

# Application of plants from family Caprifoliaceae of the Pirot County (Southeastern Serbia) in ethnomedicine

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## Introduction

The herbal medical products can be used to alleviate the disease or as a useful adjunction therapy to a modern pharmacotherapy. Their safety and efficacy can be expected from the experience gained in many years of use in traditional medicine. In this regard, an ethnopharmacological study was conducted in Southeastern Serbia, Pirot County.

Medicinal plants of the Caprifoliaceae family, which are part of Serbian flora, and which was noticed in the Pirot County according to Marković et al. (2010) are *Sambucus ebulus*, *Sambucus nigra*, *Sambucus racemosa*, *Viburnum lantana* and *Viburnum opulus*.

## Methods

Research about the knowledge and usage of medicinal plants in the Pirot County was conducted during the year 2017 by interviewing the population living in one of four municipalities of this county: Pirot, Babušnica, Bela Palanka, and Dimitrovgrad. The rural population in the mentioned municipalities completed a questionnaire containing questions about general information about mentioned species and specific questions, related to the knowledge and the way of usage

and application of medicinal herbs. The population of 144 villages of the Pirot County was included. 631 persons, of which 337 were male and 294 were female, were interviewed (Stankov Jovanović et al, 2018; Marković, 2019).

The results of interviews are presented in a tabular manner in alphabetical order of villages in four municipality. The data were entered in the columns: municipality, village or the name of the place of residence, gender, age, form in which the medicinal plant has usage and medicinal use.

## Results and discussion

During the interviewing the local population of Pirot County, two species of Caprifoliaceae family were the subject matter of questions: *Sambucus ebulus* L. and *Sambucus nigra* L. Of the total number of the interviewed population about two species of genus *Sambucus*, 124 persons knew about them, which 109 of them were Serbian nationality and 15 were Bulgarian nationality. Among respondents, total of 66 were male, and 58 were female. In Pirot municipality, species of genus *Sambucus* were known to 69 respondents, in municipality Babušnica 14, in municipality Bela Palanka 26 and municipality Dimitrovgrad 15 interviewed people. The usage of fresh

leaves of dwarf elder (*Sambucus ebulus* L.) as repellent was mentioned only by 70 years old Serbian nationality interviewed male, he was living in a municipality in Pirot County.

Elder (*Sambucus nigra* L.) is also known as „baz“ or „bazovka“ to the local population of Pirot County. A total of 123 interviewed persons mentioned the elder and its medicinal usage (Table 1). The majority of interviewed persons mentioned the use of the flower of the elder (*Sambuci flos*) in the form of tea in the treatment of common cold (65 persons), in treatment of cough (30 persons) and treatment of bronchitis (7 persons). In the treatment of lung diseases in the form of tea, elder leaves (*Sambuci folium*) were mentioned by 3 persons, and the same number of people were familiar with its perspiration effect. In the treatment of respiratory organs, the usage of elder leaves was known to 2 persons, and the same number of persons was familiar with its treatment of stomach problems, bronchial diseases, and sedative effects. One respondent interviewed person mentioned usage of elder flower in the form of tea for secretory glands, one for treatment of influenza and one was familiar with usage in the treatment of high blood pressure. The usage of oil obtained from elder flowers for the treatment of skin wounds was mentioned by one person. The usage of oil obtained from elder bark (*Sambuci cortex*) in the treatment of skin burns was mentioned also by one interviewed person.

Similar results were obtained by Jarić et al. (2017), who did a similar ethnobotanical study about the usage of wild medicinal plants of Kopaonik mountain (central area of Republic of Serbia). They mention the following effects: diuretic, antiseptic and anticatarrhal properties effects, pungent, reduction of inflammation, fever-reducing, internal usage for various colds, influenza and perspiration (tea), expectorant, for pertussis (tea made from equal amounts of elder). Zlatković and Bogosavljević (2014) studied the taxonomic and pharmacological valorization of medicinal plants of the Svrljiški Timok gorge in eastern Serbia. They emphasize the following effects of *Sambucus ebulus* L.: diuretic, diaphoretic, purgative, in treatment of neuralgia, in treatment of rheumatism, in treatment of gout, and that *Sambucus nigra* L. shows following effects: diaphoretic, diuretic, laxative, anti-inflammatory, in treatment of colds, in treatment of influenza. Tasić (2012) mentions the usage of flowers and fruits of *Sambucus nigra* L. for treatments of colds and influenza.

## Conclusion

Based on the results of interviews of the local

population in Pirot County done in this study, it can be concluded that elder (*Sambucus nigra* L., Caprifoliaceae) is well known to people living in the rural area and that is frequently used for the treatment of various medical indications. The elder flower has been most frequently used in the form of tea in the treatment of cold, cough and bronchitis, while some minor application has been reported in the treatment of respiratory and gastrointestinal issues. Other sporadically reported treatments were sedative, diaphoretic, secretion of glands stimulation, treatment of influenza and regulation of high blood pressure. Furthermore, the usage of elder flower and cortex in the form of oil macerate was reported in the treatment of skin wounds and skin burns. Only one respondent reported usage of fresh leaves dwarf elder (*Sambucus ebulus*L.), but not for the treatment of health issues.

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