

# STUDIES REGARDING THE BEHAVIOR OF SAME WILD ORNAMENTAL SPECIES INTRODUCED IN CULTURE IN PEDOCLIMATIC CONDITIONS FROM THE IAȘI AREA

## STUDII PRIVIND COMPORTAREA UNOR SPECII SĂLBATICE ORNAMENTALE INTRODUSE ÎNCULTURĂ ÎN CONDIȚIILE PEDOCLIMATICE DIN ZONA IAȘI

ZAHARIA Alina<sup>1</sup>, DRAGHIA Lucia<sup>1</sup>,  
CÂRSTEA Oana Mariana<sup>1</sup>, CHELARIU Elena Liliana<sup>1</sup>  
e-mail: alina\_catri@yahoo.com

**Abstract.** *Many species of wild plants presents an important decorative value but still undiscovered. The paper presents some aspects related to the introduction in the culture of some species with ornamental characters from the spontaneous flora of Romania (Campanula romanica Săvul., Globularia punctata Lapeyr. and Jasminum fruticans L.), referring to the manner of adaptability in pedoclimatic conditions from the Iași area. The study pursued the development and preservation of ornamental morphological characters of the species. Observations have shown that all species studied indicated a good adaptability to pedoclimatic conditions from this area, by preserving ornamental features.*

**Key words:** ornamental value, spontaneous flora, Campanula, Globularia, Jasminum.

**Rezumat.** *Multe din speciile de plante sălbatice prezintă o importantă valoare decorativă, dar încă nevalorificată. Lucrarea prezintă unele aspecte legate de introducerea în cultură a unor specii cu caractere ornamentale din flora spontană a României (Campanula romanica Săvul., Globularia punctata Lapeyr. și Jasminum fruticans L.), cu referire la modul de adaptabilitate în condițiile pedoclimatice din zona Iași. Studiul a urmărit evoluția și păstrarea caracterelor morfologice ornamentale ale speciilor. Observațiile efectuate au arătat că toate speciile studiate au prezentat o bună adaptabilitate la condițiile pedoclimatice din această zonă, prin păstrarea însușirilor ornamentale.*

**Cuvinte cheie:** valoare ornamentală, flora spontană, Campanula globularia, Jasminum.

### INTRODUCTION

Spontaneous flora of Romania is known for its richness and diversity of species that may find use in various fields, including decorative purposes, but many of these plants are not known or are not used as ornamentals. The literature found numerous studies on the taking advantage of wild plants from different areas and the possibility of their introduction in culture.

---

<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine Iași, Romania

This paper examines the capacity of multiplication and adaptation of wild plants growing in Dobrogea area in southeastern Romania and characterized by specific environmental and soil conditions. The Dobrogea flora also excels in taxons protected by law or the Red Lists, with the status of rare, vulnerable, endangered species etc. Studies on the value of ornamental flora Romania have been made by the team from UASVM Iasi (Chelariu et al., 2010, 2011; Draghia et al, 2010, 2011). *Campanula romanica* Săvul., *Globularia punctata* Lapeyr. and *Jasminum fruticans* L. are three of the species identified in this area, namely in the counties of Tulcea and Constanta.

*Campanula romanica* Săvul. (*C. rotundifolia* L. subsp. *romanica* (Săvul.) Hayek) (Dobrogea's bell), Campanulaceae, is an endemic plant discovered by the scientist Traian Savulescu in Twentieth century, in a very restricted area of Dobrogea (reported sporadically in Braila, Tulcea and Constanta counties) and species classified as vulnerable (VU) (Oprea, 2005). It is considered a symbol of Macin Mountains of Dobrogea, being found on rocky land in calcareous rocks cracks or on gravels (Ciocârlan, 2000).

*Globularia punctata* Lapeyr. (*G. bisnagarica* L.) - globularia - (Globulariaceae) originated in central Europe and sub-Mediterranean area, in Romania being found sporadically on dry and rocky land from Transylvania, Muntenia, Dobrogea. According to IUCN it belongs to the rare species, underendangered (NT) (Oprea, 2005 Ciocârlan, 2000).

*Jasminum fruticans* L. (jasmin), Oleaceae, is the species of Mediterranean origin, rare in the Romania flora, reported only in a few areas of Constanta and Tulcea counties on skeletal, rocky, limestoned soils. It is classified in zoological group of rare species, underendangered (NT) (Oprea, 2005; Ciocârlan, 2000).

The main aim of the research was to follow the evolution of adaptation to soil-climatic conditions of the Iași area, and maintaining decorative performance of these species, so that it can be developed efficient technologies of breeding, establishing and crop management under "ex situ" conditions.

