

STUDY REGARDING THE WIDESPREAD OF THE WEED *AMBROSIA ARTEMISIIFOLIA* L. IN THE SATU-MARE COUNTRY

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Abstract

The paper presents the results of the study from 60 locations of the Satu-Mare country during 2006-2007. The invasive species *Ambrosia artemisiifolia* L., one of the most nocive plants in the world due to allergies induced by pollen, was identified almost of the Satu-Mare country area. In the 20 locations from West part of the Satu-Mare country *Ambrosia artemisiifolia* L was present in groups over 100 individuals. In the Centre of the Satu-Mare Country, the weed was present in groups smaller than 10 individuals in 20 locations. In the North of Satu-Mare country (9 locations) the *Ambrosia artemisiifolia* L was not presence.

Key words: invasive weed, pollen, allergy, *Ambrosia artemisiifolia*, Satu-Mare country

INTRODUCTION

The species of plants that belong to the *Ambrosia* type, are kown as the most nocive plants in the world, due to allergies that they induce (Rich 1994). The polen produced by this species, in the blooming period (August-September), has a high potential of causing allergies, known as „hay fever” and astmatic reactions (Bohren and colab. 2006).

In Europe, according to Hegi writtings (1906), the species was identified for the first time in 1863 in Germany, in the areal of the Brandenburg and Pfaffendorf lands. It was still there to be studied, since 1865. It was signaled in other areas of Central Europe. Here it didn't spread within the spontaneous flora because of its reduced acclimation capacity, the wet and cold climate from the mentioned areas would not permit the seeds maturation (Béres 1981, Béres and colab., 2006).

During the 60's and 70's, its presence became a real problem for the public health in France where approximately 100.000 people were affected in the Rhone – Alpes region, (Lambelet 2005).

Presence of the *Ambrosia artemisiifolia* L. species was also signaled in Switzerland at the end of the 19th, but a massive spread of the species was stopped in the moment that the conditions permitted the species to expand gradually, today becoming a grave danger. In Switzerland, the invasion of the species, is coming from France and Italy migrating along with the excavated construction materials and by the help of agricultural tools. A study made by the Swiss Agricultural Research Institute (Agroscope Changins – Wädenswil ACW) in 2005, shows the fact that beside the hotbeds already established on the arable

terrains and those along the driveways, the plant grows especially on moors and in gardens of almost entire Switzerland. Pursuant to in 2005, there was initiated a national campaign with the purpose of making this plant known to the population, with the regard to recognise and destroy the plant by the population (Bohren and colab. 2006).

Toth and colab. (2004) affirm that in 1986, in Hungary, over 380 thousands of hectares were invaded by *Ambrosia artemisiifolia* L. and in 2003, the species was identified in 5,4 million hectares, with a massive invasion in 700 thousands hectares out of total.

On the territory of Romania, for the first time, *Ambrosia artemisiifolia* L. species was signaled in 1908, in the area of Banat, more precisely in Orșova, the area belonged to the Austro-Hungarian Empire at the time (according to: Jávorka (1910); Timar (1955); Anghel and colab. (1972); Béres and colab. (2006). Therewith it was signaled in the Cluj region, at Șodorit on the rubble of the flooded everglade of the Someș and on the shore of the Danube, after Flora Romaniae Exicata 1921-1947 (Hodișan și Morar 2005, 2008, Domuța C., 2005).

Later it was identified in other parts of Romania, in Moldova- to Ungheni region, after Borza and Arvat (1935), in Sighet area, after Topa Em. and Boșcaiu N. (1965), at Huși and Bârlad, after Mititelu D. (1970) and in Muntenia la Ploiești region, after Negrean G. (1971). Ardelean and Karácsony (2002), signal the presence of this species and in Western Field, on the Valley of Ier and Fărcășescu and Laurer (2007) identify the species in many locations in Timiș county, situated in the West of the country (Hodișan 2007).

Recent descriptions signal the spread of the *Ambrosia artemisiifolia* L. species in Bihor county, in North – Western locations of the country, where it is growing in almost all types of soil and it is met until the altitude of 692 meters high. (Hodișan and colab. 2003; Hodișan and Morar 2005).

MATERIALS AND METHODS

The observations were made in all the 60 locations (commune, cities and town) of the Satu/Mare County.

The observations regarding the spread of the *Ambrosia artemisiifolia* L. species were made in public areas inside the localities (parks, public gardens, forests) but also in the limiting area of the localities (agricultural holdings, forests), in the industrial perimeters (sites, quarries), also along the communication paths (communal, county and national roads and railroads).

