

Date:
July 2008

Compost Coffee: A Real Strong Cuppa Jo

Compost Coffee (or Tea) is a brew where microbes are grown and encouraged to multiply, rather than just a food that feeds the microbes already in soil.



Tea bag in brewer

*"Feed the soil
to feed the plant,
rather than feed the
plant."*

*Peter Lundgard,
Grimshaw, AB*

Contacts:

Sarah Davies
(250) 788-1970

Glenn Hogberg
(250) 843-7653

Sandra Burton
(250) 789-6885

Julie Robinson
(250) 787-3241

Overall Objectives

Compost Coffee (or Tea) presents an alternative fertility and nutrient program to the conventional chemical fertilizer. By maximizing the nutrient uptake by the soil microorganisms and increasing the soil biological activity, nutrient levels and plant health are increased. Compost Coffee stimulates healthier soils, which leads to healthier plants.

Soil Biology

Soil biology is composed of 4 essential microbes: Bacteria, Fungi, Nematodes, and Protozoa. Each of these cooters is responsible for soil health and fertility, and plays a different role in the decomposition and health of our soils.

Bacteria: Decompose organic matter and toxins, while building soil structure.

Fungi: Release, recycle, and store nutrients making them more available to plants.

Protozoa: Eat bacteria and makes nutrients more available to plants.

Nematodes: Create soil structure and aerobic conditions, while eating fungi and protozoa.

Without the diversity of microbes in our soils, nutrients would not be made readily available on the soil plate for crops.

Assembling Ingredients

The main ingredients to creating a brew include:

- ⇒ **Fulvic Acid:** a humic extract formed in breakdown of organic matter in soil. It improves aggregation and increases permanence of crumbs already formed.
- ⇒ **Kelpgrow:** a liquid concentrate of the kelp variety of seaweed. It acts as food for microbes, as well as a place for fungi to attach.
- ⇒ **Fish Hydrolysate:** a fish product that has been broken down into proteins and liquefied. It acts as food to feed microbes.
- ⇒ **Alaskan Humus:** a natural compost free of pathogens, chemical impurities, or foreign residues. It is a high source of fungi, needs to be pre-activated for 2-3 days.
- ⇒ **Worm Castings:** the poop from earth worms. They are a high source of bacteria, and have lots of protozoa.
- ⇒ **Molasses:** a readily available food source for bacteria.

Other ingredients can be used, but these are the basic components.

**Published by
P.R.F.A. of BC:**

Box 2229
Chetwynd, B.C.
V0C 1J0

www.peaceforage.bc.ca

**Peace River Forage Association
of British Columbia**





Folic acid, kelpgrow, & fish fertilizer

Equipment needed

For Spraying:

- ⇒ Equipment to transport sprayer
- ⇒ Sprayer that includes boomless spray nozzle(s)
- ⇒ Diaphragm pump (not a geared pump)

For Brewing:

- ⇒ Ingredients for your brew
- ⇒ Brewer tank
- ⇒ Aerator stones and pump
- ⇒ Tea bag
- ⇒ Power source
- ⇒ Water source

Developing a Recipe

The three most common recipes of compost coffee are:

- ⇒ Fungal
- ⇒ Neutral
- ⇒ Bacterial

Ingredients can be added or mixed in ratios to attain the different types of recipes. For example, a fungal recipe would contain more Alaskan humus than worm castings, and would use more fungal foods like fulvic acid and fish hydrolysate.



Peter Lundgard & Matthew George share their compost coffee knowledge.

For information on our compost coffee demonstrations see Forage Fact # 45 & # 46, or visit our website: www.peaceforage.bc.ca

Compost Coffee Process

The compost coffee process involves two main stages: the brewing and the application.

Brewing:

Both the Alaskan Humus and the water in the tank need to be warmed to air temperature. This allows the fungi to become active in the humus, and allows the water to reach a temperature which microbes will be comfortable at. If a fungal dominant brew is desired, the humus should be allowed three days for activation. The tea bag is filled with the desired amount of Alaska humus and worm castings, and an aerator stone is placed inside the bag. The tea bag is then placed inside the water tank. Another aerator stone is placed inside the water tank for ample aeration. Any dead spots, that is spots where oxygen is lacking, will decrease the number of microbes produced and may result in undesirable microbes being produced. The food (fish hydrolyze, kelp, molasses and/or fulvic acid) is added to the water and aeration begins. The brew is aerated for 24 hours before application. Adding oxygen maximizes the desirable microbial communities and shortens the brewing time.

Application:

Application of the brew must occur within 12 hours of stopping the aeration. A diaphragm pump is one type of pump that can be used for application, because it is gentler and easier for microbes to pass through without squishing. A geared pump could cause significant decrease in bacterial/fungal numbers. As well, a boomless sprayer nozzle is used so that the brew is not forced through a small space. This would also cause bacterial/fungal death. Nozzles with screens are easily clogged by the food and compost debris, and if one is used it should be greater than 400 mesh. The compost coffee is then sprayed on the desired field location, and can be either a soil or foliar application. This will either affect the soil or the plant immediately, depending on which application is chosen.

Compiled by: Kim Schlaepfer, Vicki Moser, Sandra Burton, & Julie Robinson in July 2008
Compost, Compost Tea, & Manuring Project Funded in 2008 by:

Peace River Agriculture Development Fund

With contributions from: Rainey Ranch, Hogberg Ranch, Pacific Soil Analysis, Soil Foodweb Lab, Arnold Mattson, Shannon Hall, Peter Lundgard, & Barb Barringham

Forage Facts Funded by: all the donators and supporters at the Forage Goods & Services Auction on Feb 16, 2008