

Preliminary Studies Regarding the Biodiversity within the *Veronica* Genus for the Characterization, Preservation and Sustainable Use of the Plant Genetic Resources

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SUMMARY

The decrease of the surface of natural ecosystems, to which can be added the climatic changes from the last decades, have lead to a reduction of the areas where some species have grown, and, on the other hand, to the decrease of intra- and inter specific genetic variability. The aim of this project is to contribute to the protection the biodiversity of the *Veronica* species. These studies will contribute to the biodiversity conservation but also to its reconstruction in areas where it was affected already by the anthropogenic impact.

Veronica is the most species-rich genus of family *Plantaginaceae*. In the spontaneous Romanian flora 41 species of *Veronica* have been reported. The genetic diversity (Albach *et al.*, 2004) of the species, and the chemical composition used for phytotherapy (Crisan *et al.*, 2009), have encouraged different types of research to be carried out on these species with the practical aim of including them in breeding programs, especially the *V. officinalis* species.

A characterization, with the Geographic Information System (GIS) of the habitat conditions from two protected areas – Ceahlau National Park and Apuseni Natural Park – was carried out. By analyzing the comprehensive digital maps, significant differences between the habitat conditions of the two protected areas have been identified.

Knowing the value and importance of the *V. officinalis* species for phytotherapy, and also the antropic preasure maintained on it as source of active pharmacological compounds, a comparative biochemical screening of different *Veronica* species, in order to identify alternative species with comparable biosinthetic spectra to be used as alternative sources was performed. The biochemical fingerprint of the *V. officinalis* species was characterized through HPLC-MS for polyphenols and iridoids. In *Veronicae officinalis herba*, the free polyphenols are found in small quantities since their biggest part are present as esters; the esters of the ferulic acid are present in the biggest quantity. For the first time in our country the quantitative determination of aucubin and catalpol in *V. officinalis* was carried out.

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