KALASALINGAM
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Anand Nagar, Krishnankoil, Srivilliputtur (Via), Virudhunagar (Dt) - 626126, Tamil Nadu | info@kalasalingam.ac.in | www.kalasalingam.ac.in

DEVELOPMENT OF LOW-COST ORGANIC MANURE FROM FOOD WASTE FOR THE WELFARE OF THE FARMERS THROUGH EFFECTIVE NATURAL PROCESS

1. PI & Co PI

PRINCIPAL INVESTIGATOR (PI)

Dr. M. Pallikonda Rajasekaran, Professor
Electronics and Communication Engineering
KARE

CO-PRINCIPAL INVESTIGATOR (CO PI)

Dr. S. Vanitha, Associate Professor
Civil Engineering
KARE

2. SDG INVOLVED

Our Project is related to following Sustainable Development Goals: SDG 2: Zero Hunger, SDG 12: Responsible Consumption and Production, SDG 13: Climate Action and SDG 15: Life on Land. In India the production of organic waste is 40% from the total waste generated. Particularly in rural areas, the organic wastes are generated significantly larger compared to inorganic wastes produced. Organic waste primitively consists of food waste, vegetable waste, fruit peels and dry leaves from the home. Unfortunately, if wastes are dumped into open areas causes odour problems, mosquito menace, unhygienic situation, green house emission, soil pollution and water pollution.

The pilot scale pedalled composter consist of shredder, pedal, seat, cylindrical composter with the capacity of 500 litre with small holes with uniform spacing for air circulation, inlet for feed, outlet for manure collection and leachate collector.

The waste from the household is fed in the shredder which is connected to the composter to cut the waste into pieces for easy decomposition or organic matter by bacteria/microorganisms. After introducing the waste, the composter is rotated by pedals which are easy for the ladies particularly they can sit in the seat and rotate the waste easily two to three times in a day. The purpose of mixing is to homogenize the waste in the composter. The bin contains aeration holes for effective supply of natural aeration. Outlet is provided for collecting the organic manure from the composter bin. During decomposition, the leachate is produced that can be fed through soil filled at the bottom of the composter.

3. AIM OF THE PROJECT

The main objective of this project proposal is to develop pilot scale pedalled composter for the village community to initiate effective decentralized solid waste management.

4. OBJECTIVES OF THE PROJECT AND ITS DIRECT RELATION TO A PARTICULAR SDG GOAL

In the Malli Village, the solid waste is dumped outskirt of the village. It creates odour nuisance, mosquito menace, water and air and soil pollution. Another side the people are using chemical fertilizer for their agricultural field. So in this work an attempt is made to develop organic manure through natural process and utilize for their agricultural field. So the land is protected from disposal of waste and the fertility value of soil is increased. It is direct related to Sustainable development goal number 15.

5. DETAILS OF RESEARCHERS @KARE ASSOCIATED WITH THIS PROJECT

FACULTY MENTOR

Dr. M. Pallikondarajasekaran, Professor

Dr. S. Vanitha, Associate Professor

STUDENTS INVOLVED FROM CIVIL ENGINEERING

S. Ramkumar (9920003005)

J. Arockiya John Britto (9821003005)

M. Yuvaraj Panding (9821003007)

6. PROJECT SITES

LOCATION OF SITE: Malli Village

Figure 1 Demonstration of the working process of pedaled composter to villagers

Figure 2: Implementation of Pedaled composter in the Village

7. PROJECT PH.D STUDENTS/MASTERS STUDENTS/UG STUDENTS

UG students

S. Ramkumar
(9920003005)
2020-2024 Batch
Civil, KARE

J. Arockiya John Britto
(9821003005)
2020-2024 Batch
Civil, KARE

M. Yuvaraj Panding
(9821003007)
2020-2024 Batch
Civil, KARE