

PRELIMINARY DATA ON THE PRESERVATION STATUS OF *RUSCUS ACULEATUS* L. SPECIES WITHIN THE TĂȘAD NATURA 2000 SITE

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INTRODUCTION

Ruscus aculeatus L. (known as the butcher's broom) is a significant medicinal species. As it is widely used in alimentary or in traditional medicine, it became more and more rare in some countries (such as France). This species is mainly used for its medicinal purposes in our country, and it turned more valuable with every year passing by. For this particular reason, the species was declared a natural monument, as it is stated in many botanical treatises (Săvulescu, 1966; Ciocîrlan, 1990; Sârbu et al., 2013).

The systematic classification of the *Ruscus aculeatus* L. species is:

Regnum: *Plantae*

Phylum: *Angiospermae*

Class: *Monocotyledonatae*

Order: *Asparagales*

Family: *Asparagaceae*

Genus: *Ruscus*

Species: *Ruscus aculeatus* L.

Folk name: thorn.

Ruscus aculeatus is an herb commonly referred to as butcher's broom due to its hard roots and (supposed) antibacterial properties being traditionally used to clean the cutting boards of butchers. It also holds traditional medicinal uses, which mainly focus around improving blood flow in the veins by contracting them. The uses associated with this 'venotropic' action include reducing leg swelling and edema, treating chronic venous insufficiency, and treating or preventing hemorrhoids. The plant itself contains a variety of saponin structures, of which the active ones are not fully elucidated but are thought to be a collection of similar saponins known as the ruscogenins and neoruscogenins. These are present in high levels in the plant's vertical root (rhizome) and tend to be standardized for supplementation. In regards to the plant's actions, it seems to increase the activity of noradrenaline at the level of the synapse where it contacts veins via acting through its alpha receptors.

Ruscus aculeatus is a low evergreen Eurasian shrub, with flat shoots known as phylloclades that give the appearance of stiff, spine - tipped leaves. Repent rhizome shrub,

rigid stem, 20 - 50 (70) cm in height, forming a pyramidal-ovate shaped bush.

Small greenish flowers appear in spring, and are borne singly in the centre of the phylloclades. The female flowers are followed by a red berry, and the seeds are bird -distributed, but the plant also spreads vegetatively by means of rhizomes. *Ruscus aculeatus* occurs in woodlands and hedgerows, where it is tolerant of deep shade, and also on coastal cliffs. It is also widely planted in gardens, and has spread as a garden escapee in many areas outside its native range.

In *Ruscus* the ultimate phylloclade is terminal. The development of the phylloclades is affected by the presence and the position of the inflorescence(s). There is 1 (rarely 2) inflorescence on each phylloclade. It lies centrally on the surface and is supplied by a vein which does not continue beyond it. In *Ruscus* it is always subtended by a primary bract, the margins of which are fused at the base of the phylloclade. Short raceme inflorescence, holding 1 - 2 (5) flowers, inserted on the upper side of the phylloclade. The flowers are small and articulated with the pedicel at or just below the base of the perianth.

Fruit size of a small cherry, color red (Săvulescu 1966).

Ecology: it appears in forests, woodlands, hedgerows, meadows, coastal cliffs (Săvulescu, 1966).

Spread: Vamanu Mountains, Bilbor village (Toplița region); Șimleu hill, Băile 1 Mai, Hidișelul de Sus (Oradea region); on the hills inbetween the Șuncuiș large valley and the Urman valley (Beiuș region); in Moneasa, along the Megieș valley, and also in Piatra Mică, Sebiș on the Pilișca hill, Dezna on the Corbului hill, Mustești under the Drocea hill (Gurahonț region); Cerna valley, Băile Herculane, Mehadia on the Străjuț mountain, Danube valley in the Cazane place (Orșova region); Hinova on the Stârmina hill, Valea Hoțului (Turnu Severin region); Bucovăț forest, Leamna de Jos, Palilula, Podari (Craiova region); Gancioava (Segarcea region); Bechet (Corabia region); Rastu (Băilești area); Ponoare, Cloșani (Baia de Aramă zone); Vlădaia – inside the Bungetului forest (Vânju Mare region); Comana, located in Padina lui Vasile, and at the

Fântâna cu Nuc, Călugăreni (in the Crucea de Piatră forest and also the Mihai Bravu forest) (Giurgiu region); Niculițel – inside the forest (Tulcea region); Mangalia, above the thermal spa; Grozești, Slănic (Tg. Ocna region).

The authors of the scientific volume □Flora and vegetation of Moldavia (România)□ (2006) acknowledged the presence of this species in the Nemira mountains as well (more precisely in Slănic and Oituz). Global spread: Europe, Northern Africa (Săvulescu, 1966).

