
Rapid composting methods: Use of effective micro-organisms (EM)

SUMMARY:

The potential of composting to turn on-farm waste materials into a farm resource makes it an attractive proposition. Composting offers several benefits such as enhanced soil fertility and soil health, thereby increased agricultural productivity, improved soil biodiversity, reduced ecological risks and a better environment. While traditional composting procedures take as long as 4-8 months to produce finished compost, rapid composting methods offer possibilities for reducing the processing period up to three weeks.

KEYWORDS:

[soil fertility](#) [1]

[Composting](#) [2]

[Decomposition](#) [3]

[Aerobic conditions](#) [4]

[microorganisms](#) [5]

CATEGORY:

[Crop production](#) [6]

[Natural Resources Management](#) [7]

COUNTRIES:

Myanmar

DESCRIPTION:

Use of Effective Micro-organisms (EM): EM based Quick Compost Production Process

Since 1999 seven small-scale organic fertilizer plants, using the EM based quick production process have been in operation in Myanmar. They are owned and operated by Women's Income Generation Groups (WIGG). A unit plant consists of nine pits of 6 ft (l) x 4 ft (w) x 3 ft (d) , enclosed by low walls and covered with roof.

Raw Materials:

The raw materials for organic fertilizer production are as follows:

- Cow dung 2 portions
- Rice husk 1 portion
- Rice husk/charcoal 1 portion
- Rice bran, milled 1 portion
- Accelerator 33 litres of EM solution or *Trichoderma* solution per pit.

Preparation of EM solution (accelerator): Firstly one litre of "instant solution" is made by mixing 10 ml EM, 40 ml molasses and 950 ml water and leaving it for five to seven days, depending on temperature. Then the solution is added to one litre of molasses and 98 litres of water to obtain 100 litres of ready-to-use EM solution. This amount is enough for three pits. The EM solution functioning as accelerator reduces the composting period from three months to one month.

Procedure: Firstly, mix all the ingredients, except accelerator. Then make 0.5 ft layer of mixture in the pit and sprinkle accelerator over. Repeat the same procedure until the pit is full. Cover with plastic sheet. Two or three weeks later, mix the whole pit to boost aerobic decomposition. The fertilizer is ready to use a couple

of weeks later. A pit turns out 900 kg of final product per batch, which are usually packed in 30 kg plastic bags. Assuming that it takes 30 days on average to produce a batch and only eight pits may be used for technical reasons, the annual potential production capacity works out to 86.4 tons (0.9 t x 8 pits x 12 months).

SOURCE:

[Food and Agriculture Organization of the United Nations \(FAO\) \[8\]](#)

Country:

Italy

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