

On-Farm Brewing of Soil-Biology Booster

This creates a brew with a high fungal content which is based on diverse local soil biology. It involves growing a concentrated starter to brew an active biology booster suitable for soil or foliar application. The process takes two to four days and is very low cost. For further information and advice, contact Trevor 0417 196 315 ⁱ.

Preparation of 40 L starter for 1000 Litre brew (For smaller amounts reduce the given quantities proportionally.)

Step 1

- Collect 2 kg of local soil from creek, fence-line, under mulch, away from any chemicals. Use the active layer -1 or 2cm at the soil/mulch interface - from different places.
- Mix thoroughly.
- Store in cool moist area - not too wet or too dry.

Step 2

- Mix the growing medium:
 - 30 L worm casts
 - 10 L Mill Run (bran and pollard, high in minerals)
 - 2 Kg of the local soil mix
 - 500 ml molasses (or 200 g sugar)
- Mix well in dry form.
- Add water till just able to squeeze a drop of water, not wetter.

Step 3

Place the medium 8 – 10 cm deep on a tray with a bottom that allows draining such as a cardboard box, or directly on soil. Cover it with cloth and keep the cloth damp.

Notes:

- It is essential to allow free drainage.
- A slight warming will initially occur.
- If it is compacted too dense or is too wet, it may be lacking air and some parts will not develop fungi and will smell.

Step 4

- Allow to grow 48 – 96 hours in a dark humid place.
- It is ready when fungi cover the growing medium and, when broken apart, the fungi are visible throughout the medium.
- It remains suitable for use for several days.



Two days after starting



Close-up

Brewing equipment for 1000 Litre brew. (Smaller quantities use different ways of brewing and application.)



Materials needed

- Tank 1,000 L pod.
- Pump enough capacity to pump 1 L air / 1 L water / minute.
- Control tap between pump and aerator to adjust air flow rate.
- Pipes 1 length of 40 mmm PVC pipe.
T- pieces, 90° elbows, 45° elbow and end caps to suit your design.

Note: As a precaution we suggest to brew in an open space and use a face mask when inspecting during aeration. Not all soil fungi are human-friendly in high concentrations.

Adequate aeration. Enough air needs to be pumped to give 2 – 8 cm boil on the water surface – a very jumpy surface. A suitable air pump produces 75cu m/hour (or 1,250 L/min) enough for a 1,000 L pod. Drill holes along both sides in each of the pipes at the bottom. Place these sideways to give complete agitation at all bottom corners of tank.

Brewing

- Mix into 1000 L non-chlorinated water: 2 L fish emulsion, 4 L Seaweed, and 4 L Biology Booster. Biology Booster consists of sea-minerals and humic acid.
- Soak 40 L starter for only 10 minutes, break it up by hand and add to the tank.
- Brew for 24 – 48 hours prior to application - assess development under a microscope.
- Apply within 3 - 4 hours after stopping aeration; the biology starts dying without oxygen.

Field Application for a 1000 Litre brew

Apply 80 – 200 L / ha of brew plus as much water as practical.

- Strain the brew after brewing and remove any restrictions in application equipment.
- Minimise any pumping - the lower the pressure the better (max 60 – 70 psi).
- Keep out of sunlight.

Injection behind coulter places brew about 10cm below the surface away from the sun; direct exposure to sunlight kills the biology.

With adequate moisture, applications 2 metre apart have shown to join within 50 days as fungi, once established, can grow fast.

Address limiting nutrients such as major nutrients, trace elements, micro elements.

Notes: Soils with an already good fungal diversity are unlikely to show a response.
Poor performance of pasture may be due to other limiting factors.



One application technique

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