

Abstract

The study on the influence of soil reaction and organic matter to adsorp and desorp of cadmium was carried out in Rayong province. Pang Nga and Ban Bung soil series were collected at a depth of 0-5, 5-15 and 15-30 cm. Soil reaction as pH values are 2.50, 6.50 and 11.00, and added organic matter of 1 %, 2 % and 3 % by weight that are interesting in the treatment. The Freundlich adsorption isotherm explains the behavior of soil adsorption.

From the result showed that soil depth of 0-5 cm is the most cadmium adsorption. The percentage of cadmium adsorbed is 72.58 for Pang Nga soil series and 67.25 for Ban Bung soil series. When the soil pH and added higher organic matter, Freundlich adsorption coefficient (K_F) indicates the ability of higher cadmium absorption. Pang Nga soil series shows a minimum K_F (0.006×10^{-3}) when the soil pH is 2.50, and without added organic matter. On the other hand, a maximum K_F is 38.240×10^{-3} when the soil pH is 11.00, and added organic matter 3 % by weight. Moreover, Ban Bung soil series shows a minimum K_F is 0.024×10^{-3} when the soil pH is 2.50 and without organic matter. On the other hand, A maximum K_F is 31.493×10^{-3} when the soil pH of is 11.00, and added higher organic matter 3 % by weight. In the statistical analysis, the ability of cadmium adsorption in Pang Nga and Ban Bung soil series are not significant different.

Higher soil pH and organic matter impact on reducing the percentage of cadmium desorption. Pang Nga soil series has a maximum percentage of cadmium desorption to cadmium adsorbed (76.048 %) at the soil pH 2.50 and without added organic matter. On the other hand, the minimum percentage of cadmium desorption to

cadmium adsorbed is 1.007 % at the soil pH 11.00 and added organic matter 3 % by weight. Ban Bung soil series has a maximum percentage of cadmium desorption to cadmium adsorbed is 24.641 % at the soil pH is 2.50 and without organic matter. A minimum percentage of cadmium desorption to cadmium adsorbed is 0.602 % at the soil pH 11.00 and added organic matter 3% by weight. Ultimately, the differences of the ability to cadmium desorption capacity of Pang Nga and Ban Bung soil series was statistically significant 0.05.