Vermicomposting-An Effective Technique for Paper Mill Solid Waste Utilisation and Value Addition

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ABSTRACT

A mixture of different papermill solid wastes was used to prepare vermicompost using locally available earthworms. Precomposting of raw materials without worms was found to be essential to prevent later temperature rise above 35 ^{0}C, which would be fatal for the worms. Ideal conditions were, temperature below 35 ^{0}C, pH around 7.0 and moisture content of bed 50%. Good aeration was found necessary. Vermicompost was produced in 60 days. It proved to be very useful for the growth of flowers like Marigold and Dahlia and vegetables like Ladies' Finger. The vermicompost accelerated growth, initiated early flowering and increased the number and size of flowers compared to standard cow dung-urea mixtures. Thus, various waste materials from the paper industry including sludge from effluent treatment could be converted to useful and value added vermicompost by an environmentally friendly technique. The study showed that plant and animal life could actually thrive in a vermicompost prepared from such wastes. The process is simple and effective for solid waste disposal and would be especially useful for rural and less developed areas where most of the paper mills are located. Vermicomposting could become a source of income for the rural folk and reduce environmental pollution at the same time.