

## The MOTHER of all composts

**Driving Principle: “A diversity of materials ensures a diversity of microbes.”**

*(This recipe is sized for a group; you can make smaller.)*

- 2 cubic m of ‘brown waste’ which can include a mixture of straw, old weeds, sawdust, wood chip, paper and cardboard.
- 1 cubic m of ‘green waste’ which can include a mixture of hay, fresh cut grass, fresh cut weeds, etc.
- 1 cubic m of high nitrogen materials such as a mixture of manures, old wool, food scraps, etc

To the above we will add the following to build up minerals and trace elements and to make a best case compost we can also ‘inoculate’ with the Aerobic Tea (Probiotic) Solution.

- 10kg of rock dust
- 10kg of rock phosphate
- 10L of molasses
- 10L of kelp powder

Tarp to cover the compost usually about 5m x 5m.

### Some tips and tricks and musings

- Use a welded wire fence to build / contain the compost pile. Welded mesh (not woven) so it does not stretch and 6m in length. The mesh size is 50mm x 75mm and ideally 1m in height. If available, get heavy duty thick wire.
- Create a base of coarse carbon to allow under-ventilation, then stack four brown, three green, two nitrogen, using a wheelbarrow to portion it. Having coarse brown material allows air in so avoid too much paper, grass clipping and other fine carbon that will mat down and form “papier mache”.
- Layering via the four brown (carbon) three green (carbon and nitrogen) two nitrogen ratios with a wheelbarrow allows good control and with coarse material allows good oxygen flow. This is why these compost piles should only need to be turned every 10 days; about five times and it should be done. Over this duration, keep an eye on moisture levels; it must be kept moist to allow the pile to ‘cook’ properly.
- As the centre of the pile is the hottest part, ensure that when turning, the cooler outer edges of the pile get turned in to the centre to ensure the correct temperature for killing weed seeds and possible pathogens.
- Finished compost can be kept for 3-6 months in a dark, moist environment. The bugs hibernate and can be reenergized. However, as with everything the sooner you use it the better.
- It’s worth the effort because compost is a 7-10 times more efficient use of the plant nutrients than if it was just manure being applied to the soil.

## Aerobic PROBIOTIC solution (compost tea)

- 200L drum, plus air pump, diffusers, • compost bag or use a small bucket and scale volumes accordingly.
- 150L de-chlorinated (drinking quality water)
- 5L 'Mother' compost (add to bag)
- 1L of liquid fish hydrolysate (fish emulsion is ok but hydrolysate better)
- 2L liquid kelp (must be liquid as used in 24hrs or add to bag)
- 5L worm farm juice or 1L liquid humate (alternatively 1L Humic crystals from NutraTech plus 200ml hydrated lime makes pure Humate)
- 100ml molasses
- 1kg oat or soya flour

Add the strong (high / low pH) microbe foods to the de-chlorinated water first to avoid killing your compost inoculants.

The aerated compost tea is a 24hr spa bath party for microbes. The complex array of microbes from the Mother pile compost are immersed into lots of food, get drunk on oxygen, and they breed like rabbits...or microbes. No-one likes a spa over 30°C or under 20°C and microbes are no different.

Point aerator tube / pipe holes down if you want to agitate compost that sits in the bottom of the vessel. The bubbles should look like a spa bath, not fizz. Fizzing will kill microbes.

Try to achieve an oscillation / rotation of water within the brewer via the aeration process. For probiotic teas to be effective there needs to be soil (not sand). Realistically you need 2% organic matter in the soil and 600ml of rain a year to get results.

Probiotic compost tea is an effective foliar spray as the microbes coat the leaves and protect them, hence apply in cooler times of the day to allow microbes time to create a protective skin. Similarly, in the soil, microbes create soil structure and aerate as they need air to survive.

Application methods need to have gentle pumps, Honda high vol / low pressure or a diaphragm pump. 65psi is maximum pressure before your microbes die. An electric CP-25 Monopump 750W is good.

Nozzles for sprays need to be at least 1mm as microbes have biomass and will block them.

Repeat applications are recommended because as the seasons change and your soil structure changes, the environment the microbes have to live in changes. Thus at the start, even though all species are in your aerated tea (probiotic), only the strongest "pioneer" species might survive, once their work is done, the next application the soil will be much more friendly. Similarly, as the seasons change the soil from hot and dry to cool and wet, different species of microbes will like it and colonise.

While advising to repeat the application often looks like an excuse to sell more 'product', in this case it's necessary to get the best results. Applying a new batch every three months (seasonal) for three years will achieve soil regeneration to the way it was before we broke it.

## Bio-fertiliser as a cold ferment

*(Based on the work of COAS.com.mex)*

This is an anaerobic process, simulating the stomach of a cow, hence the use of fresh manure or rumen. It **MUST** have a perfect air lock that will last 2-4 months without leaking. Take time to get it right. Once you think it's right, squeeze the drum and make sure your air lock bubbles.

- An airtight 200L drum with an air lock (must remain air tight for 2-4 months)
- 150L de-chlorinated (drinking quality water)
- 50L fresh cow manure
- 2L fresh organic full cream milk (if you can't get non-pasteurized organic, then add a litre of good yogurt to full cream milk)
- 2L molasses (not more else the • resultant alcohol can kill microbes)
- ½ rumen (the green stuff in cows first intestine) or 50L of fresh cow manure
- 3kg wood and bone ash (50/50 if possible, but the bone dust is optional – if not using, just use more wood ash)
- 0.5kg fresh yeast or 25g dry yeast (bakers or brewers)
- 1L worm juice (optional)
- 4L kelp (dry powder used for animal supplement)
- 2kg fine rock dust (optional)
- 1kg rock phosphate (optional)

### Tips

- Dechlorinate water.
- Add manure to drum first to avoid splashback.
- In a separate bucket, add ash to water then add kelp, rock dust, phosphate and make a slurry.
- Mix the manure and other stuff in the drum before doing the air lock and lid up.
- Leave about 200mm free air pocket to the lid to avoid spills and air lock blockages.
- Place pipe in the top above bio-fertiliser but place the air lock bottle below the water level to avoid siphoning. Hang it on the side.
- If you open the bio-fertiliser later to inspect (avoid if possible), you can expel the air / oxygen by adding 0.5kg fresh yeast or 25g of dry and 0.5kg molasses.
- Don't put anything in the drum that a cow would not eat! (Except the cow manure)
- The water must be drinking water quality, not too salty etc.