

Somporn Rueangsri 2013: Approach for Reduction of Heavy Metal Accumulation in Vegetable Growing Area: Suburb of Saraburi Province. Master of Science (Soil Science), Major Field: Soil Science, Department of Soil Science. Thesis Advisor: Assistant Professor Savaporn Supaphol, Ph.D. 95 pages.

Increasing in traffic density at suburb resulted in heavy metals contamination in soil and vegetables in growing areas on roadsides. This study was to investigate zinc (Zn), lead (Pb), cadmium (Cd), copper (Cu), mercury (Hg), arsenic (As) and nickel (Ni) at the vegetable growing areas on highway number 3034 in Saraburi province. This research had been set up into 2 experiments. The first experiment was to investigate uptake of heavy metal of 6 varieties vegetable are mint, holy basil, chinese cabbage, pakchoi, chinese kele and water spinach. The results showed that uptake and accumulation of the heavy metal were Chinese kele chinese cabbage pakchoi and water spinach are uptake and accumulation of Cd and Pb exceeding the Codex Alimentarius Commission standard (0.3 mgkg^{-1} for Pb and 0.2 mgkg^{-1} for Cd). However, water spinach shown uptake and accumulation Cd exceeding the Codex Alimentarius Commission standard. Experiment II study was conducted to evaluate the reduction of uptake and accumulation Cd and Pb in fourth vegetable are shown uptake and accumulation exceeding the Codex Alimentarius Commission standard. Experiment design are 9 treatment such as compost + iron oxide (CP+IO), rock phosphate (RP), Calcium phosphate (CMP), Diammonium phosphate (DAP), Sodium metasilicate (SMC), Rice straw (RT), Zeolite (Ze), Zinc sulphate (ZS) and control. Result shown CP+IO and RP provided the most effective method of reducing accumulation of both Cd and Pb in the fourth vegetable.

Student's signature

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