electronic microscope has shown, that on a surface treated with \text{Pd(NO}_3\text{)}_2\) metal Pd is as the chaotically located little particles and the reducing Pd(II) from the complex gives areas of thin porous coating. Such surface probably is more active.

Pd metal complexes chemical modifiers had been approbated at determination of Cd in extracts of mine waters, Mo in milk and so on.

**COMMON CHARACTERISTICS OF A,X,Y-ZEOLITES AS IONIC EXCHANGER IN WASHING DETERGENTS**

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*Key words:* zeolite, washing detergents, NaTTP adsorption

Zeolites A,X,Y has common formula: \(x \text{Na}_2\text{O} \cdot \text{Al}_2 \text{O}_3 \cdot y \text{SiO}_2 \cdot z\text{H}_2\text{O}\). Special importance is capability of ionic exchanger and selectivity of more valence ions, special Ca, which is important precondition for the application in the process of washing.

Great exchange capacity has zeolite of type A with \(x = 1\), \(y = 2\) and variable \(z\).

For ionic exchange, influence has ratio between radius of Na-Al silicate porous and effective ionic radius which are exchange, including heir hydrate cover.

Zeolite of A, X, Y type has been used for our testing, but the best results are provided by Zeolite A application, as substituent of phosphate component in detergents.

**APPLICATION OF ENZYME-LINKED IMMUNOSORBENT ASSAY METHOD FOR SCREENING THE TOTAL AFLATOXIN CONTENT IN NUTS**

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*Key words:* Aflatoxin \(B_1\), Aflatoxin \(B_2\), Aflatoxin \(G_1\), Nuts, Enzyme-Linked Immunosorbent Assay

Mycotoxins are highly toxic compounds produced by fungi. These toxins can contaminate foodstuffs when storage conditions are favorable to fungi growth. Aflatoxins are known to be mutagens, teratogens (causing fetal abnormalities) and carcinogens (particulary in cancer of the liver or kidneys). Maximum permitted concentration according to Macedonian legislation for total aflatoxins in nuts is 5 \(\mu\text{g/kg}\). When the sample number for aflatoxins analysis is big enough, there is a need for implementation of a fast and accurate method for their analysis. The quantitative test for total aflatoxin content based on solid phase immunoassay technology was successfully applied in our laboratory using EZ-SCREEN Aflatoxin cards (Rhone-Poulene Diagnostics Ltd, Scotland). The method allows to work with 5 \(\mu\text{g/kg}\) cut-off, which means that the samples that appeared to be negative, by this test were with total aflatoxin content under 5.
μg/kg, and the positive samples contained aflatoxins above this concentration. Quality control of the method was done by running a negative and positive control each day before testing.

Additional analysis was undertaken for positive samples, by confirmation methods (TLC or HPLC with fluorescence detection). Approximately 90% of positive samples analyzed with immunoassay technology were confirmed by other analytical techniques.

References


LEAD, CADMIUM AND ZINC CONTENTS IN SHEEP'S MILK FROM POLLUTED REGION IN R. OF MACEDONIA

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Key words: Lead, Cadmium, Zinc, Sheep's Milk

Environment pollution with heavy metals appears to be more frequently a serious danger for human and animals health. There are many pollution sources, among which most important are traffic and industry. In certain regions dominant pollution sources are bloomer’s for colored and toxic metals. In this study, during the year 1999, some examinations were undertaken on the lead, cadmium and zinc content in sheep's milk. Samples were collected from animals that were grown in Vales city region where lead and zinc bloomer is settled. Two groups of animals were observed: the first was contaminated one, that was farmed on sites 1-5.5 km away from the bloomer, the second one was from places 14.5 to 20 km away from the pollution source.

Lead and cadmium concentration determination was performed with electrothermal atomic absorption spectrometry (ET AAS) on Perkin Elmer 1100 B instrument, equipped with HGA 700 graphite furnace. Zinc concentrations were measured by flame atomic absorption spectrometry.

Lead, cadmium and zinc content in sheep’s milk from the polluted sites was to be 0.047-0.090 mg/L, 0.002-0.006 mg/L, and 5.00-7.66 mg/L respectively. The contents of these metals in the sheep’s milk samples taken from unpolluted sites were found to be 0.002-0.028 mg/L for lead, 0.000-0.001 mg/L for cadmium, and 3.67-4.72 mg/l for zinc.

References: