STUDIES CONCERNING THE IMPORTANCE OF THE FLORIFEROUS SPECIES FOR PARKS AND GARDENS

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Abstract
The study aims the evaluation and scientific documentation for some floral species of spontaneous flora for understanding the ecological requirements and decorative and terapeutical characteristics; choose the most effective and rapid methods for obtaining planting material, to preserve natural biodiversity and their propagation for ornamental and medicinal purposes. The analysed species belonged to Ranunculaceae family (Hepatica transsilvanica Fuss), Iridaceae family (Iris aphylla L, Crocus vernus L), Caryophyllaceae family (Dianthus spiculifollius) and Asteraceae family (Arnica montana L.)

Keywords: endemic, decorativ , endangered, landscape design, ornamental potential

1. INTRODUCTION

Plants flower, spread everywhere, in all climates and altitudes accessible to all vegetation, have been always a splendid natural smile, impressed by the abundant of forms and colors. Their growth under natural conditions make them to acquire a very special shine. (Selaru, 2007).
The humans delicate to the beauty of plants found in nature, made in ancient times they are used by man for decoration or medicinal (Iliescu, 2003).
Great variety of spontaneous flora assortment offered by Arges county gave me a choice of six flower species for their propagation: *Hepatica transsilvanica* Fuss., *Iris aphylla* L., *Lilium martagon* L., *Dianthus spiculifolius, Crocus vernus* L., *Arnica montana* L. (figures 1-6). Join by landscape qualities (size plants, color and appearance of flowers, foliage, habitus) and their medicinal, we took into consideration other aspects such as timing and duration of flowering, the coverage of soil, duration and characteristics of the biological cycle, behavior ecological (adaptability to climatic conditions and air pollution, resistance to disease, pests).

2. MATERIAL AND METHOD

The six flower species (*Hepatica transsilvanica* Fuss., *Iris aphylla* L., *Lilium martagon* L., *Dianthus spiculifolius*, *Crocus vernus* L., *Arnica montana* L.) were identified in their natural habitat: small keys of Dambovita (*Hepatica transsilvanica* Fuss.), the mountain Piatra Craiului Dâmbovicioara (*Lilium martagon* L.) and Ghitu Mountains: Key Arges (*Iris aphylla* L.) Given the limited capacity of these species propagation by conventional techniques, it requires the input of *in vitro* propagation, in order to obtain seedlings quickly, thus removing the inconvenience generated by classical breeding. The main features biological, morphological and ecological species studied which were the basis for their selection were as follows:

1.*Lilium martagon L.* (Lily of the forest) - fam. *Liliaceae*

Origin and geographic distribution: Spread in Europe, Asia. Found in deciduous forests, the meadows and rocky places, from lowlands to mountainous regions, most counties within the country; genetically 2n = 24. Species protected by low.

Phytocenology: Car. Fagetalia, Betulo-Adenostyletea.

Description: Herbaceous plant, perennial, geophyte. Bulb ovoid, composed of numerous fleshy scales. Since the bulb is about many roots, some of them often contractile. Other thin roots are formed on the stem above the bulb. Stem straight, 60-80 cm high. At the bottom and top nude, the rest with short hairs, sometimes overturned. Leaves lanceolate or oblong-lanceolate, alternate

to the top, the middle stem whorl. Reddish or purplish pink flowers, dotted with dark purple, nutante with flavor, grouped in a terminal raceme, perigon, six tepale curved outward, attenuated at the base, with foveolă nectareous, more or less elongated; six stamens with filaments 20-30 mm long, red linear anthers terminated; carpel of elongated ovary, style and stigma capital, three-lobed. Flowering in May-June. Oval fruit is a capsule with 6 edges. Seeds compressed, light brown, with rough surface (Parvu, 2002).

Figure 1. Lilium martagon L. (original)

Ecology: Euriterm species, mesophilic, slightly acid-neutrophil. Relatively large heat requirements. Vegetate in the soil back to wet-damp, with pH ranging from 6.0 to 7.2.
This species is used as medicinal plant in Mediterranean area. It represents an important resource both for phytochemical and pharmacological research (Redžić 2010). Bulbs of its closest species *Lilium martagon* L. posses cardiotonic properties and are used in the treatment of dysmenorrhoea (Khare 2007), liver diseases in both humans and animals in Northern Albania (Pieroni et al. 2005). Bulbs of *Lilium martagon* L. are used externaly for ulcers (Khare 2007).

2. *Iris aphylla* L. (Iris) - fam. ***Iridaceae***

Origin and geographic distribution: perennial species, meadows and shrubs vegetate, in rocky and sunny places from the hill region to subalpin.

Description: Geophyte species, xeromezophile, euriterm. It flowers in May-June, often the second time in August-September. Species with long rhizome of 18-22 mm diameter and 20-30 cm tall stems. Leaves curved, acuminate, 2-3 cm wide, with 5-6 ± elongated ribs. Flowers 2-4, dark purple, often tinted purple, 4-5 mm long and 18-22 mm wide. Perigonal lacinia, ovate elongated.

