**Investigation of the genetic potential of the winter wheat resistance to heavy metals for the development of clean growing technology in contaminated soils.**

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In Kazakhstan, the development of a powerful industry was based on its rich natural resources. However, the industrial centers are the areas of highest contamination by heavy metals. Sound environmental technologies are crucial to address heavy metal pollution. Development and use of plant varieties characterized by minimal accumulation of heavy metals can provide one such environmental solution. The aim of this study was to identify wheat germplasm resistant to heavy metals (lead, copper, zinc and cadmium), which are priority pollutants in eastern Kazakhstan region, and identification of donors for breeding and promising forms of wheat that are resistance to heavy metals and destined for agricultural production. Different genotypes of winter wheat, the world's collection (Kazakh, Russian, a collection of CIMMYT cultivars and lines of winter wheat, wild species of wheat) were studied. Plants were grown for scientific test site, under natural environmental pollution, in the suburban area of Ust-Kamenogorsk city, East Kazakhstan region. The content of heavy metals in plants was determined by atomic absorption on the device AAnalyst 300 of "Perkin Elmer". Experiments and determination of physiological parameters was conducted by the method of field experience. The study of the accumulation of heavy metals in components of different genotypes of winter wheat in conditions of natural pollution has shown that zinc is accumulated in all plant’s components, copper mostly in the roots and leaves, lead mainly in the leaves, cadmium in different organs, depending on the genotype. The large genotypic differences in the accumulation of zinc, copper, cadmium and lead in plant components were revealed. The results from the study showed that heavy metal accumulation in two winter wheat varieties were the least among the world collection. Although zinc accumulates in the seeds of these genotypes above MPC, zinc is not a toxic element and toxic metals such as cadmium and lead are insignificantly accumulate in the seeds of these varieties, it can be recommended for further research in breeding for metal resistance. Also the physiological parameters of the studied wheat genotypes were investigated. The highest yield from plots has winter wheat Mironovskaya-808. A crop yield of plants is connected with their ability to quickly enter to the tillering stage, successfully overwinter, preserve during the summer vegetation. Variety of winter wheat Mironovskaya-808 can be recommended for cultivation in the technologically disadvantaged regions, with soil contamination by heavy metals, as they accumulate little amount of heavy metals, they have good indicators of development, overwintering, yield.