

*Dragan K. Vajgand, Ljubica M. Vajgand,  
Karlo A. Vajgand*

Nikole Pašića 9, 25000 Sombor, vajgand@eunet.yu

## *Iris spuria* L. (*Iridaceae*) AT TWO NEW LOCALITIES IN THE VOJVODINA PROVINCE

**ABSTRACT:** *Iris spuria* L. was found at two new locations in the Vojvodina Province in 1997, both of them in the vicinity of Sombor: near the village of Kruševlje (CR59 according to 10x10 km UTM grid) and near the village of Bački Monoštor, in the Kozara Forest (CR47 according to 10x10 km UTM grid). Patches of the plants were sketched and observed until 2001. The populations in both locations had been stable, though under possible influence of humans (picking, burning) and animals: bloom-eater (*Trapinota hirta*), and wild pigs (*Sus scrofa*). Fencing off stand with *Iris spuria* L. population in the Kozara Forest is recommended.

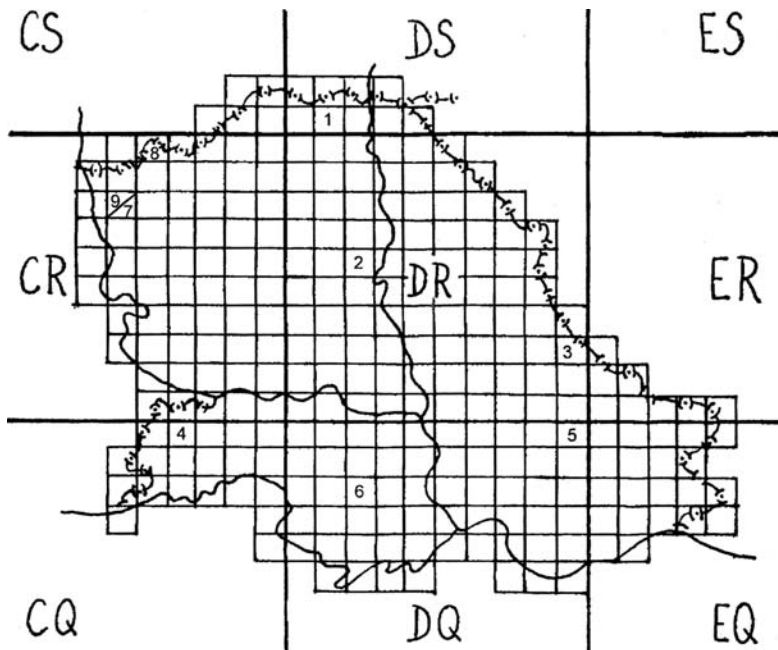
**KEY WORDS:** conservation, habitat, *Iris spuria*, population, Sombor, the Vojvodina Province

### INTRODUCTION

Soó (1973) states that *Iris spuria* L. (*Iridaceae*) is a native in Western Mediterranean and the Pannonian Province with limited occurrence in Central Europe. According to *Flora Europea* (Tutin et al., 1980) the species commonly occurs from eastern Sweden to central Spain, north-eastern Greece and the southern Ukraine.

*Iris spuria* L. is a rare plant in the floras of the Republic of Serbia and the Vojvodina Province. It has been found in six locations in Serbia, five of these on the territory of the Vojvodina Province (Map 1). Fritsch (taken from Stjepanović-Veseličić, 1976) found it near Gornji Milanovac. Lengyel's (1915) finding of this species northwest of Horgoš was confirmed by Sturc (1973). Kovács (1929) reported (taken from Obradović et al., 1984), that it had disappeared from moist, saline, marshy black soil in the surroundings of Stari Bečej. It was found by Stojanović et al. (1985) near Konak, on the bank of a shallow canal next to a larger patch of shrubbery. Obradović and Boža (1987) found *Iris spuria* in eastern Srem, near the highway Belgrade-Zagreb, without providing a precisely described location.

Knežević (1994) reported a finding for Alibunar, Stojšić and Panjković (1998) for most places near Šimanovci and for the lowest part of Štrbac — Crna bara.



