

STUDY FOR IDENTIFICATION OF SUITABLE COVERING MATERIAL FOR THE STORAGE OF VERMICASTINGS

EP No: 52/2004-05; **Research centre:** Harur Modern Nursery Centre,

Range: Dharmapuri Modern Nursery Range, Modern Nursery Division, Dharmapuri;

Scheme:- JA Research

Introduction:

Vermicastings, the nutrient-rich organic matter produced through vermicomposting, require proper storage to maintain their quality and effectiveness as soil amendments. The choice of covering material plays a crucial role in preserving moisture content, microbial activity, and nutrient stability in vermicastings. Different materials, such as biodegradable covers, synthetic sheets, and natural fibers, have been explored for their ability to protect vermicastings from environmental factors like excessive drying, contamination, and nutrient loss. Identifying the most suitable covering material ensures that vermicastings retain their beneficial properties for extended periods, making them more effective for agricultural and horticultural applications. This aimed to determine the most suitable covering material for storing vermicastings under various temperature and relative humidity conditions. The experiment was carried out at the Harur Modern Nursery Centre of the Dharmapuri Modern Nursery Range during 2004-05 (E.P.No. 52/2004-05). The research focused on evaluating different roofing conditions to optimize vermicasting storage.

Objectives:

1. The primary objective of this study was to identify the most suitable covering material for the storage of vermicastings by analyzing their quality under different temperature and humidity conditions.

Materials and Methods:

Materials:

The experiment involved 162 bags of vermicastings, each initially weighing 35 kg. These bags were stored under six different roofing conditions: polythene sheets (T1), thatched shed (T2), asbestos shed (T3), concrete roof (T4), zinc sheet shed (T5), and open air (T6). Each treatment consisted of 27 bags.

Methods

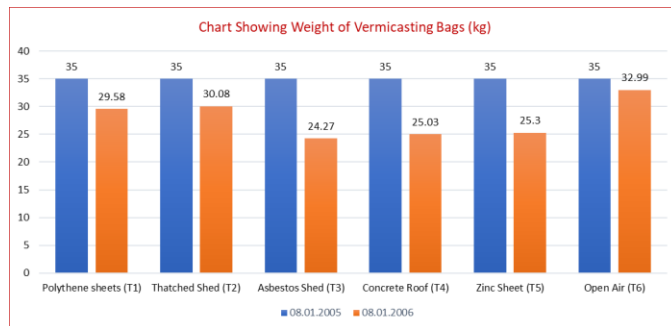
The bags were individually numbered, labeled, and arranged under the respective roofing conditions. The weight of each bag was recorded monthly for one year to assess changes in weight under different storage conditions.

Results and Discussion:

The study revealed significant differences in the weight retention of vermicasting bags under various roofing conditions. The average weights of the bags over the study period are presented in the table below:

Date	Polythene sheets (T1)	Thatched Shed (T2)	Asbestos Shed (T3)	Concrete Roof (T4)	Zinc Sheet (T5)	Open Air (T6)
08.01.2005	35.00	35.00	35.00	35.00	35.00	35.00
08.02.2005	34.39	33.81	32.46	34.74	34.51	34.42
08.03.2005	33.48	33.00	32.65	33.69	33.48	32.76
08.04.2005	32.94	32.67	31.35	32.18	32.00	33.19
08.05.2005	33.20	32.97	29.78	30.84	30.45	34.00
08.06.2005	32.79	30.99	28.80	29.80	29.10	33.45
08.07.2005	31.36	30.47	27.33	28.78	27.38	32.29
08.08.2005	30.15	30.10	25.76	26.94	26.42	31.03
08.09.2005	30.85	32.45	25.03	26.08	26.17	33.27
08.10.2005	30.48	31.04	25.08	24.28	26.42	32.46
08.11.2005	32.44	32.78	23.64	25.67	26.09	34.61
08.12.2005	30.27	30.37	23.15	23.73	25.23	32.77
08.01.2006	29.58	30.08	24.27	25.03	25.30	32.99

The open air treatment (T6) demonstrated the best performance in terms of weight



retention, ending with an average weight of 32.99 kg. This was followed by the thatched shed (T2) with 30.08 kg and polythene sheets (T1) with 29.58 kg. Significant weight loss was observed in treatments involving asbestos shed (T3), concrete roof (T4),

and zinc sheet shed (T5), with final weights of 24.27 kg, 25.03 kg, and 25.30 kg, respectively. The open air treatment's success is likely due to continuous exposure to natural conditions, including rainfall, which may have helped maintain moisture levels. It is also noteworthy that during the monsoon season bags have gained weight. The thatched shed provided a balanced environment, protecting the vermicastings from excessive moisture loss while allowing some airflow.

Recommendation:

Based on the combined analysis of the data, it is recommended that a thatched shed be used as the covering material for the storage of vermicastings. This method provides a suitable environment for maintaining the quality of vermicastings by balancing moisture retention and airflow, resulting in minimal weight loss over time.