

GERMPLASM SOURCES FROM SPONTANEOUS FLORA OF CONSTANȚA COUNTY

SURSE DE GERMOPLASMĂ DIN FLORA SPONTANĂ A JUDEȚULUI CONSTANȚA

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Abstract. The purpose of the study has been the identification of some ornamental value species from the spontaneous flora of Dobrogea. From the administrative point of view, the natural habitat where the studies were carried out was located in Constanta County, where some areas known for the flower variety and the presence of some plant species entered in various zoological categories (rare, threatened species) were targeted. In the present document, six of the representative taxa identified on the field are presented, from which reproductive material was harvested with the purpose of setting up experimental "ex situ" cultures in the conditions from Iași: *Jasminum fruticans* L.; *Sedum maximum* (L.) Suter (sin. *S. telephium* ssp. *maximum* (L.) Krock., *S. stepposum* Boiss.), *Sedum urvillei* DC. (sin. *Sedum sartorianum* Boiss.) ssp. *hillebrandtii* (Fenzl) Soó, *Sempervivum ruthenicum* Schnittsp. et C.B. Lehm., *Statice latifolia* Sm. (sin. *Limonium latifolium* (Sm.) O. Kuntze), *Teucrium polium* subsp. *capitatum* (L.) Arcangeli. The ornamental value of these taxa is supported not only by the characteristic morphological traits, but also by the ability to adapt to culture conditions different from the natural habitat.

Key words: germplasm, spontaneous flora, ornamental value, Constanța County.

Rezumat. Studiul a avut ca scop identificarea unor specii cu valoare ornamentală din flora spontană a Dobrogei. Din punct de vedere administrativ, habitatul natural în care s-au făcut studiile a fost reprezentat de județul Constanța, fiind vizate, în special, câteva areale cunoscute prin bogăția floristică și prin prezența unor specii de plante încadrate în diferite categorii zoologice (specii rare, subamenințate). În lucrarea de față sunt prezentate șase dintre taxonii reprezentativi care au fost identificați în teren și de la care s-a recoltat material pentru înmulțire, cu scopul înființării culturilor experimentale "ex situ" în condițiile de la Iași: *Jasminum fruticans* L.; *Sedum maximum* (L.) Suter (sin. *S. telephium* ssp. *maximum* (L.) Krock., *S. stepposum* Boiss.), *Sedum urvillei* DC. (sin. *Sedum sartorianum* Boiss.) ssp. *hillebrandtii* (Fenzl) Soó, *Sempervivum ruthenicum* Schnittsp. et C.B. Lehm., *Statice latifolia* Sm. (sin. *Limonium latifolium* (Sm.) O. Kuntze), *Teucrium polium* subsp. *capitatum* (L.) Arcangeli. Valoarea ornamentală a acestor taxoni este susținută nu numai de însușirile morfologice caracteristice, ci și de capacitatea de adaptare în condiții de cultură diferite de habitatul natural.

Cuvinte cheie: germoplasmă, flora spontană, valoare ornamentală, județul Constanța.

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INTRODUCTION

Located in the SE of Romania, between the Danube and Black Sea, Dobrogea is a specific area, where the eco-climatic conditions have caused a great diversity of ecosystems (Sălăgeanu G. et al., 1978). The vegetation is typical steppe; plant species are adapted to a temperate climate with pronounced continental accents, dry summers, cold winters and lack of humidity. In this area there are both Eastern European floral elements and Mediterranean and Balkan flora.

The aim of research was the identification, characterization and collection of potentially ornamental taxa present in the spontaneous flora of Dobrogea representative areas, which, administratively belong to Constanta. The literature contains numerous studies on the flora of Pontic-Danubian area (Chelariu Elena-Liliana et al., 2010), and aspects of biology, ecology, reproduction, etc. of the species and genera presented in this paper (Al-Qudah Tamara et al., 2011 Mirela Ardelean et al., 2009; Draghia Lucia et al., 2011 Y. Li, 2008; Nadjafia F. et al., 2006) .

