

## The Trial Using Bio-Product for Reducing Arsenic Heavy Metal in Soil in Grow Organic Vegetables

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**Abstract :** Testing efficacy of a bio-product (bp) to reduce amount of arsenic was carried out in soil which were used for cultivation of organic vegetables, at Watchan Royal Project Development Center, Kulayaniwattana district, Chiang Mai. The test consists of 6 treatments e.g. Tr.1) Control: To underlie the planting pits (pp)with compost; Tr.2) Using bp: To underlie thepp with compost mixed with (+) bp at 100 g/pit; Tr.3) Using bp: To underlie the pp with compost + bp at 100 g/pit and to spray the vegetables with bp at 2 l/20 l of water, once a week; Tr.4) Using bp: To spread the compost bp on the planting area at 3 kg/1 m<sup>2</sup> ; Tr.5) Using bp: To spread the compost + bp on the planting area at 3 kg/1 m<sup>2</sup>and to spray vegetables with bp at 2 l/20 l of water; Tr.6) Using bp: To spray vegetables with bp at 2 l/20 l of water. Result showed that after first trial of pointed cabbage cultivation, only Tr.6 had a small reduction of arsenic; while the others had higher amount of the metal. After second trial of growing red oak leaf, Tr.6 had more reduction of arsenic while Tr.5 and Tr.3 had less reduction compared to Tr.6 but more reduction than the others. In the third trial of growing mustard, very small reduction could be found on Tr.6 and Tr.5 but more reduction in Tr.3. For the fourth (last) trial with cos romaine lettuce: Tr.6, Tr.5 showed most reduction of arsenic to about half of the original amount. So, it can be concluded that this bio-product can help reducing arsenic when using this product by spraying the bp to vegetables at concentration of 2 l/20 l of water once week (Tr.6), or using the bio-product mixed with compost to spread on the planting area at 3 kg/1 m<sup>2</sup> together with spraying the product (Tr.5). The results obtained from continuous planting 4 kinds of vegetables at the same area. The amount of arsenic found in roots and stem is very small in the 4 vegetables.

**Keywords :** organic vegetables, bio-product, arsenic, soil

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