



SPOROBOLUS PUNGENS (SCHREBER) KUNTH (*POACEAE*), RARE AND ENDANGERED PSAMMOPHYTIC PLANT SPECIES IN CROATIA

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Sporobolus pungens (Schreber) Kunth is rare and endangered psammophytic plant species, with four localities in Croatia known to date, all on the central and south Dalmatian islands. In October 2001 a new locality was found on the island of Mljet, in Blaca Bay seashore sands, as a part of the psammo-halophytic community *Echinophoro-Elymetum farcti* (*Ammophilion*).

Key words: *Sporobolus pungens*, flora, Croatia, Mljet, psammophyte, *Echinophoro-Elymetum farcti*

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Sporobolus pungens (Schreber) Kunth, rijetka i ugrožena psamofitska biljna vrsta, dosad je bila poznata s četiri nalazišta u Hrvatskoj na srednjodalmatinskim i južnodalmatinskim otocima. U mjesecu listopadu 2001. nađeno je novo nalazište na otoku Mljetu, u uvali Blaca, na obalnim pijescima u sastavu psamohalofitske asocijacije *Echinophoro-Elymetum farcti* (*Ammophilion*).

Ključne riječi: *Sporobolus pungens*, flora, Hrvatska, Mljet, psamofiti, *Echinophoro-Elymetum farcti*

INTRODUCTION

The genus *Sporobolus* comprises ca 120 predominantly pantropic species (TZVELEV, 1989). There are only two indigenous species in Europe: *S. pungens* and *S. indicus* (L.) R. Br. (HANSEN, 1980), and there are some adventitious species (CONERT,

1998). In the flora of Croatia (ILIJANIĆ & TOPIĆ, 2000) three species of the genus *Sporobolus* were recorded: *S. neglectus* and *S. vaginiflorus* are designated as naturalised species and *S. pungens* is an indigenous and endangered species.

S. pungens belongs to the subtropical floral element (PIGNATTI, 1982) and it is generally distributed around the Mediterranean basin: South Europe, Syria and Egypt, growing on seashore sands and marshes (NYÁRÁDY, 1972; HANSEN, 1980).

The occurrence of *S. pungens* (under the name *Agrostis pungens* Schreb.) in the flora of Croatia was firstly noted by VISIANI (1852: 336): »Hab. ad litus scopulorum circa insulam Lesina [Hvar], unde misit Al. Stalio.« Subsequently, based on this quotation, it was noted by SCHLOSSER & VUKOTINOVIĆ (1869: 1226) and also by HAYEK (1933: 337).

GINZBERGER (1921) noted this species on the islet of Veli Lukavac, south of the island of Hvar, and it is quite probable that this is the same locality quoted by Visiani (l. c. 1852). The second and third locality of *S. pungens* in Croatia were found on seashore sands in Pržina Bay near Lumbarda and on a sandy beach in Prižba, both on the island of Korčula (TRINAJSTIĆ, 1971). The fourth locality was found on the island of Biševo (PAVLETIĆ, 1974; 1975).

In the herbarium collections ZA and ZAHO there are no specimens of this species from Croatia.

The south Dalmatian island Mljet has an area of 100 km². In its geological structure limestones and dolomites from the Cretaceous period are predominant but on the easternmost part of the island diluvial sands are also present. They form sandy beaches, a very rare type of habitat on the coast of Croatia. The island has a true Mediterranean climate with the lowest average temperature of 8.1 °C in January and the highest average temperature of 24.8 °C in July. The average annual precipitation is 973 mm and there are 2500 hours of sunshine per year (BRALIĆ, 1995). Mljet belongs to the true Mediterranean evergreen vegetation belt. An area of 31 km² in the western part of the island was proclaimed a national park in the year 1960.

The flora of Mljet is well researched (cf. REGULA-BEVILACQUA & JURKOVIĆ-BEVILACQUA, 1980; REGULA-BEVILACQUA *et al.*, 1981; ILIJANIĆ & REGULA-BEVILACQUA, 1982; ILIJANIĆ *et al.*, 1983; REGULA-BEVILACQUA & ILIJANIĆ, 1984; TRINAJSTIĆ, 1985) and to date 716 taxa of vascular plants have been recorded.

