Potential Health Risk Assessment from Heavy Metals Exposure Accumulated in Vegetables —Case Study in Vietnam

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ABSTRACT

Human health was considered as a global issue all over the world and gradually attracted social concern. The more development we have, the more health problems we need to address. It can be caused by many different factors such as viruses, bacteria, eating, drinking, smoking, and chemical substances which concerned recently, especially heavy metals which are not only necessary but also dangerous to human health; it can cause acute or chronic effects though a small content of them. Ingestion food accumulated heavy metals is one of main causes making heavy metals enter into human bodies, including vegetables irrigated by urban wastewater. Researching and assessing of heavy metals ' effects on human have been carried out long time ago. Nevertheless, Health Risk Assessment has carried out for the last few decades and still in gradual development. In 2000s, EPA ' s risk assessment principles and practices build on our own risk assessment and make a background for other organizations develop it afterwards. It consists of four steps: Hazard Identification, Dose-Response Assessment, Exposure Assessment and Risk Characterization. This is the main methodology of the study. In addition, applying the Health Risk Assessment methodology to assess the potential health risk from heavy metals ' exposure accumulated in vegetables in Vinh Quynh – Thanh Tri – Hanoi got some results. Regarding to non-carcinogenic effects, all the values of HIs of adults and children were higher than 1, especially HIs of children. With carcinogenic effects, the UCL Risk values was pointed that there was one extra cancer death in 10,000 people exposed with Arsenic in study area. In short, people in study area are potential health risk from heavy metals, which accumulated in vegetables. Key words: Health Risk Assessment, urban wastewater, heavy metals, vegetables, accumulated

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