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Human impact on selected soil chemical characteristics in the Jizera Mountains region

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The Jizera Mountains region is situated in the north of the Czech Republic. This region is also called “Black triangle”, because of very high emission amounts originating mainly from thermal power plants in the past. Whole region was strongly affected by acid rains and the damage of forest and soils by acidification continues to present time. In the Jizera Mountains, the damage of soil and forests led to forest decline in the top parts of the mountains. This place was very fast invaded by grass (Calamagrostis villosa) as natural mechanism of ecosystem restoration. Liming of these acid soils was used as technical mechanism of soils and follow forest ecosystem amelioration.

This contribution deals with comparing of soil chemical characteristics in four types of sampling places: limed deforested area, non-limed deforested area, spruce forest, and spruce forest with grass floor. Samples were collected for each variant from sufficiently thick soil horizons. Basic soil characteristics were measured by commonly used methods (pH, humus quality as A_{400}/A_{600}, contents of available Ca, Mg, K and P and pseudototal content of Ca and Mg). Results show significant differences in soil characteristics between deforested area and neighbouring surviving forests in organic horizons. For example pH_{H2O} is higher in surface horizons of deforested area than in forest surface horizons. Differences become neglectable with increasing depth.

The results suggest particular restoration of soil conditions in the regions strongly affected by anthropogenic acidification.

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