New locality of the species *Sporobolus pungens* on the island of Mljet

Sporobolus pungens (Fig. 1) was found in Blaca Bay on the easternmost edge of the island of Mljet (Fig. 2), coordinates 42° 41' 28.2" N and 17° 44' 35.3" E, estimated with the Germin GPS device.

It is a small bay almost completely closed and separated from the open sea. Communication with the sea is restricted to one narrow passage. This situation provides very still water and unobstructed sedimentation of sand. The whole bay is surrounded with *Pinus halepensis* forest. *S. pungens* was found growing on the open sand in only one dense patch of ca 7 m², 5 m distant from the sea. Inside this patch



Fig. 1. *Sporobolus pungens* (Schreber) Kunth

there were no other plant species. It is quite possible that the whole population is a clone because of the vegetative propagation with widely creeping rhizomes. From floristic composition of the surrounding vegetation (Tab. 1) it can be concluded that it belongs to the association *Echinophoro-Elymetum farcti* Gehu 1987.

For *S. pungens* the status of endangered species as proposed by ILIJANIĆ & TOPIĆ (2000) can be confirmed. To date, only four localities of this species in have been noted Croatia: the islet of Veli Lukavac near the island of Hvar, seashore sands near Lumbarda and a sandy beach in Prižba on the island of Korčula, the island of Biševo, and the new locality Blaca Bay on the island of Mljet. However, the locality

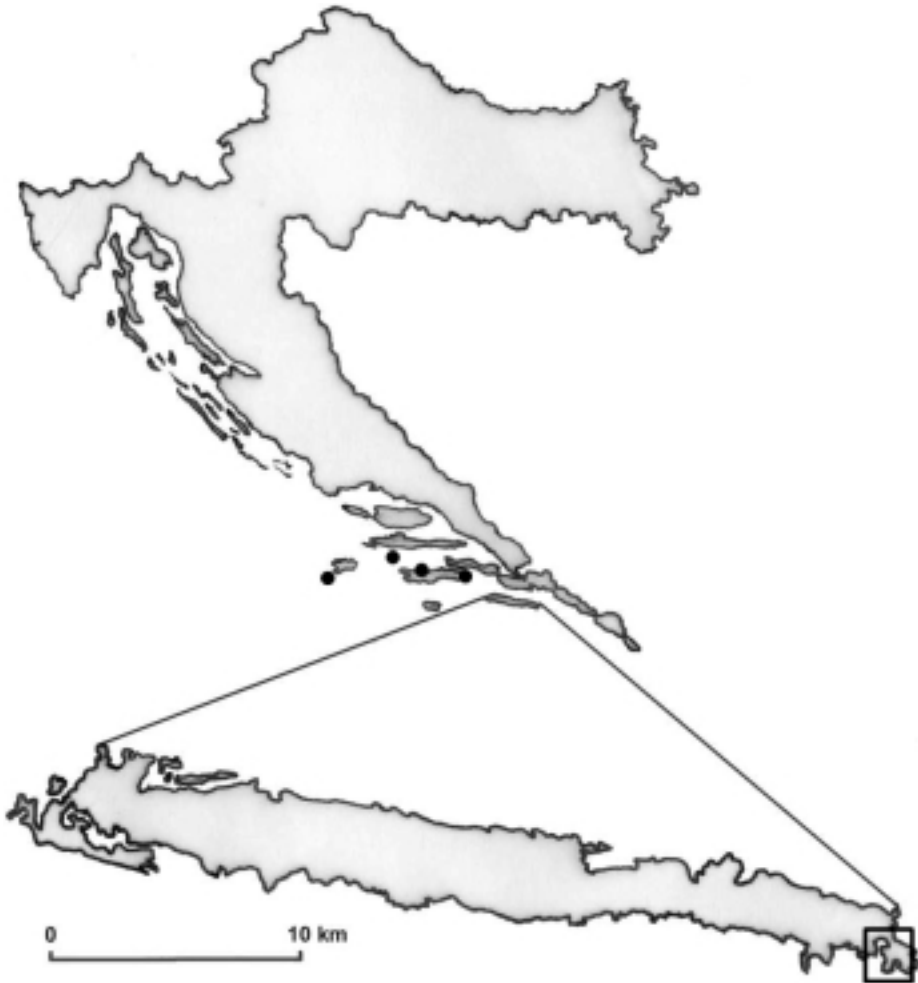


Fig. 2. Localities of *Sporobolus pungens* in Croatia:

