

INVASIVE PLANTS FROM ROMANIA WITH IMPACT ON BIOLOGICAL BIODIVERSITY

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ABSTRACT: *In this paper are presented general aspects of invasive plant species, the causes of plant invasions, as well as their impact on biological biodiversity. Invasive plants may have the effect of eliminating rare or threatened species from native flora.*

KEY WORDS: *invasive species, plants*

1. INTRODUCTION

One of the greatest threats to biological diversity is the biological invasion caused by foreign species. Their impact can be huge and irreversible. Invasion of foreign species is often responsible for the deterioration of some ecosystems and the disappearance of native species. Invasive plants are one of the current threats to biodiversity, with an impact that can become major and irreversible, leading to habitat deterioration and a larger scale of ecosystems, unbalancing species relationships and even leading to the disappearance of native species.

Invasive species are an increasingly acute threat to indigenous biodiversity in Europe. Plants and animals that adapt to foreign habitats can capture indigenous flora and fauna, causing damage to the environment. These organisms are known as "invasive species". They also have economic and social repercussions, for example on human health, fisheries, agriculture and food production. Alien invasive species means a foreign species whose introduction and / or spread threaten biological diversity.

The potentially invasive alien species is a species whose introduction and / or spread could pose a threat to biological diversity. Potentially invasive alien species are currently widespread so that they may become invasive alien species in a few years.

The introduction of a species from its natural area into another area (region, country, continent) is carried out, directly or indirectly, by man. Some introductions are deliberate, deliberate, while others are unintentional.

2. CAUSES OF VEGETAL INJECTIONS

For millennia, natural barriers such as oceans, mountains, rivers and deserts have prevented species from developing beyond the boundaries of their natural habitats. Over the past hundreds of years, these barriers have become ineffective in the face of major global forces that helped foreign species to travel enormous distances to new habitats and become so invasive or not. The main causes of plant invasions are:

- globalization, unprecedented development of transport, trade and tourism, customs and inadequate quarantine practices;
- wrong practices in horticulture and forestry;
- degradation of natural habitats, ecosystems and agricultural fields;
- global climate change;
- moments of physiological regression of native species;
- not knowing the information about the potential danger of new entrants;

- insufficiently developed legal and institutional system

The highest percentage of the 100 most invasive alien species in the world is given by terrestrial plants (32%), followed by invertebrates (17%) and mammals (14%).

This percentage also reflects the situation in Romania, as an order of the invasive groups, with the percentage differences given by the particular situation in our country (fig.1).

In table 1 are presented invasive species, frequent in agricultural crops in Romania, and in table 2 the main invasive harmful plants.

3. SPECIES OF INVASIVE PLANTS WITH AN IMPACT ON NATURAL ECOSYSTEMS

Some of the plants introduced by man in a certain geographical region, after a shorter or longer naturalization phase, escaped from cultures, first in the anthropogenic habitats, then in the semi-natural and natural ones, thus forming the spontaneous flora of the country adopted.

At the same time, they are the most aggressive on different types of ecosystems and even on people's health.

