ABSTRACT

The aim of this work was to find out the content of flavonoids in the flowers of eleven cultivars of black elder (*Sambucus nigra* L.) and determine if their contents differ according to the statistical significance. Preparing the list of effects and substances that are contained in the flowers was the goal as well.

The drug *Sambuci nigrae flos* is mostly used for its content of flavonoids and hydroxycinnamic acids in the therapy of colds and diseases of the urinary and respiratory tract. Its benefits were confirmed also by studies testing antibacterial and antiviral activity, diabetes and obesity, effects on the immune system and also protection against UV radiance.

The content of flavonoids was established by the spectrophotometric method that is listed in the Czech Pharmacopoeia 2009 in the article *Sambuci nigrae flos* as the method for the determination of content. The statistic evaluation of the differences in the flavonoids content between the cultivars was made by ANOVA and the Bonferroni test. The demand of Czech Pharmacopoeia 2009 on the minimal content of flavonoids is 0,80%. This requirement was fulfilled in the flowers of these cultivars: Albida, Heidegg 13, Riese auß Voßloch, Sambu, Samdal, Sampo and Samyl. On the opposite side, flowers of the cultivars Allesö, Aurea, Dana and Juicy did not meet the requirements of pharmacopoeia. The highest content of flavonoids was found in the flowers of the cultivar Riese auß Voßloch with the value of 1,3603% and the lowest in the flowers of cultivar Dana with the value of 0,3598%. The highest avarage content of flavonoids had the cultivar Sambu, followed by the cultivars in this order: Riese auß Voßloch, Sampo, Albida, Heidegg 13, Samyl, Samdal, Juicy, Allesö, Aurea and Dana. The statistic evaluation proves that there are significant differences in the flavonoids content between cultivars.

All cultivars are potentially appropriate for the harvesting of the flowers excluding Allesö, Aurea, Dana and Juicy, which did not reach the demanded content of flavonoids listed in pharmacopoeia.