

**BIOLOGICAL ACTIVITY OF MOUNTAIN AND PLAIN CHERNOSEM SOILS
IN THE CENTRAL CAUCASUS (WITHIN KABARDINO-BALKARIA)**

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A comparative analysis of biological properties of several subtypes of mountain and plain chernosems in the Central Caucasus (within Kabardino-Balkaria) was conducted. Statistically significant differences between the parameters of biological activity in the upper horizons (0 – 20 cm) of the soils under study were revealed. Mountain chernosems are characterized by the high humus content (by 38% on average), an increased activity of dehydrogenase (by 42%) and urease (by 35%), and all microbial parameters (by 12 – 53%). The invertase activity was higher in plain chernosems (by 47% on average). Dispersion analysis has shown that the influence of formation conditions (mountain or plain) is a more significant factor for a number of the studied parameters than features of the studied soils at the subtype level. The strength of the factor of genetic differences lies in the range of 1 – 5%, while the influence of formation conditions ranges from 15 to 33%. The total biological activity of the upper horizons in mountain and plain chernosems was evaluated by means of an integral index of ecologico-biological soil status (IEBSS) which shows a higher biological activity of the upper horizons in mountain soils (IEBSS differences are within 5 – 18%).

Key words: humus, microbial biomass, enzymatic activity, integral index of ecologico-biological soil state.

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