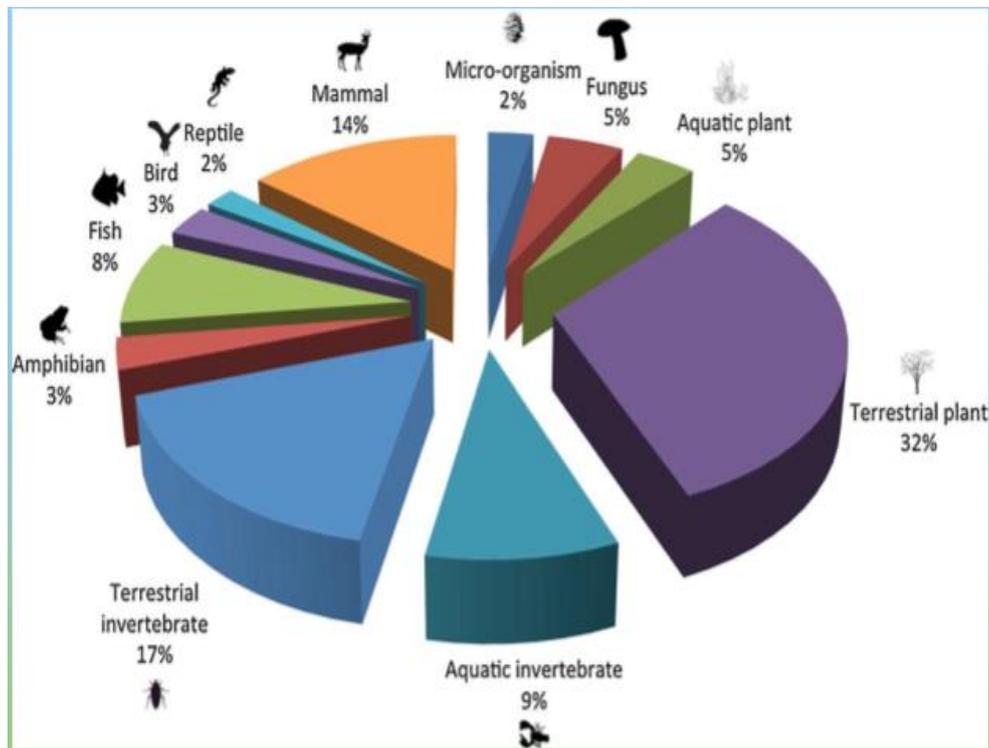


Figure 1. Presenting the situation of invasive groups

Table 1. Invasive species, frequent in agricultural crops in Romania

The name	The family	Origin	Input mode
<i>Amaranthus powelii</i>	<i>Amaranthaceae</i>	America de Nord	accidentally
<i>Amaranthus retroflexus</i>	<i>Amaranthaceae</i>	America de Nord	Accidentally
<i>Conyza canadensis</i> (L.).	<i>Asteraceae</i>	America de Nord	Accidentally
<i>Cuscuta campestris</i>	<i>Cuscutaceae</i>	America de Nord	Accidentally
<i>Datura stramonium</i> L.	<i>Solanaceae</i>	America	Accidentally
<i>Echinochloa oryzicola</i>	<i>Poaceae</i>	Asia de E, SE	Accidentally
<i>Erigeron annuus</i> (L.)	<i>Asteraceae</i>	America de Nord	Accidentally

<i>Galinsoga parviflora</i>	<i>Asteraceae</i>	America de Sud	Accidentally
<i>Galinsoga quadriradiata</i>	<i>Asteraceae</i>	Mexic	Accidentally
<i>Lycium barbarum</i> L.	<i>Solanaceae</i>	Asia de E	Ornamental
<i>Sorghum halepense</i> (L.)	<i>Poaceae</i>	r. Mediterană	Accidentally
<i>Veronica persica</i>	<i>Scrophulariaceae</i>	Asia de SV	Accidentally
<i>Xanthium orientale</i> L.	<i>Asteraceae</i>	America de Nord	Accidentally

Table 2. The main invasive harmful plants

TAXON	NUMBER OF PAs
Fallopia japonica et sp.	48
Impatiens glandulifera	29
Robinia pseudoacacia	26
Ailanthus altissima	16
Heracleum mantegazzianum	11
Ambrosia artemisiifolia	10
Solidago canadensis	9
Crassula helmsii	8
Solidago gigantea	8
Buddleja davidii	7
Acer negundo	6
Amorpha fruticosa	6

• *Robinia pseudacacia* L. is a North American species, introduced in Europe in the 19th century XVII, as an ornamental plant, in the Paris Botanical Garden. Subsequently, the species was widely cultivated in Europe as an ornamental plant, melliferous, forestry, etc. Wherever it has been introduced, acacia has spread rapidly and has a high rhythm of growth, has, in many places, formed densely populated populations that have shaded land, hindering the growth of heliophilous species and displacing native vegetation.

The accumulation of nitrogen in the soil due to the locust tree root nodules can cause serious problems in conserving native vegetation by stimulating nitrophile species; also through very intense sweating, acacia slime down the soil water, reducing the available water for other plants. (fig.2)

Figure 2. *Robinia pseudacacia* - invasive species

• *Ambrosia artemisiifolia* - originates in North America. It seems that in Europe it was brought together with different cereals. In our country, for the first time, it was first observed in Orșova in 1910 and if it was mentioned only about 40 years ago only on the Danube and the Someș floodplain, it is now present all over the country, from the plain area to the areas with about 600 m altitude.

It is very common on railway tracks, road edges, unpolluted fields in urban and

rural environments. Sometimes it penetrates into agricultural crops (eg, corn) and even in semi-natural habitats.(fig.3)

The negative impact of Ambrosia is manifested especially on human health. The pollen of this plant is a strong allergen, causing the necessary protection, requires permanent monitoring and immediate elimination.



Figure 3. Habitat invaded by *Ambrosia artemisiifolia*

4. CONCLUSIONS

- One of the greatest threats to biological diversity is the biological invasion caused by foreign species
- Their impact can be huge and irreversible. Invasion of foreign species

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