AN INTRODUCTION TO HEAVY METALS IN FOOD STUFFS

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Abstract: *The main source of micro elements is agriculture and food processing methods where are the reasons of heavy metals being present in the food stuffs. While national and international laws have regulated a critical limit in the field of heavy metals such as copper, iron, mercury, cadmium. Controls of microelements are too important due to the role of them in humans' diet. More pure, less being present heavy metal highlights a point that the purity percent in production of something is a critical factor in reducing heavy metals accumulation on the body. The presence of heavy metals like arsenic, mercury, cadmium in foodstuffs such as white sugar is commonly less but it must be noted that some heavy metals are technically important . The amount of these elements can be considered as a parameter in evaluation of sugar beet filtration and crystallization of sugar beet. In evaluation of heavy metal, two analytical methods including atomic absorption and volumetric methods applied.*

Key words*: heavy metals, sugar beet, white sugar, atomic absorption spectrophotometeric*

Introduction

Control of heavy metal is of important from the viewpoint of amount due to their critical roles in human diet. Medically, poisoning classified in 4 groups; 1) infectious with heavy metals.2) poisoning with radioactive material. 3) Food poisoning. 4) Drug poisoning. the main goal of this article is to explain the heavy metals and the way we can evaluate them. This group of metals contains those with high atomic weight and acts as element and

has high density. Since before white sugar production, sugar beet must be cultivated sufficiently thus the evaluation of heavy metals in sugar beet is of importance. Currently food is the main source of toxic elements. Food habits and food process technology can affect in uptake of these elements through foods. Control of the size of sugar particles is important as a result of being fundamental especially in children and aged people. White sugar contains lots of impurity particles depending on the quality of sugar beet or sugar cane. The amount of these particles revealed the nature of physiochemical properties as well as the uptake of these elements through storing parts of plant.The toxicity of cobalt in amount of 3 mg/kg of body may not show any dangerous risk however in more doses can result in respiratory diseases.

Sugar beet is one of the main agriculture crops that recently has been remarkably considered via improving the quality of soil and the way it is processing to produce white sugar. Cobalt is essential for human and animals feeding. This element develops lots of vital activities in plants and human, moreover the hormone balance related to water balance in tomato, improvement the quality of wheat and some other plants are its other roles. Cobalt has 4 effects on sugar beet;

- Plant growth
- The affection of Cobalt on the amount of chemical compounds
- The affection of Cobalt on nutrient compounds in root
- The affection of cobalt on the efficiency of sugar beet root

Mercury is another heavy metal finding in environment as a result of human activities such as burning of fuels, using pesticides can increase the amount of mercury. But mercury developmentally has been increased in environment so that the risk of its present in diet has not been slightly considered. In fact the amount of present mercury range from 3-35µg. the complex network in protein foodstuffs must digest in order to release mercury but in less complicated products like white sugar, the reduction of the contamination of samples is possible. The amount of nickel in foodstuffs has been less regarded and thus recent approaches depicts that in aged people the amount of uptake of these elements are mainly decreasing.

Conclusion

The main problem of heavy metals are their accumulation in the body in a period of time. This may not only cause to reavel different kinds of diseases but also can be a catastrophe for the environment therefore the science should focus on the diets free of heavy metals besides finding new techniques to determine and detect all kind of heavy metals in earliest .

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