



UPLAND HOLISTIC DEVELOPMENT PROJECT

Gardening Activity: Making and Using Compost

- Objective:** To gain skill in selecting, preparing and managing appropriate materials for the production of garden compost.
- Time req.:** **Total time:** Approximately 3 weeks to manage and monitor the composting process from start to finish; **Actual Mixing Time:** 30 minutes.
- References:** *Gardening for Nutrition in the Upland Villages of the Golden Triangle, Rodale Organic Gardening Basics: Compost*
- Materials:** Scales, 20-liter vegetable oil can, three tang (1 tang=20 liters) dry composting materials (chopped rice straw, rice bran, chopped dry leaves, bean pods, etc.); one tang pig manure; ½ tang rice bran; water/IMO (indigenous microorganism) solution composed of 1 teaspoon of IMO liquid per one liter of water, shovel, watering can, sacks or plastic sheets with which to cover the compost.
- Procedure:**
- Step 1 – locating and preparing the materials needed for composting**
- With UHDP personnel, locate the dry composting materials (straw, rice husks, etc.), pig manure, rice bran and IMO. Measure out the required amount of each material needed to make one batch.
- Step 2 – mixing the materials**
- Thoroughly mix the dry materials, pig manure and rice bran. While mixing gradually add the water/IMO solution until the mixed materials are lightly moist (like a moist towel). Materials should be moist enough to be slightly sticky when squeezed together in the hand.
- Step 3 – arranging the compost pile**
- After mixing, form the materials into a pile within one of the compost bins. Cover with sacks or plastic sheets to better conserve the moisture of the compost ingredients.

For long-term trainees (those staying for a few weeks or more) - the temperature of the freshly made compost pile must be monitored each day for the next few weeks. Following the UHDP method, each time the compost pile heats up to approximately 60-65 degrees C (113-158 degrees F), the pile should be aerated by thoroughly turning the pile or by moving the contents from one bin to another. The first aeration may be within 24 to 48 hours of mixing the ingredients. After another 1-3 days, the pile should become hot again, thereby requiring more aeration. Failure to

aerate the compost timely and properly could result in a stalled composting process.

The pile should be turned each time the pile heats up over the next several days. However, over time, the compost will not heat up as much or as often. Still, ideally, the pile should be turned every two or three days over the three-week composting period to maintain proper aeration.

Although it is usually unnecessary to add water, it is important to monitor the moisture level of the compost. If the materials should become too dry, then the compost process could stall. The results will be likewise if too much water is added to the pile.

After the compost no longer heats up, it should be about ready to use. Once the temperature drops below 43 degrees C (110 degrees F), it should be ready to go into the garden.

Step 4 – examining the final product

- Locate some finished compost. Examine its color, feel and smell.

Step 5 – applying the final product

- **On soils needing improvement:** In an appropriate location, apply 2.5 – 4 kg of finished compost per square meter of plant bed. Mix the compost thoroughly into the top 10 cm (4 inches) of soil.
- **On healthy garden soils:** In an appropriate location, apply 1 cm (1/2 inch) of finished compost over a garden bed on which a heavy-feeding crop, such as sweet corn or eggplant, is in need of a mid-season side-dress feeding.

Questions: Why should a proper ratio of carbon-rich dry materials (straw, dried leaves, rice straw, etc.) and nitrogen-rich green materials (animal manure, freshly cut grass, bean vines, etc.) be maintained in a compost mixture?

Why is the moisture level of the compost mixture important?

Why should the compost be aerated when the mixture heats up?

What are the characteristics of quality finished compost?

Why should non-composted, carbon-rich materials not be mixed into the topsoil of gardens?