

**Teknik Not**  
**Technical Note**

## **The Utilization of Adjarian Greenery Resources in Nutrition Industry and Pharmacy**

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### **ABSTRACT**

The article mentions about *Rosa canina*, hawthorn, *Crataegus pentagina*, *Galanthus woronwii*, *Colchicum speciosum* and *Humulus lupulus* plants which are widespread in the forests of Adjara region of Georgia. It also gives information about the processing ways of these plants in food industry and pharmacy. The processing of these plants is performed by enterprises on the territory of Turkey near the boundary of Adjara.

### **Acara Bitkisel Kaynaklarının Gıda ve İlaç Endüstrilerinde Kullanımı**

### **ÖZET**

Bu notta Gürcistan'ın Acara bölgesinde yaygın olarak bulunan *Rosa ssp.*, *Crataegus pentagina*, *Galanthus woronwii*, *Colchicum speciosum* ve *Humulus lupulus* bitki türlerinin gıda ve ilaç endüstrilerinde kullanımı hakkında bilgi verilmiştir. Bu bitkiler Türkiye'nin Acara sınırına yakın bölgelerindeki işletmeler tarafından işlenmektedir.

### **INTRODUCTION**

Adjara region, mainly consists of mountainous reliefs. This territory belongs to Kobuleti, Khelvachauri, Keda, Shuakhevi and Khulo administrations. Adjara mountainous zone consists of North Slope of Shavsheti Mountain Range, the western Slopes of Arsiani Mountain Range, Shavsheti Mountain Range which branches on the boundary of Turkey-Georgia and the north end of Pont Mountain Range forming Adjara's mountain zone. Thanks to the geographic location and the high precipitation, the flora in Adjara Mountains is so various which consist of approximately 1900 plant species (Gagnidze and Davitadze, 2000). Because of the available of similar climatic factors and geographical location, the same kinds of plants spread on the territory of Turkey.

### **MATERIALS AND METHODS**

The five species mentioned above were investigated in the area of Khelvachauri, Keda, Shuakhevi and Khulo. It is paid attention to these plants used in the different fields of economic affairs (Eristavi, 2005). Features like natural stock, biological characteristics and fruit chemical composition of these plants

were studied. The natural stock of these plants has been decreased by influence of anthropological factors; that's why it is necessary to reclaim these plants in culture.

### **RESULTS AND DISCUSSION**

Adjara flora, besides trees and other plants, also consist of bushy and grassy plants. Some of this plants like *Rosa canina*, *Colchicum speciosum*, *Vaccinium myrtillus*, *Crataegus pentagina*, *Humulus lupulus*, *Senecio platyphilloides* and *Galanthus woronwii* are utilized in food industry and pharmacy (Shreter et al., 1979; Gagnidze and Davitadze, 2000). There is enough natural stock of the given plants in Adjara mountainous region. With rational exploitation it is possible to process the raw material of these plants in industrial scale.

*Rosa canina* grows everywhere in natural flora of Georgia. *Rosa canina* is widely spread in Georgia. It is a very branchy bush, with the height of 3-6 m. The fruit has pink- reddish color. The fruits of sweetbrier are polyvitaminic medical raw material, in which the doctors, technologists, chemists, public nutrition workers are widely interested. The

studying of chemical compounds of *Rosa canina* shows that the fruits are sufficiently rich with useful substances (Table 1). The fruits of *Rosa canina* contain ascorbic acid (Vitamin C) within the limits of 0, 5-2%. Besides ascorbic acid, the fruits contain little amount of the following vitamins E<sub>1</sub>, B<sub>2</sub>, P, K, organic acids, tannin compounds and Flavonoids – as Quercetine, Izoquercetine and Kaempferol.

The medicine oil caratoline is made from the fruits of *Rosa canina*. The stout succulent extract of its fruits (by adding sugar) are also used for Solosa preparation. In addition to these, *Rosa canina* is used in tea industry and Research Institute of Georgian Nutrition Industry investigate the technological regulation of producing juice from sweetbrier. This juice is recommended for production of non-alcoholic drinks. Besides cooling effects it also have medical feature as a vitamin drink.

**Table 1.** The chemical compounds in *Rosa canina* fruits (Nizharadze, 1971).

Place where plants are grown	Dry substance content in %	Tannin content	Vitamin C content in milligrams %
Shuakhevi	42,7	2,39	521,4
Khulo	35,62	2,32	452,3

In the past, local people produced *Rosa canina* in a little amount for a purpose to use as suspension. But today by the rational usage of available sweetbrier natural resources, it is possible to produce juice in industrial scale. The *Rosa canina* fruits are also used for other kinds of production for example as concentrates which were on high demand in the past.

The technological regulation of producing juice from *Rosa canina* is studied by Research Institute of Georgian Nutrition Industry (Nizharadze, 1971). The produced juices are recommended for production of non-alcoholic drinks. Besides cooling effects they also have medical features as a drink full of vitamins.

***Crataegus pentagina*** is a high bush which is used to produce medical raw material. It shows cardiotonic, spasmolytic, antihypertensive and antiarrhythmic effects. *Crataegus pentagina* extract also contain cardiovalen.

***Colchicum speciosum*** is bulbous, grassy perennial plant. It grows 40-50 cm under the ground. It has the peculiar cycle of growth and development. It is used to produce medical raw material. It contains alkaloids like Colchaminum and Colchicine. The medical drug Omain ointment is produced by

Colchaminum which is used to treat skin cancer. Colchaminum also is used to treat chronic leucosis, gullet and stomach cancer.

In early periods, on the basis of raw materials purveyed locally Batumi Chemical-Pharmaceutical factory produced Omain ointment. Nowadays pharmaceutical firm “Batfarma” created on the basis of the mentioned factory has got technological documentation of receiving various drugs. The base of raw material is provided by natural greenery stocks existing on the territory of Adjara.

***Galanthus woronowii*** is a plant which blossoms in early spring (in March), with the only white flower leaning its head down the ground. It is widely spread at hilly territories of Adjara. The bulbs are used for medical purposes. Medical drugs which are purveyed from it are Hydrobromide of Galanthaminum and used for injection and hydroclorid of Lycorine producing in tablets form. Galanthaminum Hydrobromide is applied for treating Miasthenya, muscle Disthropy, after Polyomielitis period and Radiculitis. Hydroclorid of Lycorine is expectorating drug for pneumonia and bronchial diseases.

The natural resources of the plant must be protected. Under the rational exploitation

conditions raw material can be purveyed in the producing amount. The amount of raw material can be increased via plant cultivation methods.

***Humulus lupulus*** grows at hilly territories of Adjara. It is used in nutrition industry as yeast while baking bread and while brewing beer, it is also used in medicine, like mixer at various tea types, moist squeezing-outs and extracts. It has calmative and appetizing effect so it influences positively on sleep; it is also used for climatic complications. Calmative drugs such as Cardiovalen, Sedapax, Khovalaten, Valosedan, Plantavan and heart blood vessel drugs consists of dry extract of hop and ethereal oil. Medical raw materials are fruits of the plants called cones. Because of anthropogenic factors, plants' natural resources are decreasing (Davitadze, 1981), but with taking these plants in culture how it is making in other developed countries this problem can be solved.

#### CONCLUSIONS

1.The useful greeneries spread at Adjara mountainous -*Rosa canina*, hawthorn, *Crataegus pentagina*, *Galanthus woronwii*, *Colchicum speciosum* and *Humulus lupulus*-can be used in various ways today.

2.The production of their raw materials by industrial scales can be achieved by rational

exploitation of natural provisions and via cultivating of various plants by local people.

3.The natural conditions of Adjara mountainous regions are similar to these of Turkey where the natural plant stocks' raw materials are processing by associated enterprises.

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