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THE POTENTIAL OF EARTHWORMS IN RECYCLING VEGETABLE REFUSE

J. SAMARANAYAKE AND S. WIJEKOON

Department of Zoology, Faculty of Science, University of Peradeniya.

About 2/3rds of vegetable are destroyed before and after harvesting without any benefit to the farmer. These also become major pollution factor in farms, vegetable markets in cities as well as in kitchens. The conversion of vegetable refuse by earthworms in to organic manure or vermicompost is receiving much attention at present. It holds a great deal of promise for the future in sustainable agriculture and land clearance without environmental hazards. This is a very easy and effective method of recycling vegetable refuse and plays significant role in building up soil and improving the soil. Studies on three Sri Lankan earthworms, *Periyonix excavatus*, *Eisenia foetidae* and *Eudrilus eugeniae* have shown them to be very efficient species in the recycling of vegetable refuse under laboratory condition. They have also been cultured successfully in the laboratory in vermibins which were plastic domestic refuse bins. These bins were prepared in the following manner. The bottom layer of depth of 6 cm was the filter layer of sand and gravel, above which was the mother composting layer earthworms upto depth of 5cm and vegetable scraps to a depth of 10cm were placed above that layer. The air flow, moisture and temperature were kept constant by means of holes for air and drainage. The moisture was retained by covering the compost bed with wet paper. The vermibin can be used continuously by adding vegetable refuses periodically. 10 Kg of vegetable refuse was converted to compost by about 300 earthworms within 40-50 days. The particle size of the vermicompost was much finer than the ordinary compost and the average nutrients were much higher (N,P,K) in the vermicompost and also richer in minor nutrients (Mn, Cu, Zn). Vermicompost can be produced by using other types of organic refuse such as cow dung, tea refuse, Paper pulp, sugar cane refuse and straw. The size of a bin can be variable. A portable vermibin can be used for indoor recycling of organic wastes in homes. However large-scale vermicomposting could be carried out using outdoor tanks and windrow systems. This is widely practiced in India There is a great potential for developing this method in Sri Lanka. It is less expensive, prevents collection of organic garbage and also produces a valuable fertilizer without any health hazards to the community.

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