Geophysical Research Abstracts,
Vol. 10, EGU2008-A-11640, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-11640
EGU General Assembly 2008


# Properties, composition and mutual relationship of soil and plant covers concerning land use change

T. Koster (1), **R. Kolli (1),** M. Noormets (1), K. Kauer (1), K. Rannik (1), R. Lillak (1), L. Szajdak (2)

1. Estonian University of Life Sciences, Institute of Agricultural and Environmental Sciences, Kreutzwaldi 64, 51014, Tartu, Estonia, Tiina Koster e-mail: tiina.koster@emu.ee; Raimo Kolli e-mail: raimo.kolli@emu.ee; Merrit Noormets e-mail: merrit.noormets@emu.ee; Karin Kauer e-mail: karin.kauer@emu.ee; Kaire Rannik e-mail: kaire.rannik@emu.ee; Rein Lillak e-mail: agro@emu.ee
2. Research Center for Agricultural and Forest Environment, Polish Academy of Science, ul. Bukowska 19, 60-809 Poznań, Poland e-mail: szajlech@man.poznan.pl

Soil cover is a determining factor in the development of plant cover and its diversity. This paper studies the suitability of soils for different plants, the soil conditions needed for sustainable development of plant covers and the soil aspect of soil-plant relationships. This paper also uses a four-group pedo-ecological sequence (PES), from *Leptosols* to *Podzols*, to analyse the differences in soil properties and their influence on plant diversity and productivity. This analysis of plant-soil relationships along PES is the basis for a discussion concerning the matching of natural forest and grassland plant communities as well as the suitability of different arable crops to PES soils.

The main activities for the arrangement of ecologically sound land use in any area are: the selection of suitable soils for the cultivation of different crops; planning soils for land reclamation for agricultural purposes; reforestation of low quality grasslands and fields; improvement of conventional management of soil cover, and using new technologies and methods for increasing soil productivity and quality. The results of the study are needed for the arrangement of efficient conservation agriculture; in the maintenance of regional biodiversity, in the elaboration of environmental conservation

strategies and in the introduction of an ecosystem approach based on land management.