Garbage digestion experiment

During a period from 19 May 2011 to 29 July 2011, performed a digestion experiment of the garbage under the cooperation of Mrs. Yoshida and obtained the following result.

1. Experiment date 19 May 2011 to 29 July 2011, 5 times repeated.

2. Experiment place Mrs. Yoshida’s warehouse at Ogi city, Saga pref.

3. Experiment Summary

1) Materials Wood Chip, microbe, garbage (food waste), water (at proper), rice bran (at proper)

2) Method Mix Wood chip with garbage (rice, vegetable paring, meat, fish, various side dishes) carefully add microbe. Then pile up conically. Mix top and bottom with a scoop once a day and added water if dry also added rice bran appropriately to keep heat rising. The experiment take 14 days per a period, weighed the garbage and wood chip at the beginning. Weighed the mixture material end of the period.

3) Result

1st time 19 May 2011 to 3 June 2011 (15 days) temperature 17-28 °C

Garbage 33.1 Kg.
Wood chip 37.5 Kg.
Microbe 1.2 Kg.
Total 71.8 Kg. 15 days later 42 Kg.

2nd time 3 June 2011 to 16 June 2011 (13 days) temperature 21-27 °C

Garbage 26.5 Kg.
Wood chip 35.5 Kg. (Decreased 6.5 Kg. from 1st time remain 42 Kg)
Rice bran 0.5 Kg.
Total 62.5 Kg. 13 days later 32 Kg.

3rd time 16 June 2011 to 1 July 2011 (15 days) temperature 22-31 °C

Garbage 32.0 Kg.
Wood chip 38.5 Kg. (increased 6.5 Kg. from 2nd time remain 32 Kg)
Total 70.5 Kg. 15 days later 38 Kg. (120 liters)
4th time

1 July 2011 to 15 July 2011 (15 days) temperature 24-32 °C

Garbage 24.5 Kg.
Wood chip 47.0 Kg. (Increased 9 Kg. from 3rd time remain 38 Kg)
Total 71.5 Kg.(190 liters) → 15 days later → 43.5 Kg. (150 liters)

5th time

5 July 2011 to 29 July 2011 (15 days) temperature 24-32 °C

Garbage 33.5 Kg.
Wood chip 43.5 Kg.
Rice bran 1.0 Kg.
Total 78.0 Kg.(200 liters) → 15 days later → 47.5 Kg. (150 liters)

4. Consideration

1) The experiment of all 5 times shows that the weight of mixed materials decreased to around weight of the Wood chip of the experiment beginning. It’s deduced that almost all of garbage has been disintegrated.

2) Around 80% of the weight of the garbage seem to be the water, but during an examination, the waste are dried too much and even added water. That can be concluded that during the fermentation, all of water has been evaporated.

3) It is supposed that 20% of remaining organic material was digested by a microbe.

4) In all of the experiment (5 times), the amount of the garbage is 149.6 kg and 46.5 kg (about 150 liters) wood chip has been used. However, at the last (5th) experiment shown that only Wood chip remained after fermentation at 47.5 kg. (about 150 liters) but the garbage was disappeared. Besides during experiment, we postscript to add rice bran 1.5 kg and water 19 liters.

5) The odor was not measured by numerical value. The cooperator Mrs. Yoshida who was mixed materials day by day, she did not feel so bad smell.

6) Garbage was not crushed in this experiment. If garbage was crushed before the experiment, it is possible that digest & disappear period is shorter than this experiment.

BIOENERGY corporation
Azuma Masataka
Cooperated by Mrs. Yoshida