we can say that 64 taxa have been identified on the researched territory (Table no. 1).

If we refer to the total number of invasive and potentially invasive alien species in Romania (130), it can be said that about 50% find their area on the territory of Oltenia.

In the floristic concept, the taxa belong to 29 botanical families, the largest share having Asteraceae (17), Amaranthaceae (7), Fabaceae (4), Oxalidaceae and Poaceae with 3. The rest of the families have 1-2 representatives.

The analysis of the inventory of invasive and potentially invasive allogeneic plants from Oltenia highlights the presence of species of concern for the European Union (eg *Ailanthus altissima* (Fig. 1) and *Asclepias syriaca* (Fig. 2)).

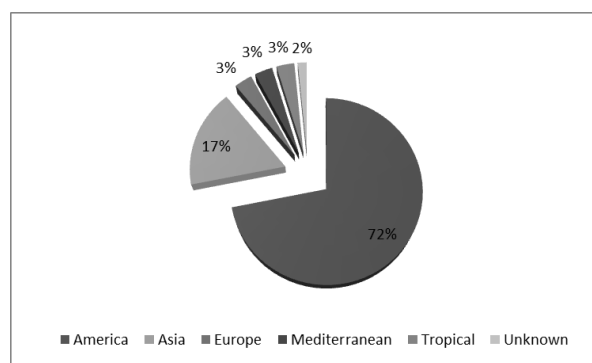


**Figure 1. *Ailanthus altissima* from Tr. Severin**

The analysis of geographical origin highlights the predominance of species originating in America (especially North America) (Fig. 3).



**Figure 2. *Asclepias syriaca* near Tg. Cărbunești**



**Figure 3. Spectrul originii geografice**



**Fig. 4. *Euphorbia maculata* L. from Slatina**



**Fig. 5. *Lonicera japonica* Thunb. From Filiași**



**Fig. 6. *Lycium barbarum* L. from Balș**



**Fig. 7. *Oxalis stricta* L. near Craiova**



**Fig. 8. *Phytolacca americana* L. besides Tg. Cărbunești**



**Fig. 9. *Reynoutria japonica* Houtt. besides Rm. Văcea**



**Fig. 10. *Sorghum halepense* (L.) Pers. near Tg. Cărbunești**



**Fig. 11. *Xanthium spinosum* L. from Slatina**

## CONCLUSIONS

In conclusion, we can say that the list of invasive or potentially invasive allogeneic plants brings together species of concern at EU level (eg *Ailanthus altissima* and *Asclepias syriaca*), but also taxa that cause great damage to the habitats in which *Ambrosia artemisiifolia*, *Acer negundo* and *Amorpha fruticosa* settle.

The impact exerted by these plants in the places where they were identified is manifested by changing the phytodiversity of places, changing agricultural production, landscape, ecosystem services, human health, etc.

Minimizing zooanthropogenic activities in different habitats would help limit the spread of these species.

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Table 1

### List of invasive and potentially invasive alien plants from urban and periurban zones of Oltenia

Scientific name	Family	Geographical origin
<i>Abutilon theophrasti</i> Medik.	Malvaceae	Asia
<i>Acer negundo</i> L.	Aceraceae	North America
<i>Ailanthus altissima</i> (Mill.) Swingle	Simaroubaceae	East Asia
<i>Amaranthus albus</i> L.	Amaranthaceae	North America (Central)
<i>Amaranthus blitoides</i> S. Watson var. <i>blitoides</i>	Amaranthaceae	North America (Central)
<i>Amaranthus crispus</i> (Lesp. et Thévenau) N. Terracc.	Amaranthaceae	South America
<i>Amaranthus deflexus</i> L.	Amaranthaceae	South America

