HYPERSPECTRAL EVALUATION OF THE PEAR TREES ON THE BASIS OF THE GENETIC COLLECTION OF THE DIFFERENT SPECIES

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ABSTRACT:

The principle task of the sustainable development is the preservation of the genetic variety, which is similar challenge in the horticulture regarding the sublimation of fruit species. The breeders of the traditional fruit strains give stock to the sustenance diversity of the agro - environment on the species and landscape level. In 2009, hyperspectral images have been taken by AISA Dual sensors from the pear gene pool in Újfehértó, Hungary. The hyperspectral data cube (in the wavelength range of 400-2500 nm, with 1,5 m ground resolution) ensured possibility to make the spectral library of pear species. In the course of the simultaneously field work the spatial position and individual extent of all pear trees was defined to set up a detailed GIS data base. The water stress sensitivity of single species and the descriptive spectral curves were determined with common evaluation of the spectral and spatial data. Based on the unique methodology processing and the hyperspectral data base suitable strains can be chosen for agro-environment and let take adaptive stocks regarding climate change into the genetic grafting work. Furthermore we could determine and map the sparsely species in the region with the help of the hyperspectral data.

TOPIC: Multi-spectral and hyperspectral remote sensing
ALTERNATIVE TOPIC: Land cover classification