UTILIZATION OF TECHNOGENIC WASTES INTO CHEMICAL MELIORANTS

Zh.R. Toregozhina

Kazakh National University, Department of ecology & common chemistry, Almaty, Kazakhstan

marina@kazsu.kz

Geoclimatic peculiarities of the Central-Asian region are such that almost 1/3 of all arable lands in Kazakhstan refer to acidic and saline soils. A continuous replenishment of calcium in topsoil is necessary to recover and "heal" acidic and saline soils. Besides, calcium regulates alkaline – acid equilibrium in soil solution and plants themselves, improves permeability of plasma and other physiological of calcium containing meliorants and due care after soil reserves, soils more and more undergo the process of getting wild and the rate of desert formation increasing threateningly.

One of the directions in solution of this problem is development of new ecologically oriented technologies decreasing the harmful effect of chemical industry on the environment. Utilization of phosphorus- , boron-containing wastes as secondary raw materials for production of meliorants assumes additional actuality from the point of view of food-supply security of the Republic of Kazakhstan.

In this connection, development of the methods of producing meliorants with fertilizing and meliorating properties from technogenic raw materials is one of the most important state and actual tasks concerning the interests of both modern chemical technology and environmental protection.

The idea of the work is to substantiate scientifically and practically a complex of measures for environmental protection when introducing a technology of conversion of liquid and solid wastes into complex fertilizing products.

The work creates technological base for obtaining new meliorants and develops resource saving technology by recycling phosphorus and boron containing wastes and non utilized raw materials into CaMgPB containing meliorants, which can be competitive on internal and world market.

For the first time, regularities of phosphate and borate ions sorbing with the use of wastes and unconditioned ores were investigated, technological scheme of obtaining new meliorant was developed, new technological parameters of its manufacturing were discovered, meliorants were optimized by basic useful for plants components.