Figure 2. Iris aphylla L. , fam. Iridaceae (original)

Threedged ovary, deeply 3-streaked with rust grains, elongated ovoid, 4-5 mm long and 3 mm wide.
Multiply vegetatively by rhizomes, where leaves forming rosettes with high density and by sexual reproduction. Pollination is entomophyle, sometimes male organs develop before female organs. Fruit and seeds spread carried by the wind.

3. *Hepatica transsilvanica* Fuss. (Cross brave) - **fam. *Ranunculaceae***

Origin and geographic distribution: rare plant, grows only in the Carpathian Mountains, in shady areas, in forests and shrubs, as an endemic species. For this reason, its popular name Cross of Brave and is declared a nature monument, protected by law (Parvu, 2002).

Description: the plant has a long rhizome, horizontal or oblique, the extremities of which are grouped, leaves and flowers each year. Trilobite double leaves are long and pubescent petiole. Flowers appear in April-May, are 3-4 cm. diameter, actinomorf, blue with large petal (usually 10) and hairy peduncle.

Fruits are pubescent achenes.This species has a particular aesthetic and ecological value, being, with its beauty, a true delight for fans of hiking, when they come across their way.

Figure 3. Hepatica transsilvanica Fuss (original)

4**. *Dianthus spiculifollius*** (Dianthus - White - the – rock) - **fam. *Caryophyllaceae***

Origin and geographic distribution: increase on the limestone rocks, often in subalpine and montane floor. In Romania we find in the Carpathian mountains as endemic species.

Description: has many delicate stems, forming thick clumps. Leaves narrow and sharp as a blade of grass, are arranged in pairs, more clutter to the strain. Flowers, one on top of stems, milky-white or pale pink, very fragrant, with a calyx oblong and narrow, with two to four scales and five petals deep divisions chipped numerous thin, smooth, rolled down. It flowers in July-August.

Figure 4. Dianthus spiculifollius (original)

5. *Crocus vernus* (L.) Hill (Spring Crocus) - **fam. Iridaceae**
Origin and geographic distribution: spread in Europe, seen through the glades, meadows, pastures, thickets, forest clearings, from lowland to subalpine zone, common in evergreen oak floor to floor spruce.
Phytocenology: Polygonium Triseto-framed, Potentillo-Nardion, Fagion, Piceion.
Description: herbaceous plant, perennial, geophyte, 10-20 high (25 cm). Root beam, bulbotuber covered with membranous tunics, slim. Leaves linear - lanceolate, median rib on the underside with white. Flowers lilac-purple, soiled; perigon tube 12 cm long with 6 concave lacinia, oblong-obovate; three stamens; gineceu the ovary inferior, style long, yellow. Flowering in March-April. Fruit, capsules with three places, polisperme. Seeds globular.
Ecology: hechistoterm species, mesophylic, acidophylous. Adapted to live at very low temperatures. Announced the spring with lilac flowers wich appear before melting snow. Vegetate on wet soils with pH of 5.0 to 6.8

Figure 5. Crocus vernus (L.) Hill (original)

6. Arnica montana L. (arnica) - **fam. Asteraceae**
Origin and geographic distribution: vegetates in Europe and Siberia. In Romania is found in all the Carpathian through wet meadows and pastures, often through meadows and bushes to subalpine region, rare in the alpine area.
Phytocenology: Triseto-framed plant association Polygonion bistortae.
Description: herbaceous plant, perennial, with vegetative hibernating organs, medicinal. Rhizome cylindrical, thick, fibrous roots from the start. Stem erect, cylindrical, simple, rarely branched, with short hairs, complete with a blossom. Basal leaves ovate or elliptic, sessile, glabra or stiff hairs arranged in a rosette; leaves of small stems, opposite. Yellow flowers arranged in calatidiu, the marginal ligulate, and tubular center. Fruits hairy achenes. The flowers are harvested in June-July, early flowering; the inflorescences cut and dry in the shade.
Phytotherapy: the plants active principles are antiseptic, antiinflammatory, antisclerotic, choleretic, collagen, diuretic, hypotensive.
Ecology: microtermal to mesothermal species, mesophilic acid-neutrophilia. Is adapted to boreal cold or cool and wet climate. Vegetate in areas with annual average temperatures between 2 and 5 ^{0}C. Increase on specific soil moist – damp with pH between 5.0 and 7.2

Figure 6. Arnica montana L.(original)

3. CONCLUSIONS AND RECOMMENDATIONS

- decorative qualities, ecological features and medicinal qualities of these species recommend them for use in: landscaping, floral art, for plant protection.
- establishment of in vitro propagation biotechnologies of these species in order to obtain fast seedlings for restocking subalpine areas and extending them in culture as ornamental species for gardens and as herbs.

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