MATERIAL AND METHODS

- Global Positioning System (GPS)
- Photo camera
- Maps containing the park's boundaries
- Field determinator and work sheets

In view of identifying our species of interest, *Ruscus aculeatus* L., several tracks were searched, within the characteristic habitats for this species, along which visual observations were made. By means of the GPS, the appropriate populations, regions and habitats were localized.

RESULTS AND DISCUSSIONS

Our species of interest was identified within the boundaries of the ROSCI0240 site (named Tășad) in two observation places (see photos 2 and 3). A total number of 11 individuals belonging to *Ruscus aculeatus* L. species were identified in this area (Photo 1).

Toponym: Natura 2000 ROSCI0240 Tășad site

Regarding the preservation status in România, we mention that this species is not IUCN evaluated. In our country, it is a part of the Annex 5 of the habitats Directive and of the Annex 5A of the Government Emergency Ordinance 57/2007 (altered and completed).

Identified habitat: Non-priority forest habitat according to the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Geographical coordinates: (46°57'5.50"N, 22° 8'46.41"E); (46°57'5.63"N, 22° 8'45.03"E).

The identified species and the abundance-dominance in the researched area are: *Carpinus betulus* 3, *Quercus robur* 2, *Fagus sylvatica* 1, *Robinia pseudoacacia* +, *Tilia tomentosa* +, *Acer campestre* +, *Acer platanoides* +, *Fraxinus excelsior* +, *Ruscus aculeatus* +, *Cornus mas* +, *Rubus hirtus* +, *Prunus avium* +, *Rosa canina* +, *Crataegus monogyna* +, *Hedera helix* +, *Clematis vitalba* +, *Carex pillosa* +, *Vinca minor* +, *Pulmonaria officinalis* +, *Stellaria holostea* +, *Carex sylvatica* +, *Geum urbanum* +, *Stachys sylvatica* +, *Scrophularia nodosa* +, *Symphytum tuberosum* +, *Pteridium aquilinum* +, *Urtica dioica* +.

As the preservation state is concerned, the individuals of *Ruscus aculeatus* L. identified in these observation points display a favourable status, in a fructification stage.

A major aspect that needs to be mentioned within this study concerns the threats and menaces for *Ruscus aculeatus* L. They are represented by: woodcutting, garbage, pasturage inside the forest (in some cases), mushroom picking.



Photo 1. The regions in which *Ruscus aculeatus* L. was detected within the Natura 2000 site (PO 47 Ra - PO 48 Ra)



Photo 2. *Ruscus aculeatus* L.
(observation point no. 47)



Photo 3. *Ruscus aculeatus* L.
(observation point no. 48)

The silvicultural activities represented by woodcutting, clearing up and replanting the trees may alter or even destroy some butcher's broom individuals.

Considering the recommendations on the regulations to reduce the impact on the researched species, they are as following: the harvesting together with the underground plant parts leads to the species' extinction in that peculiar place. These actions should be restricted, and some fines established in case of non-compliance. The plants' prelevation with the underground parts should have the curator's permission, and applied only to those plants within stable populations and a favourable preservation status. This latter data should be vulgarized by means of info boards, flyers, brochures, info campaigns, volunteers.

Locating the areas in which the proposed regulations will be enforced: info boards flyers, brochures, maps with touristic routes, info campaigns, volunteers:

- At the site's access areas
- Along the touristic routes
- In the specially arranged resting areas
- Within the info places, chalets or boarding houses.

CONCLUSIONS

Our species of interest was identified within the boundaries of the ROSCI0240 site (Tășad) in two observation places. A total number of 11 individuals belonging to *Ruscus aculeatus* L. species were identified in this area.

The preliminary observations made while searching the site's surface were accomplished in September 2015.

The preservation status of *Ruscus aculeatus* L. is a stable and favourable one.

The threats and menaces for *Ruscus aculeatus* L. are represented by: woodcutting, garbage, pasturage inside the forest (in some cases),

mushroom picking, plant picking in view of making herbariums.

The plants' prelevation with the underground parts should have the curator's permission, and applied only to those plants within stable populations and a favourable preservation status.

This latter data should be vulgarized by means of info boards, flyers, brochures, info campaigns, volunteers.

ABSTRACT

The preliminary observations made while searching the site's surface were accomplished in September 2015. During our field research, the species *Ruscus aculeatus* L. was identified within the boundaries of the Natura 2000 ROSCI0240 Tășad site and the 2.188 Tortorian limestones of the Tășad reserve.

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