

The master thesis deals with the determination of the chlorophyll content in birch foliage (*Betula pendula* Roth) and Scots pine using hyperspectral data. The first part of the thesis concentrates on the literature search dealing with the methods of chlorophyll content in the foliage of selected plant species. In the practical part the emphasis is on the study of spectral reflectance curves and finding their relation to the chlorophyll content from the laboratory determination. Images taken with the hyperspectral sensor HyMap and spectral reflectance curves obtained with the ground ASD FieldSpec 3 spectrometer were available. Using the derived regression model chlorophyll maps were created for Scots pine for three selected locations in the Sokolov coal basin area.