<i>Amaranthus hybridus</i> L.	Amaranthaceae	North America
<i>Amaranthus powellii</i> S.Watson	Amaranthaceae	North America
<i>Amaranthus retroflexus</i> L.	Amaranthaceae	North America
<i>Ambrosia artemisiifolia</i> L.	Asteraceae	North America
<i>Amorpha fruticosa</i> L.	Fabaceae	North America
<i>Armoracia rusticana</i> P.Gaertn., B.Mey. et Scherb.	Brassicaceae	SE Europe, West Asia
<i>Artemisia annua</i> L.	Asteraceae	Asia (SE Europe?)
<i>Asclepias syriaca</i> L.	Asclepiadaceae	North America
<i>Azolla filiculoides</i> Lam.	Azollaceae	North America
<i>Bidens frondosus</i> L.	Asteraceae	North America
<i>Bidens vulgatus</i> Greene	Asteraceae	North America
<i>Matricaria discoidea</i> DC.	Asteraceae	North America
<i>Dysphania ambrosioides</i> (L.) Mosyakin & Clemants	Chenopodiaceae	Tropical America
<i>Erigeron canadensis</i> L.	Asteraceae	North America
<i>Cuscuta campestris</i> Yunck.	Convolvulaceae	North America
<i>Cytisus scoparius</i> (L.) Link.	Fabaceae	Europe (Central, Atlantic-Mediterranean)
<i>Datura stramonium</i> L.	Solanaceae	America
<i>Echinocystis lobata</i> (Michx) Torr. et A. Gray	Cucurbitaceae	North America
<i>Elaeagnus angustifolia</i> L.	Elaeagnaceae	Asia
<i>Elodea nuttallii</i> (Planch.) H.St John	Hydrocharitaceae	North America
<i>Erigeron annuus</i> (L.) Pers. subsp. annuus	Asteraceae	North America
<i>Erigeron annuus</i> (L.) Pers. subsp. strigosus (Muhl. ex Willd.) Wagenitz	Asteraceae	North America
<i>Euphorbia maculata</i> L. (Fig. 4)	Euphorbiaceae	North America
<i>Galinsoga parviflora</i> Cav.	Asteraceae	South America
<i>Galinsoga quadriradiata</i> Ruiz et Pav.	Asteraceae	Central America
<i>Gleditsia triacanthos</i> L.	Fabaceae	North America
<i>Helianthus decapetalus</i>	Asteraceae	North America
<i>Helianthus tuberosus</i> L.	Asteraceae	North America
<i>Ipomoea purpurea</i> Roth	Convolvulaceae	Tropical America
<i>Juncus tenuis</i> Willd.	Juncaceae	North America
<i>Bassia scoparia</i> (L.) A. J. Scott	Chenopodiaceae	Asia, East Europe
<i>Lonicera japonica</i> Thunb. (Fig. 5)	Caprifoliaceae	East Asia
<i>Lycium barbarum</i> L. (Fig. 6)	Solanaceae	East Asia
<i>Morus alba</i> L.	Moraceae	East Asia
<i>Oenothera biennis</i> L.	Oenotheraceae	North America
<i>Oxalis corniculata</i> L.	Oxalidaceae	Mediterranean
<i>Oxalis dillenii</i> Jacq.	Oxalidaceae	North America
<i>Oxalis stricta</i> L. (Fig. 7)	Oxalidaceae	North America (+As E)
<i>Panicum capillare</i> L.	Poaceae	North America
<i>Parthenocissus inserta</i> (A. Kerner) Fritsch	Vitaceae	North America
<i>Parthenocissus quinquefolia</i> (L.) Planchon	Vitaceae	North America

<i>Paspalum paspalodes</i> (Michx.) Scribn.	Poaceae	Tropical (Africa, America)
<i>Phytolacca americana</i> L. (Fig. 8)	Phytolaccaceae	North America
<i>Populus</i> × <i>canadensis</i> Moench	Salicaceae	×
<i>Prunus cerasifera</i> Ehrh.	Rosaceae	West Asia, SE Europe
<i>Quercus rubra</i> L.	Fagaceae	North America
<i>Reynoutria japonica</i> Houtt. (Fig. 9)	Polygonaceae	East Asia
<i>Robinia pseudoacacia</i> L.	Fabaceae	North America
<i>Rudbeckia laciniata</i> L.	Asteraceae	North America
<i>Sicyos angulatus</i> L.	Cucurbitaceae	North America
<i>Solidago canadensis</i> L.	Asteraceae	North America
<i>Solidago gigantea</i> Aiton	Asteraceae	North America
<i>Sorghum halepense</i> (L.) Pers. (Fig. 10)	Poaceae	Mediterranean
<i>Vallisneria spiralis</i> L.	Hydrocharitaceae	Tropical, subtropical
<i>Veronica persica</i> Poir.	Scrophulariaceae	SV Asia
<i>Xanthium orientale</i> L. subsp. <i>italicum</i> (Moretti) Greuter	Asteraceae	North America
<i>Xanthium spinosum</i> L. (Fig. 11)	Asteraceae	South America