

## **Observation and Results**

### **1. Duration of vermicompost production:**

In our experiment the Vermicompost (using *Eisenia foetida*) was prepared in 60 days (from 24<sup>th</sup> February to 24<sup>th</sup> April, 2016). Fig. 5a, 5b, 5c and 5d shows the different stages of vermicompost formation where *Eisenia foetida* was used for the process of vermicomposting. Fig. 6a, 6b, 6c and 6d are the different stages of compost formation.

### **2. Reproduction of earthworms:**

Reproductively matured (Fig. 8) earthworms were observed from 30<sup>th</sup> day of the experiment. At the time of harvesting we observed numerous numbers of immature (Fig.9) earthworms inside the vermicompost.

### **3. Temperature and moisture:**

The ambient temperature of the vermicompost box as measured daily was varied from 22 to 25° C; and that of the compost box was varied from 25 to 32° C.

The moisture content in the vermicompost box was varied between 60 to 70 percent; and that of the compost box was also 60 to 70 percent.

### **4. Fungal growth:**

During the time of vermicomposting no fungal growth was observed inside the vermicompost box (Fig. 7b.). But, inside the compost box fungal growth was observed (Fig. 7a.)

### **5. Harvesting:**

On the 60<sup>th</sup> day we observed the presence of earthworm castings (vermicompost) on the top of the bed. The colour of the vermicompost was black (Fig. 10). Whereas, the colour of the compost was dark brown ( Fig.11). During harvesting the earthworms were separated by using mesh (Fig.12a and 12b).

## **6. Output:**

Our input was 35 kg in each of the boxes (35 kg for compost and 35 kg for vermicompost box). At the end of the experiment, the output of the vermicompost was 16kg (i.e., 45.71%); and the output of compost was 20kg (i.e., 57.14%).

## **7. Growth of plants:**

We used compost and vermicompost separately in three different types of plants (Chrysanthemum, Bhut jolokia and Ladies' finger) to observe the growth of the plants. Plants using vermicompost (Fig.14) showed excellent growth than the plants using compost (Fig. 13).



**Fig.1. Visit to the Kahikushi Agricultural Research Centre (Krishi Vigyan Kendra, Kamrup) (With Director Dr. Dhiren Kalita).**



**Fig.2. Vermicompost unit at Kahikushi Agricultural Research Centre, near Dharapur, Kamrup**



**Fig.3. *Eisenia foetida* that was used in the vermicomposting process**



**Fig.4. Setup of experimental boxes**





**Fig.5a.1<sup>st</sup> Day; Temperature: 25°C**



**Fig.5b. 30<sup>th</sup> Day; Temperature: 25°C**



**Fig. 5c.45<sup>th</sup> Day; Temperature: 22°C**



**Fig. 5d. 60<sup>th</sup> Day; Temperature: 24°C**

**Fig. 5a, 5b, 5c and 5d are the different stages of vermicompost formation where *Eisenia foetida* was used for the process of vermicomposting.**



**Fig.6a. 1<sup>st</sup> Day; Temperature: 25°C**



**Fig.6b. 30<sup>th</sup> Day ; Temperature 27°C**



**Fig.6c. 45<sup>th</sup> Day; Temperature: 30°C**



**Fig.6d. 60<sup>th</sup> Day; Temperature: 32°C**

**Fig. 6a, 6b, 6c and 6d are the different stages of compost formation.**



**Fig.7a. Presence of fungal growth inside the composting box**



**Fig.7b. Absence of fungal growth inside vermicompost box**

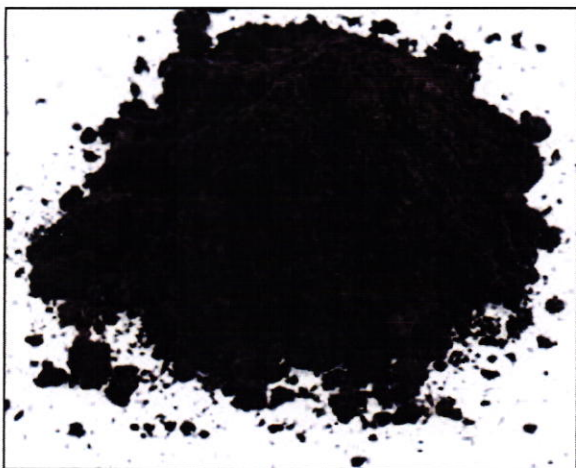




**Fig.8. Matured earthworms (*Eisenia foetida* ) that were observed from 30<sup>th</sup> day of the process of vermicomposting**



**Fig.9. 60<sup>th</sup> Day; Vermicompost with highly reproduced *Eisenia foetida*.**



**Fig.10. 60<sup>th</sup> Day; Vermicompost**



**Fig.11. 60<sup>th</sup> Day; Compost**



**Fig.12a. Separation of earthworms**



**Fig.12b. Sieving of Vermicompost**

**Fig. 12a and 12b are different steps of harvesting.**





**Fig.13. Growth of plants using Compost**



**Fig.14. Growth of plants using Vermicompost**