

VERBESINA ENCELIOIDES – A NEW ALIEN PLANT IN ROMANIA

VERBESINA ENCELIOIDES – O NOUĂ PLANTĂ ALOHTONĂ ÎN ROMÂNIA

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REZUMAT

O nouă plantă alohtonă – *Verbesina encelioides* – este raportată din Dobrogea Centrală, România. Prezentăm informații despre caracteristicile sale morfologice, biologice, ecologice, invazivitate și răspândire.

ABSTRACT

A new alien plant species – *Verbesina encelioides* – is reported from Central Dobrogea, Romania. We provide information about its morphological features, biology, ecology, invasiveness and distribution.

INTRODUCTION

The alien flora of Romania currently includes 435 species, 384 of which are neophytes (Anastasiu & Negrean 2005). Species of alien origin make up about 11.5 % of the total flora of the country (Ciocârlan 2000), but new alien species are continuously reported (e.g. Anastasiu & Negrean 2008, Sîrbu & Oprea 2008), further increasing the number of non-native taxa in the national flora.

In the present paper we report a new alien plant species for Romania with a short description and distribution range based on published data and examined herbarium specimens.

MATERIAL AND METHOD

During field work on alien invasive plants in Dobrogea and Danube Delta, we recorded a new alien species – *Verbesina encelioides*. We recorded geographic coordinates using WGS 84 system, biological and ecological features, as well as the plant species associated. We also questioned local people on the arrival data and presence of this plant in their localities. We took digital photographs and voucher specimens that are deposited in the Herbarium of University of Bucharest [BUC]. The taxonomy and nomenclature of species follow Tutin et al. (1964-1980) and the definition of invasive status is that used by Richardson et al. (2000) and Pyšek et al. (2004).

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RESULTS AND DISCUSSIONS

Verbesina encelioides (Cav.) Bentham & Hooker fil. ex A. Gray (Fig. 1) belongs to Asteraceae family and is native in North America (Hansen 1976). This species is an erect, branched annual, about 30-50 cm height, but sometimes reaching up to 130 cm (Hansen 1976). Leaves are simple, petiolate, opposite below and without auricles, alternate above, toothed, with fine white hairs on the underside. Flowers heads resemble with small sunflowers and can be solitary or in cluster of up to three heads. We counted up to 42 flower heads per plant. Ligulate florets are 10-15, 15-25 mm long, yellow to bright-yellow, 3-lobed at apex. Tubular florets are also yellow. Achenes of ligulate florets are triangled, tuberculate, blackish, 4 × 2 mm, while achenes of tubular florets are flattened, white-winged, covered with fine hairs, blackish, 5-5.5 × 4-4.5 mm (Fig. 2). Every head flowers could has about 100 flattened achenes and 10 triangled achenes. *Verbesina encelioides* has no relatives in Romanian flora, so it can not be confused with other taxa.

Current distribution of *Verbesina encelioides* includes North America, Central America, South America, Africa, Asia, Oceania and Europe (EPPO, 2008). For Europe Hansen (1976) reported its presence as doubtful in Germany, Sweden and Switzerland, while EPPO sources indicate it from Denmark, Spain, UK and Austria (EPPO 2008).

In Romania we found *Verbesina encelioides* in few locations from Central Dobrogea, where it covers large surfaces: Sarighiol de Deal E - 44° 42' N, 028° 31' E, Sarighiol de Deal SW - 44° 41' N, 028° 29' E (Tulcea County), Râmnicul de Jos - 44° 37' N, 028° 26' E, Grădina N - 44° 34' N, 028° 26' E, Cheia N - 44° 31' N, 028° 25' E, Cheia S - 44° 30' N, 028° 25' E (Constanța County).

The way of introduction and time of arrival in Romania remain unknown. For other countries there are reports regarding the introduction of seeds with wool, or as contaminants in pasture hay or cereal grain (EPPO 2008).

According to locals and our observations, *Verbesina encelioides* flowers from September to October, after the abundant rains. The number of achenes produced per plant can reach 4500. In October, these are dispersed under or nearby the parent plant, or by winds. We have not data about germination, but according to local people this plant appears after gathering in the crops and after rain.

Verbesina encelioides can encompass a variety of habitats, temperatures and elevations (Shluker 1999). We found it in stubble fields, lucerne fields (*Medicago sativa* subsp. *sativa*) and in ruderal places along roads, up to 245 m altitude. The area of occurrence is characterized by soil of carbonated chernozem type, drought and high temperatures during the summer time. Generally, *Verbesina encelioides* displays allelopathic effects inhibiting native plants growth (EPPO 2008). However, we found this species accompanied by: *Reseda lutea*, *Iva xanthifolia*, *Xanthium strumarium* subsp. *italicum*, *Chenopodium strictum*, *Ballota nigra* subsp. *nigra*, *Hibiscus trionum*, *Amaranthus retroflexus*, *Amaranthus albus*, *Convolvulus arvensis*, *Artemisia absinthium*, *Cannabis sativa* subsp. *spontanea*, *Artemisia vulgaris*, *Berteroa incana*, *Conyza canadensis*, *Elymus repens* s.l., *Setaria verticillata*, *Datura stramonium*, *Onopordum acanthium*, *Cirsium arvense*, *Hyoscyamus niger*, *Sinapis arvensis*, *Cynodon dactylon*.

Verbesina encelioides is reported as weed in many crops from different regions and countries (EPPO 2008). In Europe this plant it could be an emerging invader take into account its invasive and aggressive behaviour shown where it has been introduced (EPPO 2008). In Romania, *Verbesina encelioides* could be considered as

naturalized, but with a high invasive potential favoured by the dry climate of Dobrogea region and by the high proportion of areas with disturbed habitats.

Verbesina encelioides is a poisonous plant especially for livestock (EPPO 2008). Its toxicity has been confirmed by local people that call it “iarbă de tiță”, this meaning poison weed. However, sheep do not consume it.

Although *Verbesina encelioides* is a beautiful plant, local people does not use it as ornamental because of its unpleasant smell.

To eradicate this plant we recommend chemical control, as well as mechanical control for small surfaces. Special measures for quarantine weeds are also required.

CONCLUSIONS

A new alien plant is reported from Romania – *Verbesina encelioides* – native in North America. Although its occurrence is presently limited to few locations in Central Dobrogea, the species seems to be naturalized, but there are conditions to become invasive.

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Fig. 1 Verbena encelioides – habitus (orig.)



Fig. 2 Verbena encelioides – winged achenes (orig.)