

The use of interface spectrophotometric in quality control and examination of foodstuffs and raw materials.

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It is known that the quality control and environmental safety of food products involves, among other factors, determination of the content of the following metal ions: Cu (II), Zn (II), Pb (II), Cd (II), Hg (II), Fe (III) and others.

In Ukraine, the content of these metals is determined using standard methods of photometric, polarographic and atomic absorption analysis. The main disadvantages of these methods are complicated sample preparation and the necessity of expensive equipment, which requires maintenance in permanent laboratories and by highly qualified personnel.

We used the method of solid-phase spectrophotometry, which allows combining sorption concentration and subsequent photometric determination in the solid phase, for the determination of microelement composition of different foodstuffs.

Copper (II) was determined as a complex compound with a reagent SPADNS (2-(4-sulphophenylazo)-1,8-dioxynaftalin-3,6-disulphoacid) which was immobilized on anion exchanger AB-17×8. Zn (II) is low-toxic. However control of Zn (II) is conditioned by its high biological value. In this study, Zn (II) was separated from the Cu (II), Pb (II), Hg (II) and Fe (III) using xylenol orange, immobilized on AB-17×8, then Zn (II) was separated from the Cd (II) by acid chromdarkblue, immobilized on anion exchanger AB-17×8. Zn (II) was determined in the liquid phase in the form of photometric complex compound with xylenol orange. The high toxicity of the ions Cd (II) and its compounds, necessitates the development of highly sensitive, selective and fast methods of their determination. Cd (II) was determined by eriochromblack T, immobilized on anion exchanger. Pb (II) is one of the most toxic metals. Determination was performed using pyrikatechin violet reagent, immobilized on anion exchanger AB-17×8. Hg (II) is also one of the most toxic metals. Mercury (II) was determined by chromazurol S, immobilized on anion exchanger AB-17×8. The content of Fe (III) was determined using arsenazo III, immobilized on anion exchanger. All definitions were carried out after ultrasonic sample preparation. Graphical version of the addition method was used for the determination of metal ions content. Validity check of the data was performed by the "made-found". The convergence of the results obtained by the new methods of interface spectrophotometric - definition and standard methods of polarographic and atomic-absorption determination confirm their accuracy.