Map 1. Locations of *Iris spuria* in the Vojvodina Province  
 1 Horgoš; 2 Stari Bečej; 3 Konak; 4 Eastern Srem (approximation); 5 Alibunar; 6 Šimanovci;  
 7 Štrbac — Crna Bara; 8 Kruševlje 9 the Kozara Forest near Bački Monoštor

We supposed that *Iris spuria* is native in the vicinity of Sombor. In this paper we describe habitats where it was found in 1997, with estimates on the population status until 2001.

#### CLIMATE OF SOMBOR VICINITY

The climate is continental with certain specific local features. The annual mean temperature is 10.8°C. The coldest month is January with the average temperature of -1.8°C, the warmest is July with the maximum average of 21.3°C. The absolute minimum is -27.2°C, the absolute maximum 39.6°C (the amplitude is 66.8°C). Early autumn frost and late spring frost are usual, occurring approximately on 24th October and on 10th April, respectively. The earliest autumn frost occurred on 30th September and the latest spring frost on 3rd May. Due to temperature extremes, the local climate is distinctly continental.

Precipitation is largely influenced by cyclone activity. The total annual mean precipitation is 585.5 mm, with variations between 404 mm and 912 mm. The highest average (69.9 mm) occurs in June, the lowest (31.5 mm) in

March. Summer showers (short but heavy) occur frequently. Such distribution of precipitation belongs to the Central European or Danube basin precipitation regime.

According to Lang's rain factor which depends on temperature and precipitation, Sombor vicinity is a moderately humid climate zone, on the border between the steppe and forest types of climate.

The mean annual air humidity is 77.3%, with the highest average in January (87.8%) and the lowest in July (70.0%). The mean annual overcast is 58%, the mean annual insolation is 2171 hours, i.e., 49.4% of the possible insolation with respect to latitude. Northwesterly and northerly are the most frequent winds; koshava, a strong northeasterly wind, also reaches the region. Data on the local climate (for periods 1925—1940 and 1949—1968) were obtained from Dukanović (1970) and supplemented with data (for the period 1948—2000) from the Faculty of Agriculture, University of Novi Sad.

## METHOD

The vicinity of Sombor was inspected during the flowering periods of *Iris spuria* in May and June, 1997—2001. The patches covered by fertile and sterile plants were measured and sketched. We counted all individuals and entered them on a millimeter paper (Figures 1 and 2). Status of the population was evaluated 10—15 times each year. Nomenclature of the registered plant species is given according to Soó (1964—1973).

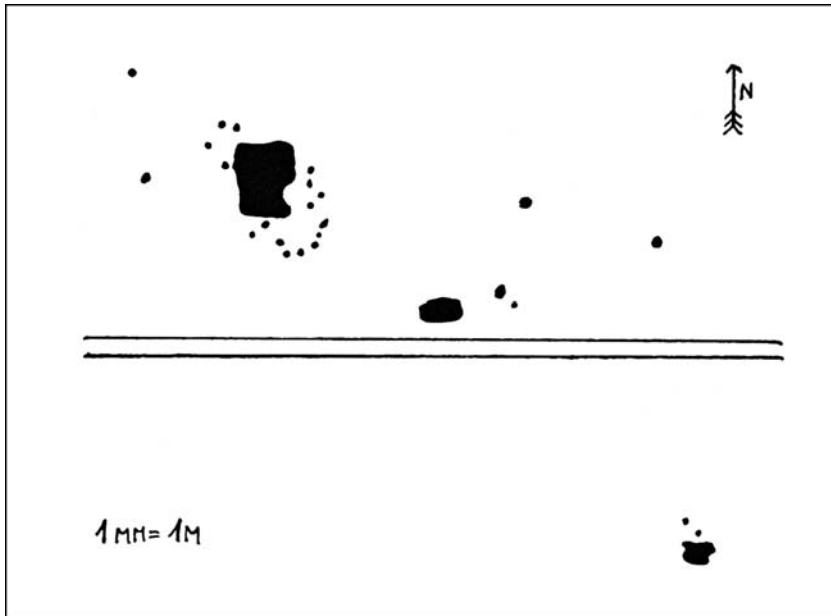


Fig. 1. Habitat of *Iris spuria* near Kruševlje. Plants of *Iris spuria* are marked in black color.

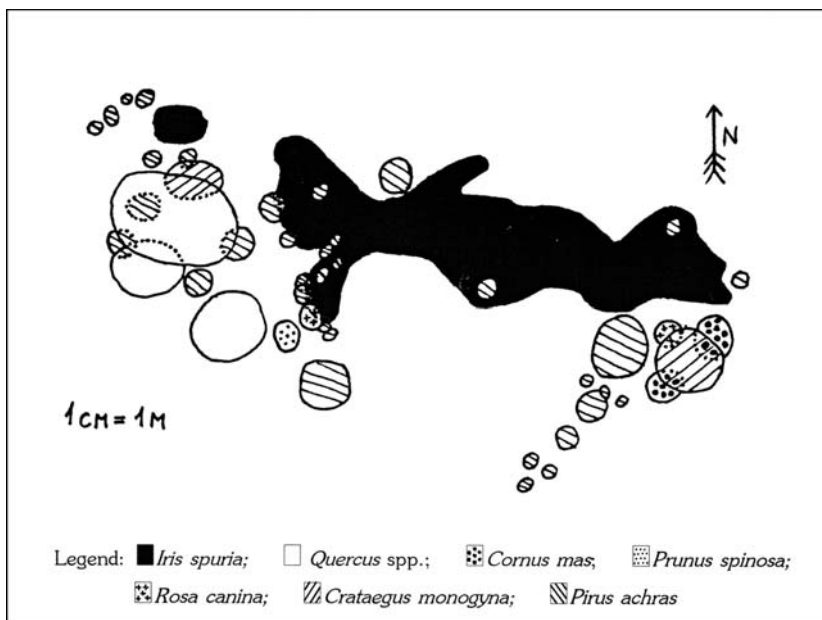


Fig. 2. Habitat of *Iris spuria* in the Kozara Forest near Bački Monoštor

## RESULTS

Northeast of the Kruševlje village (CR59 according to 10x10 km UTM grid) approximately 800 fertile individuals of *Iris spuria* were found (Map 1, location 8). The average altitude of the site is 90 m. A drainage canal is 1.5 m deep (Figure 1). About 40 m far from the site, the terrain is about 50 cm lower and, because of a high salt accumulation, only *Lepidium crassifolium* W. et K. grows there. The drainage canal was covered with a typical marshy vegetation predominated by *Phragmites communis* Trin., *Typha latifolia* L. etc. The surrounding flat area was uniformly overgrown by saline vegetation with small patches of meadow vegetation. The most abundant plants were *Euphorbia lucida* W. et K., *Tetragonolobus maritimus* (L.) Roth., *Plantago schwarzenbergiana* Schur., *Plantago lanceolata* L., *Rhinanthus angustifolius* Gmel., *Achillea asplenifolia* Vent., *Serratula tinctoria* L., *Centaurea panonica* (Heuff.) Simk., *Briza media* L. and *Ononis* sp. In this location, individuals of *Iris spuria* were fully insolated, both in terms of intensity and duration. A small group of *Iris spuria* individuals grew on the other side of the canal. It may be explained in two ways. The excavation of the drainage canal might have cut through the population of *Iris spuria*, destroying its central part, or it may be that the population expanded to the opposite bank. Since during our four-year observations there were no notable signs of change in the size of population, we concluded that the first option is more probable.

The neighboring meadows are used for haymaking, but the stands of *Iris spuria* are not mowed due to the abundance of *Ononis* sp. In 1998, the site was exposed to fire which spread from the neighboring stubble field. The greater part of seeds inside pods remained undamaged because the firefront swept rapidly across the site. A real danger to the population was the occurrence of a bloom-eater *Trapinota hirta*, the beetle which hatched in large numbers (2–3 insect per inflorescence) in 1999 and almost completely destroyed the flowers. That year, seedpods were very rare.

