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INFLUENCE OF CEMENT PRODUCTION ON TRENDS IN MICROBIOLOGICAL PROCESSES AND PHYTOTOXICITY OF SOIL

The paper provides the results of influence of cement production on the black soil biological activity and determines the degree of fiber decomposition and gas exchange intensity in this type of soil. The authors have studied the main taxonomic groups of soil microorganisms, trends in an organic substance microbiological transformation and reaction of the tested plants to the soil contamination with products of technogenesis. It has been determined that under the influence of air-technogenic emissions of the cement production within the range up to 0.6 km from the source of emission, the activity of soil microorganisms decreases thus leading to the decrease of humification of the soil organic substance, accompanied by the increase in the soil fulvic acid rate; due to the increase of the soil toxicity the biological productivity of the test-plants decreases. Within the range of 4–10 km from the source of emission one can observe the increase in the amount of the soil microbe cenosis, activization of mineralization and immobilization processes and gas exchange in the soil.

Key words: cement production, wastes, asched humus, biological activity of the soil, soil microorganisms, humus, test-plants.