SOURCES OF HEAVY METAL INCREASE IN SOILS IN THE TERRITORY OF BREST REGION

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According to FAO, WHO, UNEP, currently heavy metals occupy one of the first places in terms of the level of danger, ahead of such dangerous environmental pollutants as pesticides, carbon dioxide, sulfur compounds, nuclear waste and solid waste. These pollutants are the most dangerous in terms of rates and volumes of release into the environment.

Keywords: sources of pollution, heavy metals, soils.

Currently among heavy metals, Pb, Cd, Zn, Hg, As, Cu are considered to be the priority pollutants. their ac-cumulation in the environment is very fast. The content of various elements in soils is significantly influenced by the atmosphere, when contamination of TM from the atmosphere, the distance on which the soils from the prima-ry source of pollution are important plays an important role. As you move away from it, the intensity of soil con-tamination decreases, but at the same time the area exposed to pollution increases. Soil contaminants, carried by air, arise not only in the course of human activities, but also in connection with a number of natural factors.

The main sources of airborne contaminants TM in Brest region:

Natural sources of income:

1) soil formation, weathering of rocks and minerals;
2) space (cosmic dust);
3) forest fires.

A great difference is observed in the content of heavy metals between coarse (sandy) and finely dispersed (loamy and clayey rocks): in sand it is several times smaller than in loams and clays. The gross content of ele-ments in natural, unpolluted soils is due to their content in the parent rock. The background content of heavy met-als in soils is an important indicator for assessing the degree of their contamination. This is due to the fact that the spread of the content of individual elements in different countries in regions within the same type of soil may overlap with that on other types of soils.

Anthropogenic sources:

1) Transport - locomotive depot in Brest. Brest is the largest railway junction on the border of the CIS and the Euro-pean Union (lead compounds, exhaust particles of cars, coal dust, ash).
2) Heat power plants (coal dust, ash, smoke, toxic solid particles, gases (a potential source may be the Brest Heat and Power Plant);
3) Metallurgy (ash, soot, dust). On the territory of the Brest region there are the following metallurgical en-terprises: Brest Electric Bulb Plant, Brevttortchermet, Beloelectrostroy Assembly LLC, Velcinia LLC, BrestMe-tallKraft LLC, Metal Bug LLC, Val Vick Plus LLC, JLLC " Lumber, ChTUP AustmetGroup, UP BrestMet, OOO Brestmash, OOO Special Materials (RF) in the Republic of Bashkortostan, ChTSUP Metsnab, Skill LLC, Fina LLC, UE Metall Plus , OJSC "Metalist"; enterprises for the production of electrical products: LLC "VDS", ODO "Belsan"; plant for the production of gas stoves of JV JSC "Brestgazoapparat", etc.
4) The industry of construction materials (cement dust, fluorine, etc.): Beltrim LLC, RUE Brestvodstroy, Azaria Stroy LLC, Inteks, NPKCs, Kultbybkhoztorg OJSC, Brestoblubrador UE, Promtekhmash LLC ", ChUP TP" Zov ", Chernavchitsky ZZHBI, Brest Plant ZHBK, Brest Plant of Building Materials and others.
5) Chemical industry (production of inorganic and organic substances): JSC "Brest Factory of Household Chemicals", JSC "DBK"; paint and varnish industry: JV "Diskom", ChUPP "Modest", ChT PUP "StroyAvtostil", UE "Minsk Lakokraska Bug", LLK Lankvatzer Lakfabrik Bel, ICCHPP "Condor" etc .; production of plastic and packaging: ChUPP "TKL", FE "Skrobot SV", LLC "Riona", PT ChUP Zyudpakbel and others.
6) Pulp and paper industry, printing: "Vecherniy Brest", "Zarya", "Brestsky Courier", "Brest Herald", "Brest Printing House", "Akademia" publishing house.

7) Pharmaceutical industry: Slavex-B firm Slaveks ICCHUP, World of Ecology Regional representative of the DIODE plant in Moscow.
8) Refining of petroleum products: OOO NAAS, IP Lukoil Belarus, Koneel IP, Ideal Standard UTS, Bresto-blnefteprodukt, BelTransOil JV.
9) Food and meat and dairy industry (lead compounds): Inco-Food LLC, meat processing plants.
10) Solid and liquid household municipal waste, including SALT.
11) Human settlements (ash, dust).
12) Agriculture (fertilizers, pesticides).

The problem of the accumulation of solid domestic waste and the composts that are produced on their basis, which in the 1980s were used as organic fertilizers in agriculture, is of particular concern. On the territory of the Brest region there are 12 polygons for storage and disposal of wastes (according to the website of the Ministry of Natural Resources, as well as from other Internet sources) landfills of solid waste:

1. Landfill Brest Street. Kovelskaya, 1.
2. Landfill pos. Berestye.
3. Landfill site of Omelino village.
4. Landfill site Medno.
5. Landfill for storing agricultural waste in the village of Vitoski.
6. Sludge removal Brestenergo.
7. Storage tanks for slurries of petrochemicals and bitumen-containing wastes of road building trust No. 4 in the village of Vychulki.
8. Sludge accumulators of Brest stocking plant.
9. Sludge pads for storage of sewage sludge of the Brest city sewage treatment plant in the village. Berestye.
10. Sludge ponds and mud collectors of urban sewage treatment facilities - the territory of treatment facilities and on the territory of the 5th Fort.

Thus, uncontrolled use of sewage sludge and solid household waste in a pure form or as part of composting mixtures carries the danger of contamination of soils and plants with heavy metals, which limits the use of sew-age sludge and solid household waste as fertilizers for all types of crops. A certain contribution to the supply of HM to the atmosphere can be provided by the CHP plant and the waste processing plant located in the city of Brest. Also alarming is the battery plant under construction in the Telma area - 2 in Brest.

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