## MATERIAL AND METHOD

The experiment was conducted in the field of discipline of Floriculture, within University of Agricultural Sciences and Veterinary Medicine Iași, Romania.

As a breeding material for establishing experimental variants it were used seeds harvested from four plant species of wild flora identified in Tulcea (at Babadag and Turcoaia) and Constanța (Cheile Dobrogei) whose ornamental characteristics are provided by flowers, leaves, fruits and standing:

- *Campanula romanica* Săvul. (fig. 1.a) grows as a shrub with many stems, straight or lying at the base, whose height does not exceed 25-30cm, and the leaves are linear lanceolated. It is very decorative through many blue flowers, campanulated, with a length of approx. 1 cm (flowering period in June-August). Seeds were harvested from plants identified in Cheile Dobrogei (Constanta county).

- *Globularia punctata* Lapeyr. (fig. 1.b) is an herbaceous perennial plant with a height of approx. 15 cm, with based leaves arranged in rosette, and with simple, alternate leaves on stems, clustered flowers in globular flower heads, blue coloured (with flowering in May to June) and the fruit being a achene surrounded by persistent

calyx. Plants that were harvested seeds were found in the Babadag woods (Tulcea county).

- *Jasminum fruticans* L. (fig. 1.c) is a small shrub with heights of approx. 1.5 – 2 m. Stems are branched and the leaves are persistent, trifoliate, leaflets are leathery. Decorate both by the standing and by the tiny yellow flowers arranged in racemes and fruits (berries) blackish. It blooms in early summer (May-July). Plants that were harvested fruits were identified in Cheile Dobrogei (Constanta county).

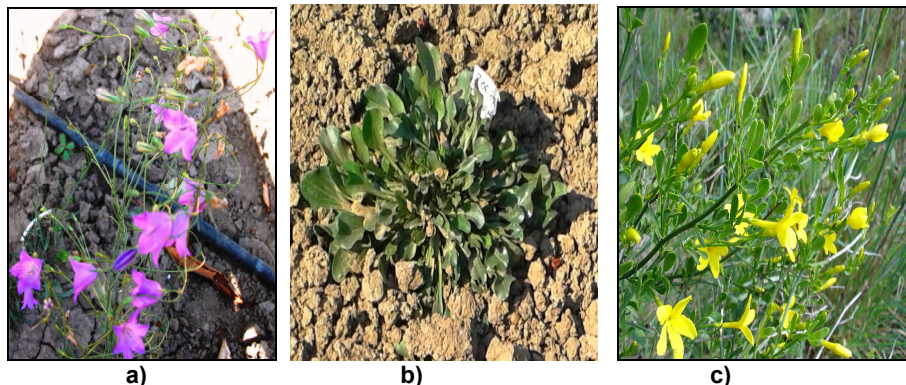


Fig. 1 - a) *Campanula romanica* Săvul. (original); b) *Globularia punctata* Lapeyr. (original); c) *Jasminum fruticans* L. (<http://ecomuntiimacinului>.)

Establishing experiments was carried out in spring 2012 and observations and determinations were made until the end of the growing season of plants (september 2012). Dates regarding establishing experimental cultures are presented in table 1.

Table 1

Dates regarding establishing experimental cultures

Species	Sowing date	Sprout date	Transplanting date	Field planting data
<i>Campanula romanica</i>	1.02.2012	13.02.2012	15.05.2012	31.05.2012
<i>Globularia punctata</i>	1.02.2012	9.02.2012	15.05.2012	31.05.2012
<i>Jasminum fruticans</i>	5.04.2012	10.05.2012	-	21.06.2012

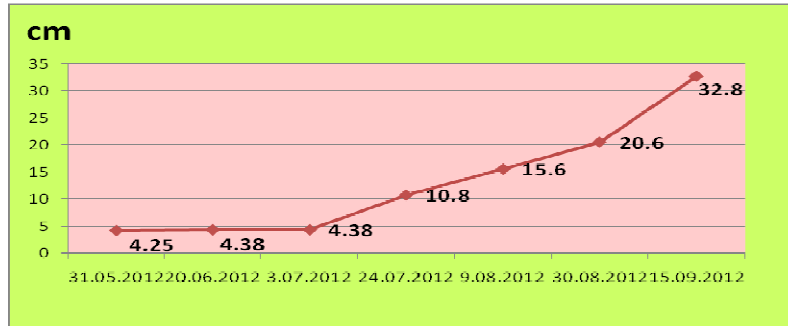
It was sown in the greenhouse in cellular blades, in a substrate made of peat and garden soil in a ratio by volume of 1:1 for *Campanula romanica* and *Globularia punctata* and in a proportion of 1:3 for *Jasminum fruticans*. There were no special treatments applied for the seeds, except for *Jasminum fruticans* seeds that were stratified in winter on field (January-March). The seeds that were not stratified have not germinated. It was followed the dynamics of plant growth in height, diameter of the bush, the number of leaves and branches.