MATERIAL AND METHOD

In year 2010, during the vegetation period (May – October) six taxa from two representative habitats in Constanta county have been identified, studied and collected:

- Cogealac: *Statice latifolia* Sm. (sin. *Limonium latifolium* (Sm.) O. Kuntze);
- Cheia (Cheile Dobrogei): *Jasminum fruticans* L.; *Sedum maximum* (L.) Suter (sin. *S. telephium* ssp. *maximum* (L.) Krock., *S. stepposum* Boiss.), *Sedum urvillei* DC. (sin. *Sedum sartorianum* Boiss.) ssp. *hillebrandtii* (Fenzl) Soó, *Sempervivum ruthenicum* Schnittsp. et C.B. Lehm., *Teucrium polium* subsp. *capitatum* (L.) Arcangeli.

The taxonomic nomenclature is that adopted by V. Ciocârlan and Flora Europaea (Tutin TG, colab, (eds.) (1964 – 1980 & 1993). The sozologic classification of the taxa has been made according to the *Critical List of Vascular Plants of Romania* (Oprea A., 2005).

The study method consisted of observations regarding the main morphological and ecological characteristics of the taxa, specifying at the same time their natural spreading areas in Romania (Ciocârlan V., 2000; Oprea A., 2005).

The biological material harvested for the set up of the “ex situ” cultures in the experimental field of the Floriculture Department from UASVM Iași has consisted of seeds, fruit, sapling, full flowers, depending on the biological particularities of the plants of the sozologic category some in which some of the taxa are classified.

RESULTS AND DISCUSSIONS

The studies regarding the cultivation potential with ornamental purpose of some spontaneous species from Romanian flora, have been carried out in the South-Eastern part of the country, namely in Constanta county.

In the following, the taxa collected in year 2010 are presented with their main biological, morphological and ecological traits, the habitat, the place where the harvesting was carried out and the ornamental interest traits.

1. *Jasminum fruticans* L., Oleaceae family

The species has a Mediterranean origin. In Romania it is considered to be a rare sub-threatened species (NT) that can be found in the barren areas of Dobrogea. The plant uses skeletal, stony and calcareous soils well.

It is a scrub species (fig. 1), 1,5-3 m high, with succeeding leaves, clovered, persistent and yellow flowers (it flowers in May-June). The fruit are bacca, black when mature.

The entire plant presents a high ornamental interest (leaves, flowers, shrub) and can be used in groups or solitary specimens in the landscaping of gardens or as plant in decorative vases.

The species has been identified in Cheile Dobrogei, and the harvested biological material for the setup of the experimental cultures comprised sprouts for slipping and fruit.

2. *Sedum maximum* (L.) Suter (sin. *S. telephium* ssp. *maximum* (L.) Krock., *S. stepposum* Boiss.), Crassulaceae family

It is a sub-thermofil species, xero-mezoxerofite, frequently met in Romania, on cliffs, rock slides, soils that are low in humus, from the steppe area until the level of the spruce. The plant has an erect stem, ramified in the upper part, 20-50 cm high, with fleshy, sessile, oval leaves, light green-ash in color, located opposite one from the other on the stem and in rosette at the base. The flowers are white-green or white-yellow and flower from July until October (fig. 2).

The plant raises ornamental interest due to the flowers and leaves, being recommended for stone arrangements, edging, decorative vases, green roofs and even for the cut flowers. In using the plant we must take into consideration of fact that it can be considered a pioneer species for rocky soils.

The species has been identified in the Cheile Dobrogei area, and for the setup of the experimental cultures, seeds and whole plants have been harvested.



Fig. 1 - *Jasminum fruticans* (original)



Fig. 2 - *Sedum maximum*

3. *Sedum urvillei* DC. (sin. *Sedum sartorianum* Boiss.) ssp. *hillebrandtii* (Fenzl) Soó, Crassulaceae family

It is an evergreen species of Panonian -Pontic origin. In Romania it is found sporadically in Constanța, Tulcea, Timiș and Mehedinți counties and it uses sandy soils and grovels well, being an oligotroph, xerophytes, sub-thermophile plant.