The determinations were made between 2006-2007 in August and September, when the plants can easily be identified as singular individuals or gruped in compact populations.

It was traced the location of the areals on the map, called locations, which contain one or more populations of plants and which lately was noted in the surrounding of the nearest locality. These locations contain the communal administrative limit.

Depending on the number of individuals from a population, the locations were grouped in four areas:

- **area I**, represents those locations in which the species has over 100 individuals grouped in populations, which can cover more dozens of squaremeters;

- **area II**, represents those locations in which the species has less than 10 individuals grouped in populations and the surface which they cover it's only a few squaremeters;

- **area III**. Determines those locations in which there were identified a few individuals, which at the end of the vegetation period (october) couldn't produce mature seeds for reproduction. The reappearance of the species in this area is insured only by annual reseeding after the dissemination insured by the animals and the birds that cross the area or with the occasion of product transports from the area.

- **area IV**. represents the free zone, where it wasn't signaled the presence of the species, but it doesn't exclude the possibility of an emergence of some individuals in this area due to the causes prior presented

There were made pictures and there were written down: type of soil, the form of relief and the altitude of the location where it was identified the presence of the species.

In according with the grouping of the locations there were made maps of the area.

RESULTS AND DISCUSSIONS

The observations were made 2006 and 2007 and 4 areas were established (figure 1):

- **Area I** determines an areal situated in the West of the county and contains the territory of 20 locations: Carei, Urziceni, Foieni, Sanislău, Pişcolt, Petreşti, Andrid, Pir, Santău, Căuaş, Tiream, Craidorolţ, Terebeşti, Moftin, Căpleni, Bervenî, Doba, Vetiş, Dacia and Satu Mare. In these locations the populations of the common ragweed have over 100 grouped individuals.

- **Area II** determines an areal situated in the Centre of the county and contains the territory of 20 locations Săuca, Cean, Săcăşeni, Acâş, Supur, Beltiug, Ardud, Viile Satu Mare, Homorodu, Păuleşti, Cuciu, Odoreu, Medieşu Aurit, Botiz, Livada, Lazuri, Micula, Halmeu, Apa and Tăşnad. In

these locations the populations of the common ragweed have less than 10 grouped individuals.

- **Area III** determines an areal situated on the East and South-East of the county and contains the territory of 11 locations Bogdand, Hodod, Socond, Bârsău, Crucișor, Valea Vinului, Pomi, Orașul Nou, Vama, Certeze and Negrești Oaș. In these locations were identified a few individuals of the common ragweed, ungrouped.

- **Area IV** represents a free area of *Ambrosia artemisiifolia* L. and it's situated in North of the county where there was no presence of the species and contains the territory of 9 locations, Bixad, Călinești-Oaș, Gherța-Mică, Târșolț, Cămărzana, Turț, Turulung, Batarci and Tarna Mare.

