Lead and Cadmium Absorption Vetiver Grasses on the Landfill at Supanburi Province

Yuthasart Anuluxtipun, Bundit Anurugsa, and Peeraphat Choogumnead

Abstract

Vetiver grass is a heavy metal tolerance plant such as lead and cadmium etc. Because the root system of *Vetiveria spp.* likes a net that is a most adsorption. The purpose of this study was the investigate certain genotypes of *Vetiveria spp*. Five genotypes of vetiver for the example Sri Lanka, Monto, Surathani, Kampangphet 1 and Nakhonsawan are selected to test lead and cadmium adsorption percentage. Results showed that the first order equation which emphasizes on k value. The k value is explaining the rate of heavy metal uptake. Analysis of lead in shoot, k is 0.0763 –0.1004 and root is 0.0933 – 0.1097, for lead nitrate treatment. To analyze cadmium in shoot, k is 0.0375 – 0.0529 and 0.1279 – 0.1406 for root, for cadmium nitrate treatment. And to analyze the interaction of lead and cadmium, in the case of lead analysis in the shoot, k is 0.0701 – 0.0883 and root is 0.0899 – 0.1041. In the case of cadmium analysis in the shoot, k is 0.0280 – 0.0432 and 0.1189 – 0.1320 for root. All of k value can determine for selection the *Vetiveria namoralis* A. Camus can uptake and accumulate the heavy metal in the problem soil areas. *Vetiveria zizaniodes* L. Nash can uptake the heavy metal but less than *Vetiveria namoralis* A. Camus. To determine k value and concentration factor for shoot and root, showed that the *Vetiveria namoralis* A. Camus can uptake and accumulate more than *Vetiveria zizaniodes* L. Nakhonsawan and Kumpangphet 1 are the best vetivers to higher absorption of lead and cadmium from the soil than Sri Lanka, Monto and Surathani.

Keywords: Vetiver Grasses, Heavy Metal Absorption, Heavy Metal