

Heavy metals accumulation in wood tissues of the forest-forming species grown in the Steppe technogenic landscapes in Ukraine

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Territory of Steppe in Ukraine is affected by significant anthropogenic impact caused with mining, metallurgical, chemical plants and heat power stations. The priority pollutants of the region missions of these enterprises are presented such heavy metals as Cd, Pb, Cu, Zn, Ni, Mn. The regional forest ecosystems can be considered as potential concentrators of pollutants borned with different technogenic impact. It is necessary to study an ability of forests wood to accumulate heavy metals because accumulated toxins are eliminated from biogeochemical cycle in forest ecosystem for a long time.

This study goal is to determine the accumulation properties of forest-forming species – *Pinus sylvestris* (Scots pine) and *Robinia pseudoacacia* (black locust) difference age group in relation to heavy metals. It was considerable also to assess the heavy metal distribution in the wood tissue of referred species. Heavy metals content were determined with atomic absorption spectrophotometer using.

Scots pine and black locust are the main forest-forming species of natural and artificial forests within Northern Steppe. They can be seen as transformers of the heavy metals cycle and selective concentrators of toxic elements, under the conditions of their excessive concentrations in the environment. It was established that wood tissue of Scots pine and black locust accumulated cadmium in high concentrations according to the age in both species.

Indexes of zinc accumulation in the wood of Scots pine exceeded the maximal value in the wood tissue of black locust. The results of our research demonstrated antagonistic interaction of cadmium and zinc.

The highest copper concentrations was found for the trees at the age of 45 years. Lead has been identified in wood sample of all ages. Accumulation maximum was fixed in the oldest samples. The trend of concentration increasing of metal didn't find for both species.

As for nickel there was established the opposite tendention for both studied species. Nickel maximum accumulation in black locust was fixed for the youngest copies. The same tendency was observed for Scots pine in copies of 45 years old.

We did not see relation with age for mangan content in both studied species. The absolute value of the amount of mangan for Scots pine is much higher comparetively to black locust.