PURE SPECIES OF GRASS DISCRIMINATION WITH THE HELP OF HYPERSPECTRAL IMAGING NIR

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Abstract
The possibilities to discriminate with hyperspectral imaging system, SWIR ImSpector N25E in grass mixtures of the pure species *Festuca rubra* L., *Trifolium repens* L., *Agrostis capillaris* L., *Hieracium aurantiacum* L., *Arnica montana* L.was the objective of this study. All the samples were collected from natural meadows, from the National Apuseni Park, Apuseni Mountains, from Gârda area. The samples were naturally dried then prepared using the protocol for NIRS analyze. The model built with PLS–DA, was used to demonstrate wether the classes discrimination between pure species is possible or not. The goal of this study was to see in other images if the pure species are or are not recognized according to the spectral data base. The potential of using the Hyperspectral Imaging NIR (Camera NIR) to discriminate or to identify pure species was confirmed. For this technique the MatLab program was used .A percentage of more than 96% correct prediction for species discrimination was obtained. This study should drive to a more important point, which is to verify whether the toxic species are or are not used as food for animals in the natural meadows. The floristic composition of a meadow can be determined only if we have in the data base, dates for each identified species, as being part of the mix.

Key words: discrimination, camera NIR, pure species, meadow

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