

## DETERMINATION OF THE ACCURATE AREAL OF THE WILD POMEGRANATE IN ALBANIA

**Arselida Koçi**

Faculty of Natural Science, University “Luigj Gurakuqi”, Shkodër, Albania  
E mail: arselidam@yahoo.com

### Abstract

The wild pomegranate, *Punica granatum* L. is the specie which has a distribution in our country like widespread Mediteranean scrub vegetation. This distribution, with a full areal, includes the north-western zones of our country following the central and south-western zones with single species. The objective of this study was to give larger information on the areal where the wild pomegranate is distributed. To determinate the accurate borders of this areal, several stations were visited during the period between June 2012 and August 2013, in our north-western zones, where this specie has full areal. For this purpose GPS coordinates are used to show the exact observed areas. For the evaluation of the quantity of specie spreading, Abundance-Dominance coefficient is used. For the determination of relevé plot size we used “*Areal minimum*” method of Braun-Blanquette of the Zurich-Montpellier school and for choosing the relevé location we use “*Marshrut*” method. The determination of the species in the areal of *Punica granatum* was made according to Flora e Shqipërisë, Flora ekskursioniste e Shqipërisë. Selca is the northern extreme of areal. Western extremes of this areal are the costal zones, like Rrjoll (Velipoja) in Shkodra District, which are also the areas distributed in the lowest altitude. The southern extreme of the areal of *Punica granatum* is Milot in Kurbin District, which is easily distinguishable. Along the streets to the Razma touristic village was observed the single exemplar of wild pomegranate, mixed with oak vegetation, in the highest altitude (680 m). The eastern extremes of the areal of *Punica granatum* are very difficult to determine, because almost the entire areal of the wild pomegranate spreads in the north-south position, and almost in all cases the eastern extremes are mountain sides, like in Shkopet. This diversity in relief forms, consequently in all ecologic factors, reflects in the biodiversity of the species and in their density. Including all these factors, the accurate areal of the specie *Punica granatum* L. in our country is distributed between Selca and Milot, in the altitude 0-700 over the sea level.

**Keywords:** *wild pomegranate, accurate areal, distribution.*

### Introduction:

The wild pomegranate, *Punica granatum* L. is the specie which has a distribution in our country like a widespread Mediteranean scrub formation. This distribution, with a full areal, includes the north-western zones of our country following the central and south-western zones with single

species. The presence of wild pomegranate is evident along the south borders of Albania up to 40–50 km in the Ionian coast, Greece, and along the north borders in Montenegro for 50–60 km, however the plants density, in these two areas, is low (Xhuveli 2012). This continuous shrub vegetation is typically Mediterranean. The wild pomegranate is a shrub or small wood. It is broadleaf deciduous sub-Mediterranean specie geographically widespread (Anonymous 1990). This study came in additional from two previous studies over this areal; Koçi & Mersinllari 2012, Koçi 2013.

### **Aim of study:**

The aim of this study was to give larger information on the areal where the wild pomegranate is distributed in order to determine some characteristics of this vegetation in the future.

### **Research topics:**

The study of the areal of *Punica granatum* was based on the observations during the expeditions in several stations during the period between June 2012 and August 2013 in the north-western zones of our country, in order to show accurate information of the shrub vegetation. For this purpose GPS coordinates are used to show the exact observed areas.

### **Research questions:**

The questions of this research are based on the so far unknown data on the distribution of the wild pomegranate in our country.

### **Scientific methods:**

The evaluation of the quantity of specie spreading is done through Abundance-Dominance coefficient. For the determination of relevé plot size we used “*Areal minimum*” method of Braun-Blanquette of the Zurich-Montpellier school and for choosing the relevé location we use “*Marshrut*” method. The determination of the species in the areal of *Punica granatum* was made according to Flora e Shqipërisë, Flora ekskursioniste e Shqipërisë (Anonymous 1984-1996; Anonymous 1983).

Some observed areas of the areal are shown below.



Figure 1. Milot



Figure 2. Rrjoll, Velipoja

## Data analysis:

Table 1. Accurate borders of the areal of the wild pomegranate.