## RESULTS AND DISCUSSIONS

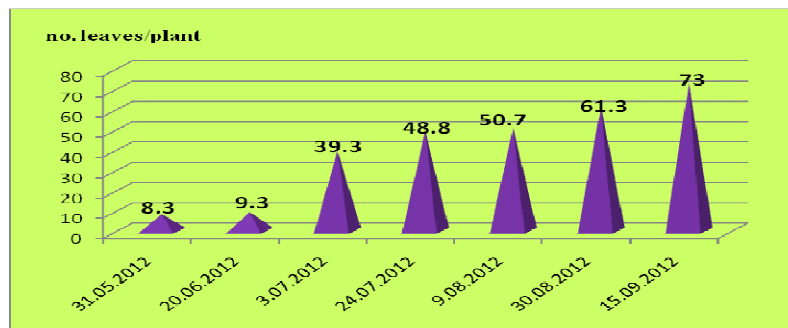
Aspects regarding seed germination highlights a number of differences between species, respectively the highest seed germination degree was recorded by species *Globularia punctata* with 87%, followed by the seeds of *Campanula romanica* species with 28% and *Jasminum fruticans* L. with 16.6%. Germination

period ranged between 9 and 37 days (9 days for *Globularia punctata*, 13 days for *Campanula romanica* and 37 days for *Jasminum fruticans*).

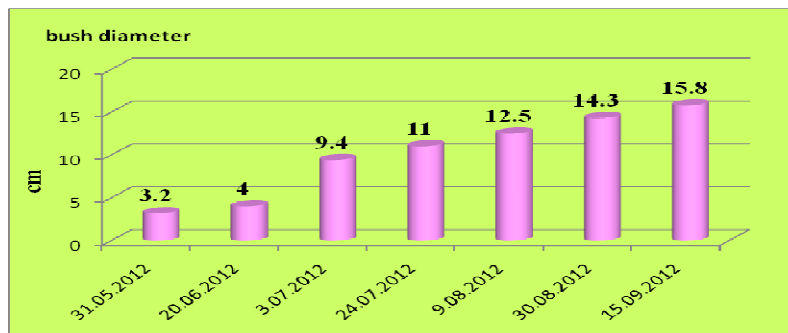
When planting in the field, plants of *Campanula romanica* had average height of 4.25 cm, 8.3 leaves / plant and bush diameter of approx. 3 cm. Maximum values recorded at the end of the growing season showed an average height of 32.8 cm, a diameter of 15.8 cm and 73 bush leaves / plant (fig. 2, 3, 4).



**Fig. 2 -** The dynamics of increase in height for the plants of *Campanula romanica*



**Fig. 3 -** The dynamics of increase in number of leaves / plant at *Campanula romanica*



**Fig. 4 -** The dynamics of plant growth in diameter for *Campanula romanica*

*Globularia punctata* plants recorded a lower growth in height (up to 9 inches), but formed rosettes with more than 28 leaves and a diameter of 12 cm (fig. 5, 6, 7).

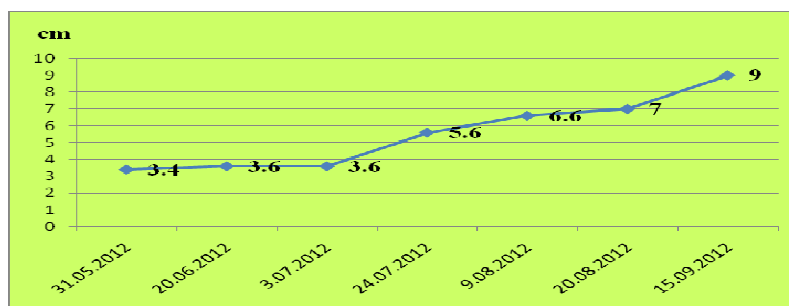


Fig. 5 - The dynamics of increase in plant height for *Globularia punctata*

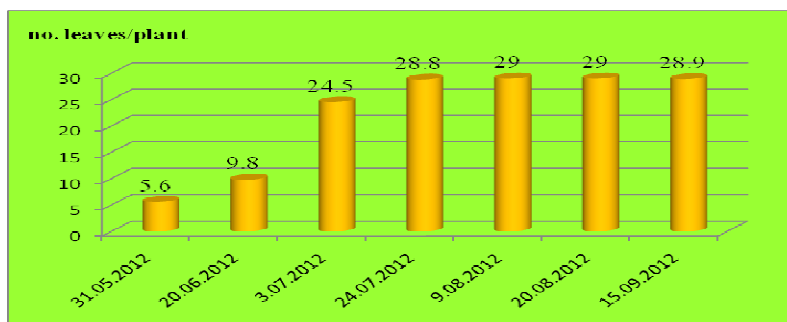


Fig. 6 - The dynamics of increase in number of leaves/plant for *Globularia punctata*