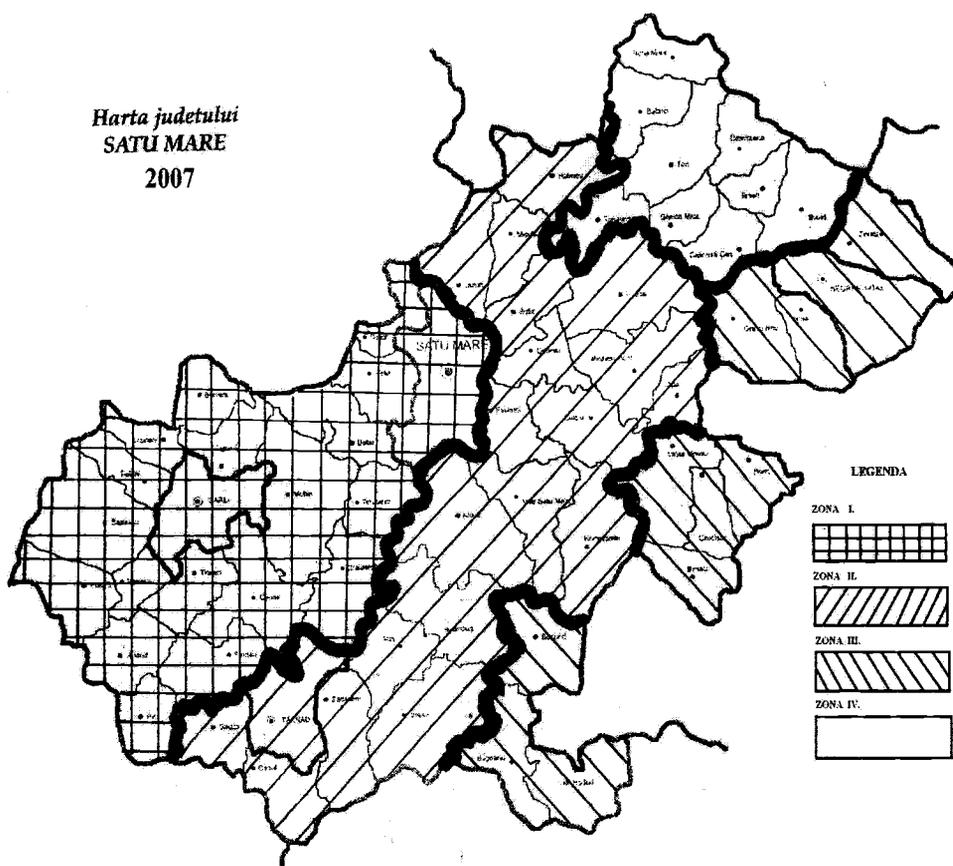


Figure 1. The widespread *Ambrosia artemisiifolia* L. in Satu Mare county in 2007

CONCLUSION

The researches carried out during 2006 and 2007 show the presence of the invasive weed *Ambrosia artemisiifolia* L. almost of the Satu-Mare country area.

In the 20 locations from West part of the Satu-Mare country *Ambrosia artemisiifolia* L was present in groups over 100 individuals.

In the Centre of the Satu-Mare Country, the weed was present in groups smaller than 10 individuals in 20 locations.

The *Ambrosia artemisiifolia* L. was identified in a few individuals ungrouped from 11 locations in a East and South East of Satu-Mare Country.

In the North of Satu-Mare country (9 locations) the *Ambrosia artemisiifolia* L was not presence.

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The purpose of this study was to survey the spread and distribution of this species in Slovakia and to analyse its airborne pollen pattern.

Materials and methods: To evaluate the spatiotemporal dynamics of Ambrosia invasion in the territory of Slovakia, herbarium specimens, published databases and field investigations were considered. Aerobiological sampling was based on the analysis of pollen records at five aerobiological stations in Slovakia. For Bratislava and Banská Bystrica Monitoring stations, trends in Ambrosia pollen seasons were determined using Mann-Kendall test and Sen's slope estimator. The study regarding the dissemination of the invasive species *Ambrosia artemisiifolia* within Bihor County, Annals of Oradea University. Of late the use of biofertilizers has gained much acceptance and research interest especially in the developed countries due to ecological impacts associated with the use of synthetic inorganic fertilizers in farming. Microbial formulations could be organism-specific or a consortium of organisms. Microbial consortium biofertilizers, the main focus of this chapter, have been reported as contributing significantly to plant adaptation to various abiotic stressors in "extreme" habitats. Recent studies on terrestrial invertebrates from Satu-Mare County were made in the lower course of Tur River during the inventory of flora and fauna of the Tur River Natural Reserve. These studies focused on the following invertebrate groups: Odonata (Szilassy 2008), Homoptera (Orosz 2008), Lepidoptera (Szabó 2008), Formicidae (Kiss & Fetykó 2008), Araneae (Fetykó 2008). The aim of this study was to establish the composition of different terrestrial invertebrate communities from the main habitats of Resigheia region. Satu-Mare County is located in the north-western part of Romania. Resigheia village (47°36' N, 22°19' E) belongs to the study of seed traits variation is especially important in the case of plant invasion. The seed is often the dispersal vector of invasive plant (Cain et al., 2000), and is then to the invasion process. The species substantially spread in numerous European countries (Chauvel et al., 2006; Kazinczi et al., 2008; Smith et al., 2013; Solomon et al., 2007). It is both a weed colonizing spring crops and a ruderal plant invading open disturbed habitats, such as wastelands, roadsides or riverbanks (Bassett and Crompton, 1975). For convenience, the entire dispersal unit of *A. artemisiifolia* will be referred to as a seed. PDF | The genus *Ambrosia* has more than 19 spp., all species are weeds and distributed in temperate and subtropical regions of the world. *Ambrosia* | Find, read and cite all the research you need on ResearchGate. *A. artemisiifolia* is dominant spp. in the first two years of succession in uncultivated fields. The weed plants contain phenolic compounds and terpenes. | Figures - uploaded by Shamsheer S Narwal.