

Phattrasaya Kaewmanee 2008: Study on Municipal Solid Waste Compost by Concrete Box Technology of Phlap Phla Narai Municipality Amphoe Mueang Changwat Chanthaburi as Growing Media for Chinese Kale and Chinese Radish. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Assistant Professor Suthep Thongpae, Ph.D. 159 pages.

The use of Municipal Solid Waste Compost (MSWC) by Concrete Box Technology of Phlap Phla Narai Municipality Amphoe Mueang Changwat Chanthaburi was studied as growing media for Chinese Kale and Chinese Radish. The objective of this study is to determine the effect of MSWC and chemical fertilizer on the yield and heavy metal uptake by Chinese Kale and Chinese Radish. The experimental design was 3x3 factorial in CRD with two main factors and three replications. The first factor was MSWC at the rate of 0, 1 and 2 ton/rai and the second factor was chemical fertilizer (15-5-20) at the rates of 0, 30 and 60 kg/rai.

The results indicated that, at harvesting stage of Chinese Kale, all application rates of MSWC and chemical fertilizer showed highly significant increment of plant height, fresh weight and dry matter weight. The interaction of these two factors on fresh weight and dry matter weight were also highly significant, but not for plant height. For the above ground of Chinese Radish, all application rates of MSWC and chemical fertilizer showed highly significant increment of fresh weight and dry matter weight. However, the interaction of these two factors on the fresh weight and dry matter weight were not significant. As for the tuber of Chinese Radish at harvesting stage, the application of MSWC and chemical fertilizer showed also highly significant increment of length, fresh weight and dry matter weight. The interaction of these two factors on the length and fresh weight of tuber were also highly significant. As for the concentration of heavy metal in Chinese Kale and Chinese Radish were lower than the critical level. This experiment indicated that the MSWC by Concrete Box Technology is the way to reduce the quantity of municipal solid waste and its environmental problem. The MSWC can also improve soil properties for agriculture. The comparison of MSWC with chemical fertilizer, the results indicated that 2 ton/rai of MSWC and 30 kg/rai of chemical fertilizer gave the same fresh weight of plants. The application 2 ton/rai of MSWC incorporated with 60 kg/rai of chemical fertilizer gave the highest fresh weight of Chinese Kale, the above ground and the tuber of Chinese Radish.

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