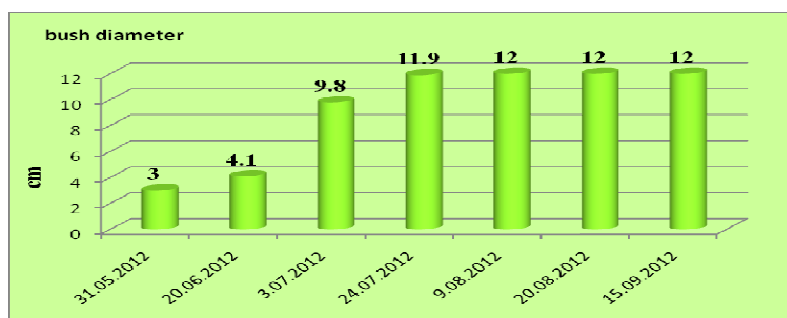


Fig. 7 - Dynamics of plant growth in diameter for *Globularia punctata*

In the first year the maximum height of the plants of *Jasminum fruticans* was 23.5 cm (fig. 8), and the number of branches of the plants ranged from 3 to 5.5.

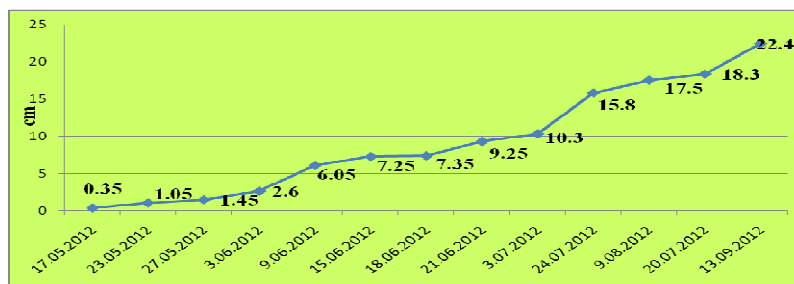


Fig. 8 - The dynamics of increase in plant height for *Jasminum fruticans*

It was also found that from the three species studied only *Campanula romanica* flourished in the first year. Plants formed flowering buds in late July, and after 17 days have blossomed, registering a total of 12 flowers/branch. The other two species recorded only vegetative growth.

## CONCLUSIONS

1. Seed germination in three species „ex situ” under study was within the range from 16.6 to 87%, with maximum values for *Globularia punctata* seeds and *Jasminum fruticans* seeds.

2. In the first year of vegetation had flourished only plants of *Campanula romanica* L., those of *Jasminum fruticans* L. and *Globularia punctata* forming only globular rosette of leaves recording only vegetative growth.

3. From the analysis of growth in height, of leaves number formed and of bush diameter, it was found that the species analyzed indicated a good adaptability to climatic conditions in the Iași area.

*Acknowledgments:* This study was supported from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/ CPP107/DMI1/5/S/77222.

## REFERENCES

1. Chelariu Elena-Liliana, Draghia Lucia, Sirbu C., Brânză Maria, Cristina Sandu Miculschi, 2010 – *Evaluation of ornamental features at some species from spontaneous flora of Dobrogea*. Lucrări şt. USAMV Iaşi, seria Horticultură, Vol. 53, ISSN 1454-7376, p. 353-358
2. Chelariu Elena Liliana, Draghia Lucia, 2011 - *Species from spontaneous flora of Tulcea county, with ornamental value*. Lucrări ştiinţifice USAMV Iaşi, seria Horticultură, vol 54, nr.2, ISSN 1454-7376, p. 251-256
3. Ciocârlan V., 2000 - *Flora ilustrată a României. Pteridophyta et Spermatophyta*. 1138 pag. Editura. Ceres. Bucureşti.
4. Draghia L., Chelariu E., Sirbu C., 2010 - *The behavior in crop of some species with ornamental features from spontaneous flora of Romania*. Lucrări ştiinţifice USAMV Iaşi. Seria horticultură. Vol.53, ISSN 1454-7376, p. 259-264
5. Draghia Lucia, Chelariu Elena Liliana, Zaharia Alina, 2011 - *Aspects Regarding the Production of Planting Material at Some Ornamental Species from Spontaneous Flora*, Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Horticulture, p.332-337.
6. Oprea A., 2005 – *Lista critică a plantelor vasculare din România*. Editura Universităţii „Al. Ioan Cuza” Iaşi.