● previous known localities, □ new locality

in Prižba is very questionable because no sandy beach exists in Prižba, and, especially, because Prižba is misplaced on the map following the article (cf. PAVLETIĆ, 1975). Furthermore, sand vegetation near Lumbarda is vanishing because of very vigorous tourist activity in recent decades, which means that new research into this locality is necessary.

Because of the geological structure of the Croatian coast, sandy shores are a very rare type of habitat, and are additionally endangered by tourism. Hence as well as *S. pungens* a lot of other plant species restricted to such type of habitat are also on the list of The Red Book (NIKOLIĆ & TOPIĆ, 2002): *Calystegia soldanella* (L.) R. Br.,

Tab. 1. Floristic composition of psammophytic vegetation in Blace Bay

No. of veg. record:	1	2	3	4
Surface of veg. record (m ²):	30	30	30	30
Distance from the sea (m):	27	34	21	35
Total cover (%):	55	55	50	60
<i>Echinophoro-Elymetum farcti</i> Gehu 1987				
<i>Echinophora spinosa</i> L.	2	2	1	1
Charact. spec. of class <i>Ammophiletea</i> Br.-Bl. et R. Tx. 1943 (incl. transgressive species)				
<i>Sporobolus pungens</i> (Schreb.) Kunth		(4)		
<i>Elymus farctus</i> (Viv.) Runemark ex Melderis	2	2	1	1
<i>Cyperus capitatus</i> Vandelli	2	1	3	2
<i>Eryngium maritimum</i> L.		+	1	
<i>Pancreatum maritimum</i> L.		+	r	
<i>Medicago marina</i> L.	1			
<i>Euphorbia paralias</i> L.		r		
Companions				
<i>Xanthium strumarium</i> L.		+		
<i>Euphorbia peplis</i> L.			+	
<i>Cakile maritima</i> Scop.			r	
<i>Salsola kali</i> L.			r	
<i>Pinus halepensis</i> Miller				2
<i>Teucrium capitatum</i> L.				1
<i>Cistus salvifolius</i> L.				1
<i>Juniperus phoenicea</i> L.				+
<i>Lagurus ovatus</i> L.				+
<i>Petrorhagia saxifraga</i> (L.) Link				+
<i>Dorycnium hirsutum</i> (L.) Ser. in DC.				r
<i>Fumana</i> sp.				r
<i>Linum strictum</i> L.				r

Echinophora spinosa L., *Pancreatum maritimum* L., *Saccharum ravennae* (L.) Murray. *Hainardia cylindrica* (Willd.) Greuter. The only way to protect this species is protection and conservation of the remaining sandy shores.

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S A Ž E T A K

***Sporobolus pungens* (Schreber) Kunth (*Poaceae*), rijetka i ugrožena psamofitska biljna vrsta u Hrvatskoj**

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Sporobolus pungens (Schreber) Kunth, cirkummediteranska psamofitska vrsta, rijetka je i ugrožena biljka hrvatske flore. Do sada su bili poznati lokaliteti otočić Veli Lukavac kod otoka Hvara, dva lokaliteta na otoku Korčuli i otok Biševo. U listopadu 2001. godine otkriven je novi lokalitet u uvali Blaca na krajnjem jugoistočnom dijelu otoka Mljeta. Tamo raste na obalnim pijescima u maloj populaciji površine oko 7 m², udaljenoj od mora 5 m. Okolna vegetacija pripada zajednici *Echino-phoro-Elymetum farcti* Gehu 1987 (*Ammophilion*) koja je tu najpotpunije razvijena u odnosu na cijelu hrvatsku obalu. Očuvanje staništa, osobito sprečavanjem pretjeranog iskorištavanja u turističke svrhe, jedini je način zaštite te rijetke i ugrožene biljne vrste.