

Use of Fruit Beetles, Waxworms Larvae and Tiger Worms in Waste Conditioning for Composting

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Abstract : In many countries, cow dung is used as farm manure and for biogas production. Several bacterial strains associated with cow dung such as *Campylobacter*, *Salmonella* sp. and *Escherichia coli* cause serious human diseases. The objective of the present study was to investigate the use of insect larvae including fruit beetle, waxworms and tiger worms to improve the breakdown of agricultural wastes and reduce their pathogen loads. Fresh cow faeces were collected from a cattle farm and distributed into plastic boxes (100 g/box). Each box was provided with 10 larvae of fruit beetle, Waxworms and Tiger worms, respectively. There were 3 replicates in each treatment including the control. Bacteria were isolated weekly from both control and cow faeces to which larvae were added to determine the bacterial populations. Results revealed that the bacterial load was higher in the cow faeces treated with fruit beetles than in the control, while the bacterial load was lower in the cow faeces treated with waxworms and tiger worms than in the control. The activities of the fruit beetle larvae led to the cow faeces being liquefied which provided a more conducive growing media for bacteria. Therefore, higher bacterial load in the cow faeces treated with fruit beetle might be attributed to the liquefaction of cow faeces.

Keywords : fruit beetle, waxworms, tiger worms, waste conditioning, composting

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