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Screening of wheat genotypes for metal tolerance breeding and agricultural production

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Use and development of varieties that are resistant to pollutants, especially heavy metals, is a constituent part of environmentally-friendly technologies which allowsto receive clean agricultural products on contaminated soil. Different genotypes of winter wheat in the East Kazakhstan agrocenoses to evaluate the accumulation of such a priority for the region pollutant as cadmium were investigated. Determination of the content of this metal in the rhizosphereof soil studied genotypes showed that the amount of cadmium exceeded the MPC for soil. Investigation of the distribution of cadmium in the organs of winter wheat showed that it accumulates mainly in roots and leaves, it is also present in the stems and seeds. Estimation of cadmium accumulation in seeds of investigated genotypes showed that the amount may exceed the MPC for seeds and the number of investigated heavy metal depends on the genotypic features of the variety. Cadmium content in seeds of winter wheat varieties Ming-2 and Komsomolskaya 56 do not exceed the MPC for the grain. These varieties can be recommended for further use in breeding for resistance to cadmium. Winter wheat variety Ming-2 is a promising variety - accumulates little amount of cadmium, has a good development, overwintering, yield, it can be recommended for growing in contaminated soils.

Biography

R A Alybaeva has completed her PhD from the Academy of Sciences of Kazakhstan and postdoctoral studies from Kazakh National University named after Al-Farabi. She is professor of Department of Biology and Biotechnology of Kazakh National University named after Al-Farabi and the chief researcher at the Institute of Ecology. She has published more than 20 papers in reputed journals, is the leader of a national and participated in the international research project.

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