Areal borders	Northern extreme	Western extreme	Eastern extreme	Southern extreme	Maximum altitude extreme	Minimum altitude extreme
Zones (Villages)	Selca	Rrjoll-Velipoje	Shkopet	Milot	Razma	Rrjoll-Velipoje
Coordinates	42°30'N 19°35'E	41°86'N 19°47'E	41°69'N 19°82'E	41°39'N 19°42'E	41°17'N 19°31'E	41°86'N 19°47'E
Altitude (m)	387	18	54	58	680	18

## Findings:

Having traversed the territory of our country, in the areal of the wild pomegranate, from its North in Hot-Tamara-Selce; that is included in northern mountainous province, in which the altitude over the sea level varies 500-850m, we see large biodiversity in plants. This biodiversity is characterized by a mixture of the wild pomegranate with the juniper (*Juniperus communis* dhe *Juniperus oxicedrus*), especially in Hot with *Juniperus communis* ssp. *nana*; in Brigje te Hotit; in Leqe te Hotit with oak formation; (*Quercus cerris*, *Quercus trojana*, *Quercus robur*) in Tamara and Selce with *Carpinus orientalis*, *Fraxinus ornus*, *Quercus cerri* and *Ostrya carpinifolia*. Following this roadmap, from Hot to Tamara we see not only a big fragmentation of the areal, but increased density of the typical species although. This is mainly a result of the cold climate due to high altitude over the sea level. The fullest areal of the wild pomegranate is in Tamara village, where the pomegranate covers large surfaces of mountainsides and continues smaller surfaces in Selca village. In Leqe te Hotit we see large fragmentation in pomegranate areal and dominance of oak vegetation. Increasing further in the altitude over the sea level till 850 m and approaching the village of Tamara, the areal do not appear anymore. In is zone is domain mainly oak vegetation, characteristic of the altitude. Rare species appear also in this zone, like *Ostrya carpinifolia*. Descending to Tamara, the wild pomegranate appears again with a full areal and it continues till Selca. From Selca village to “Qafa e Bordolecit” zone the vegetation substitutes completely into forests with *Fagus sylvatica*.

The areal of *Punica granatum* has large distribution in the villages of Malesia e Madhe, Shkodra and Lezha. Western extremes of this areal are the costal zones, like Rrjoll (Velipoja) in the district of Shkodra. In this area values of A-D coefficient are very high for the specie of *Punica granatum*.

The eastern extremes of the areal of *Punica granatum* are very difficult to determine, because almost the entire areal of the wild pomegranate is spread in the north-south position, and

almost in all cases the eastern extremes are mountain sides, like in Leqe te Hotit where the areal of wild pomegranate was gradually substituted from the oak vegetation and like in Shkopet where the areal is gradually substituted from the evergreen Mediterranean shrubs like *Juniperus* sp. and *Buxus sempervirens* and increasing further in the altitude, the areal is interiorly substituted with the widespread areal of *Plantanus orientalis*.

The southern extreme of the areal of *Punica granatum* is Milot in the district of Kurbin, which is easily distinguishable.

We can find single species of the wild pomegranate commonly spread along the Western Lowland and through river valleys in the southern zones of our country.

Along the streets to the Razma touristic village was observed the single exemplar of wild pomegranate, mixed with oak vegetation, in the highest altitude (680 m). The table below shows the accurate borders of the areal and their characteristics.

## Conclusions

The areal of the wild pomegranate appears in diversity of relief forms. This diversity is shown in the distribution of the wild pomegranate in river valleys (Rosek, Zues and Oblika), in lake areas (Shiroka, Zogaj and Shkopet), in hillsides (Luarza, Vorfa, Zejmen, Pllana) and in mountainsides (Brigje and Leqe te Hotit, Podgora, Tamara and Selca). The diversity of the areal continues with the distribution in near the coastal areas (Rrjoll - Velipoja and Rrenci Mountain - Shengjin) where the altitude is very low and the vegetation is typically Mediterranean shrubs. This altitude increases till 650-700 m over the sea level in mountainsides in which the areal of the wild pomegranate mixes with the vegetation of oaks. This diversity in relief forms, consequently in all ecologic factors, reflects in the biodiversity of the species and in their density. Including all these factors, the accurate areal of the specie *Punica granatum* L. in our country is distributed between Selca and Milot, in the altitude 0-700 over the sea level.

## References

- Anonymous (1984-1996). *Flora of Albania*. Tirana. Vol 1, pp: 457, Vol 2, pp: 436, Vol 3, pp: 341, Vol. IV.
- Demiri M. (1983). *Flora ekskursioniste e Shqipërisë*. Tiranë. ShBLU. pp. 985,
- Koçi, A. & Mersinllari, M. (2012). *Data on the areal of pomegranate in Albania*. International Journal of Ecosystems and Ecology Science (IJEES), Vol. 2/3, pp 64-69.
- Koçi, A. (2013) *Floristic analyses of the areal of Punica granatum in Albania*. 1<sup>st</sup> International Conference on Research and Education (ICRAE 2013), Shkodra, Albania
- Xhuveli L. (2012) *Albania, the domestication country for pomegranate (Punica granatum L.)* International Journal: Genetic Resources and Crop Evaluation. Volume 59, Issue 8, pp 1605-1610