IJPS INTERNATIONAL JOURNAL OF PLANT SCIENCES
e ISSN-0976-593X Volume **12** | Issue 2 | July, 2017 | 139-148

DOI: 10.15740/HAS/IJPS/12.2/139-148
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RESEARCH ARTICLE

Production of vermifertilizer from sugar industry wastes by using vermicompost epigenic earthworm

■ **MUTHUKRISHNAN BOOPATHIAYYANAR AND SWAMINATHAN PRABAKARAN**

SUMMARY

The efforts have been made to convert the sugar industry waste into a value-added product, by employing an epigenic earthworm species for vermicomposting eg. *Eisenia foetida*, under laboratory conditions. Sugar industry waste was amended with other organic supplements (Cow dung); and ten types of vermicompost were prepared. Vermicomposting of sugar industry waste resulted in total organic carbon (22.10±0.171) but increment in total nitrogen (20.16±0.142), total potassium (16.76±0.111) and total phosphorus (19.39±0.101) was achieved after 14 weeks of *E. foetida* activity. The C:N ratio decreased with time in all the earthworm worked vermicompost in the range of (1.09±0.110). *E. foetida* exhibited maximum value of mean biomass gain (1091.54±0.481 mg earthworm^{-1}), cocoon numbers (0.80±0.014 cocoon worm^{-1} day^{-1}) in VC_4 treatment. The microbial populations in vermicomposting (VC_4) were enumerated with the dilution plate method, using several media in the presence of earthworms. The microbial populations increased due to earthworm activity. Overall, VC_4 vermicompost appeared as an ideal substrate to manage sugar industry waste effectively and these method can be proposed as a low impute basic technology to convert sugar industry waste into value added vermicomposts.

Key Words : Cow dung, Earthworm, *Eisenia foetida*, Press mud, Waste, Sugar industry

How to cite this article : Boopathiayyanar, Muthukrishnan and Prabakaran, Swaminathan (2017). Production of vermifertilizer from sugar industry wastes by using vermicompost epigenic earthworm. *Internat. J. Plant Sci.*, **12** (2): 139-148, **DOI: 10.15740/HAS/IJPS/12.2/139-148**.

Article chronicle : Received : 24.02.2017; **Revised :** 30.04.2017; **Accepted :** 18.05.2017

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