POLLUTION OF THE FOOD CHAIN AND ENVIRONMENT BY PHTHALATES FROM POLYMERS MATERIALS

Acad. Gheorghe Duca[1], Dr. Hab. Rodica Sturza[2], PhD Dmitri Lazakovich[3]

[1]Academy of Sciences of Moldova, Moldova
[2]Technical University of Moldova, Moldova
[3] National Center of Alcoholic Beverages Testing, Moldova

During 2010-2015years were tested over 4,000 samples of food products for the presence of phthalates residue, the results of which demonstrated the problem of pollution. It was noted that the phthalate migration depends on many factors. Thus determination of the influence of temperature factor on migration of DBP and DEHP from PVC sample in a model solution showed that temperature rise increased exponentially the phthalates migration speed and as the result significantly increasing their content in water or food samples contacted with polymers with heating.

The analytical evaluation of phthalate residues in water resources for industrial purposes was realized for the 9 food industry replaced in Chisinau, Ialoveni, Taraclia, Cantemir, Straseni, Stefan Voda and Orhei. All data received by testing of water sources showed that the phthalates residue levels were below the limit of detection (0,005ppm). Whereas in samples from the same sources after water treatment the total content of DBP and DEHP varied in the range 0,005–0,030ppm, indicating the possibility contamination by phthalates, due to contact with the various plastics, rubber, filler material, etc. during water treatment [1].

The retention of phthalates in soil is influenced by many factors: soil properties, types and number of microorganisms, etc. The data obtained for agricultural soils of Moldova central region confirm the soil contamination by phthalates. DBP content in the soil (agricultural land, vineyards) was till 0,279ppm, DEHP in some cases reached till 0,925ppm. While the phthalates concentration in soil samples and water sources from the Chisinau city was less than LD.

Taking into account the active process of biodegradation of phthalates molecules by soil bacteria [2], one might assume that the main sources of pollution Moldova environment by phthalates are the processes, associated with agricultural work. It would be desirable that farmers make an assessment of their risk conditions for implementing solutions for prevention pollution.

Bibliography

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