North of the village of Bački Monoštor (CR47 according to 10x10 km UTM grid), in the Kozara Forest, approximately 80 fertile individuals were found (Map 1, locality 9). The altitude was 91m and the patch itself was in a 10–20-cm microdepression (Figure 2). The vegetation consisted of the herbaceous, shrub and tree layers. With regard to the position and height of the surrounding shrubs and trees (*Quercus* sp., *Cornus mas* L., *Prunus spinosa* L., *Rosa canina* L., *Crataegus monogyna* Jacq., *Pirus achras* G art n.; Figure 2), the *Iris spuria* patches receive 40% of the annual insolation. The following plant species were found around the iris patches: *Tritolium campestre* Schreb., *Trifolium incarnatum* L., *Chamaecytisus ausfriacus* Link., *Genista tinctoria* L., *Cynanchum vincetoxicum* L., *Dorycnium germanicum* (Gremli) Rinkli, *Euphorbia cyparissias* L., *Centaurium vulgare* Raf. subsp. *uliginosum* (W. et K.) Soó, *Filipendula vulgaris* Mönch., *Anthoxanthum odoratum* L., *Aster punctatus* W. et K. subsp. *canus* Soó, *Lysimachia nummularia* L. and *Prunella laciniata* (L.) Nath.

The population of *Iris spuria* near Bački Monoštor is endangered. It is situated near a forest path and inflorescences are frequently picked by passers-by. The main problem are wild pigs. They dig out rhizomes and either eat them or leave them to dry in the sun. Although the Kozara Forest belongs to the Gornje Podunavlje Protected Area, it seems that additional protection is needed. The stands should be fenced to keep out wild pigs and signs should be posted warning people to save this rare species.

## CONCLUSION

*Iris spuria* was found in two locations in the vicinity of Sombor, near the villages of Kruševlje and Bački Monoštor (the Kozara Forest). The two sites and the conditions in them are different. Near Kruševlje, about 800 individuals grow in a meadow while in the Kozara Forest about 80 flowering plants grow in a brush.

The factors which greatly influence the survival of the *Iris spuria* populations are: human activity (mowing, burning, collecting), bloom-eater (*Trapinota hirta*) and wild pigs. The population in the Kozara Forest should be fenced for improved protection.

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### *Iris spuria* L. (*Iridaceae*) НА ДВА НОВА ЛОКАЛИТЕТА У ВОЈВОДИНИ

Драган К. Вајганд, Љубица М. Вајганд и Карло А. Вајганд  
Николе Пашића 9, 25000 Сомбор, vajgand@eunet.yu

### Резиме

Током 1997. године у околини Сомбора је пронађена *Iris spuria* на два локалитета. Североисточно од села Крушевље (на УТМ мрежи 10x10 km у квадрату ЦР59) (Карта 1. локалитет 8) расте око 800 биљака *Iris spuria* које цветају. Надморска висина терена је 90 m, прилично је уједначена, а неравнине су мање од 30 cm. Једина већа депресија је канал за одводњавање дубине око 1,5 m. Околну вегетацију чине нискорастуће, једно- и вишегодишње зељасте биљке, па је *Iris*

*spuria* изложена пуном осунчавању, како у погледу јачине, тако и у погледу трајања. Популација *Iris spuria* је посматрана до 2001. године. Установљено је да је она стабилна у погледу броја цветајућих биљака. Станиште је 1998. године захватила ватра. Број оштећених семенки у чаурама је био мали јер је ватра трајала кратко. Током 1999. године тврдокрилац цветојед (*Trapinota hirta*) био је многобројан све време цветања. Те године чауре са семенкама су биле права реткост. Други локалитет се налази у шуми Козара, северно од села Бачки Моноштор (На УТМ мрежи у квадрату ЦР47) (Карта 1. локалитет 9). На овом станишту расте око 80 биљака *Iris spuria* које цветају (Скица 2). Надморска висина терена је 91 m, а сама оаза *Iris spuria* је у микродепресији дубокој 10—20 cm у односу на околни терен. Околна вегетација се састоји из три спрата: зељастих, жбунастих и спрата дрвенастих биљака! С обзиром на положај и висину дрвећа и жбуња, биљке *Iris spuria*, добијају око 40% осунчавања на годишњем нивоу. Оаза *Iris spuria* се налази у близини шумског пута, па људи беру ове биљке у време цветања. Ипак највећу штету причињавају дивље свиње које ријући земљу и тражећи храну ископавају ризоме *Iris spuria* из земље. Ископане ризоме дивље свиње поједу или се они осуше и пропадну. Мада је шума Козара у оквиру заштићеног подручја Горње Подунавље, сматрамо да би било потребно додатно заштитити популацију *Iris spuria*, ограђивањем станишта спречити прилаз дивљих свиња, а за људе би требало ставити упозорење да не беру цвасти и не уништавају примерке ове ретке врсте.