Its stems are 5-15 cm high and the leaves are succulent, cylindrical or semi-cylindrical. The inferior part of the stem is covered with dead leaves that remain persistent. The sterile sprouts, usually crawling, can also be recognized by their leaves that are thicker. The flowers are simple, yellow and they flower in May-July (fig. 3).

The plant insures a permanent décor through its leaves, and through its flowers during spring. It can be used ornamentally for cliffs, decorative vases and edging.

It has been identified in Cheile Dobrogei and whole plants and sprouts were selected for slipping.

4. *Sempervivum ruthenicum* Schnittsp. et C.B. Lehm., Crassulaceae. family

The species is camefit everlasting, with the flower stem 15-30 cm high. It has Pontic origin and in Romania it is sporadically found in Dobrogea and Moldova, in the oak forest areas until the level of the holm. The sozologic category of the species is that of rare, sub-threatened species (NT).

The plants are characterized by a short stem with succulent leaves laid out in dense rosettes (fig. 4). The flower stem is glandulous, 15-25 cm high and the flowers are star-shaped and yellow and flower in July- August.

The ornamental value is given by the everlasting green leaves laid out in rosettes and flowers.

The species can be recommended for the use in landscaping setups like rocks, decorative vases and edging. It can also be used as flower pot plant. It is an excellent plant for green roofs and the covering of inclines, being a pioneer species in rocks areas, with high soil fixing ability, due to its radicular system and dense rosettes.

The plant was identified in Cheile Dobrogei and seeds and leaves rosettes have been harvested for slipping.



Fig. 3 - *Sedum urvillei* ssp. *hillebrandtii*



Fig. 4 - *Sempervivum ruthenicum* (original)

**5. *Statice latifolia* Sm. (syn. *Limonium latifolium* (Sm.) O. Kuntze),
Plumbaginaceae family**

It is a everlasting hemicriptophite species of Pontic-Balkan origin. In Romania it is a rare species, found on the dry plains from the steppe area.

The stem is hairy (at least in its upper part) and can be 50-80 cm high. The leaves are large, elliptically spatulated and pubescent along the median nerve. The flowers, grouped in uni-flower spikes, are completely hyaline bractee, blue-violet in color (fig. 5). Flowering takes place during the summer (July – September).

The species offers ornamental interest due to its violet flowers, with the possibility of being used as cut, dried flower (everlasting flower). In landscaping setups it is recommended for massive groups.

The biological material, whole plants and seeds has been harvested from Cogealac.

6. *Teucrium polium* subsp. *capitatum* (L.) Arcangeli, Lamiaceae family

It is a sub-shrub of Central European – Sub-Mediterranean region, in Romania being a sporadic species found on the grass land on the calcareous rocks from the steppe area until the level of the beech.

Its height is 10-35 cm and the stem: tomentous, bushy, ascendant, very ramified at the base (fig. 6). The leaves are narrow and oblong – narrow obovate, crenated, ash green, scented and the flowers are white, grouped in thick inflorescences, dense, capitulform, and they flower in summer (July- September).

The plant decorates through its flowers and leaves, and seed cover, so that it offers an ornamental interest for the entire duration of vegetation (May – October). Moreover the plant emits a pleasant, specific scent. It can be recommended for edging, decorative vases, color spots in setups with rocks and to cover inclines or walls. It can also be used as edible plant (to scent cheeses, salads, drinks) and medicinal plant (with hypoglycemic effect).

The species has been identified in the Cheile Dobrogei area, and for the setup of experimental cultures, seeds have been harvested.



Fig. 5 - *Statice latifolia*



**Fig. 6 - *Teucrium polium* subsp. *Capitatum*
(original)**

CONCLUSIONS

1. The spontaneous flora of Dobrogea is a rich source of germoplasm for the ornamental plant sort.

2. The specific eco - pedological conditions of the natural habitats where the studied taxa have been identified, offer the plant drought-resistance and the possibility of their being cultivated on barren soils, poor in nutritive elements.

3. The ornamental importance of some taxa is amplified by the permanent decor that the everlasting insures (*Sedum urvillei* ssp. *hillebrandtii*, *Sempervivum ruthenicum*).

Acknowledgments. This work was supported by CNCSIS – UEFISCU, project number PNII – IDEI 1233/2008.

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