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**ОСВОЕНИЕ СЕВЕРА
И ПРОБЛЕМЫ
ПРИРОДОВОССТАНОВЛЕНИЯ**

Тезисы докладов

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V International Conference

**THE DEVELOPMENT OF THE NORTH
AND PROBLEMS
OF NATURE RESTORATION**

Abstracts

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Освоение Севера и проблемы природовосстановления: Тезисы докладов V Международной конференции-Сыктывкар, 2001 – 302 с. (Коми научный центр УрО РАН).

В сборнике рассматриваются результаты исследований по проблемам устойчивости экосистем Севера, их трансформации при техногенном воздействии, разработке методов природовосстановления, представлены материалы по восстановлению биоразнообразия на посттехногенных территориях, экологическому картированию, обсуждаются эколого-экономические и медико-социальные аспекты природопользования.

Тезисы на русском и английском языках опубликованы в авторской редакции и расположены в алфавитном порядке.

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PERSPECTIVES OF USAGE OF DEPOSITS SEWAGE CELLULOSE-PAPER INDUSTRY FOR RADICAL IMPROVEMENT OF SOILS EUROPEAN NORTH

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The need of poor soils of European North in organic fertilizings can not be satisfied only with depositing of peat and dung, therefore search of untraditional sources is an urgent problem. In conditions of negative balance of humus usage of deposits of sewage of a cellulose-paper industry is rather perspective, which cooperative value on the Arkhangelsk region and Komi Republic makes the huge value – approximately 15 millions tons.

The fissile slime generator in during clearing of sewage of timber industry combines, represents a composite biocenosis of microorganisms: bacteria, yeasty and musty funguses, elementary, nematodes, rotatoria. After addition of ferric chloride and limy material there is its coagulation. Then mass is dehydrated on vacuum-filters up to humidity 80-82%. Settlings is rich by organic carboneum (20-37% in calculation on dry matter), key elements of mineral power supply (Ca: 41-51%; N: 1.1-2.7%; P: 0.7-1.2%; K: 0.2-0.3%) and trace substances. Besides he differs by high value pH (8-12) and cation-exchange capacity (220-250 mg-equivalents/100 g).

For today the problem of a salvage of deposits is not decided neither in theoretical, nor in the practical schedule. A used method – the burial in opencasts with the subsequent recultivation, as a matter of fact, represents variant of the temporary compromise between necessity of their stacking and ecological requirements to shield from random hit of ingredients in alimentary chains and aqueous arteries. As they cannot be transported because of high humidity on long-distance distances, they create an extensive zone ecological and social discomfort near to an inhabited locality. In places of their burial the flowing out secondary drains in due course boost abundant reproduction of edible fungi being concentrators of heavy metals.

The salvage of the deposits, which have collected for much decade, as complex fertilizing on acidic grounds with a low contents of humus could promote a solution of the several tasks – decrease of a level of environmental and radical improvement of boreal soils. The non-use of deposits in agriculture is coupled:

- with the boosted contents in them of ions of serious metals (Hg: 8-12; Cd: 3-4; Ni and Cr: 70-220; Zn: 210-330; Cu: 140-200 mg/kg);

- presence at their composition chloric and sulphur compounds inhibiting function of a soil biota;

- negative effect of excess of salts of ferric chloride on plants;

- by phytotoxic effect of metabolites of funguses of a strain *Penicillium*, *Aspergillus*, *Trichoderma* and other not identified strain, living on substrate from fissile slime (in the biotests in comparison with a control they kill germinating capacity seeds in 3-4 times, inhibit body height rootlet in 7-8 times).

The toxiferous units in ground can render direct influence on saturation by them of tissues of plants, that will be mirrored in the subsequent parts of an alimentary

chain – animal and man. Therefore it is important to have the items of information, which are clearing up accumulation of serious metals in ground after long-lived depositing of deposits. The researches permitting to troubleshoot at a level knowledge of the factors, xenobiotics, initiation a natural inactivation, are necessary even during storage of wastes.