

# How to cultivate and use native microbes biofertilizer

Soil fertility can be improved by creating a good environment for beneficial soil microorganisms. One way to do this is to develop bio-fertilizers using cheap locally available materials. Forest areas are the best sources of microbes and to collect forest microbes, find an undisturbed forest area and the best time to collect them is during the rainy season when they are most active. Remove the dried leaves on top and collect the leaves that are starting to rot, more so those that have white molds on them. After removing the leaves that have started to rot, remember to replace the dry leaves and try to disturb the forest soil as little as possible.

## Making forest silage

To make forest silage, you will need 1 bucket of biochar, 2 sacs of dry leaves, 3 kg of bran, 500g molasses, or 500g sugar dissolved in 2 liters of water and extra water.

First, make a square trench of side 40 cm and a depth of 20cm and put a layer of biochar on the base of the trench.

Sprinkle the sugar water or molasses and then add a layer of leaves. Keep sprinkling sugar or molasses after each layer.

Put a layer of bran after every few layers of the dry leaves. You may need to add water after to make the mixture moist but not too wet.

Leave the mixture for 30 days and the compost will be ready in 30 days.

## Making solid fertilizer

To make solid organic fertilizer mixture, you need an airtight bucket with a lid, 4 kg of forest silage, 8kg of bran, 2 liters of molasses, and extra water.

Find a suitable place to mix the ingredients and start by mixing forest soil with bran, make a hole in the middle and add molasses and mix thoroughly.

Add extra water to ensure that the mixture is wet but not too wet.

The mixture is put in a bucket and compressed to remove all the air.

After filling the bucket, cover it with an airtight cover. Leave the mixture for 30 days and the mixture will be ready after the 30 days.

## **Making liquid fertilizer**

You need a bucket with an airtight lid, a connector, and a nipple to make a valve, pipe, plastic water bottle, an old pillowcase, 4 kg of native microbes, 4 liters of molasses or 2kg of sugar dissolved in water, 2 to 4 liters of milk, 2 kg of minerals and water.

Put the microbes in the pillowcase and tie the top with a piece of string.

Put the milk into a container, add molasses and some minerals, stir the liquid, and then dangle the pillowcase in the liquid mixture and ensure that its completely wet then top up the cotainer with water leaving a small space.

Put a hole on the cover for the valve, put a connector and the nipple, make the valve and ensure that the valve is airtight.

Put the lid on top of the bucket and attach a horse pipe on the valve at the top of the lid, and into a plastic bottle filled with water.

The valve setup will allow air to leave the mixture but will prevent entry of air into the mixture.

Leave the set up to stand for about 30 days and after, the liquid fertilizer will be ready for use.