



*Ecological Garden
Primer Recipes*

Jessica Smith

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Potting Soil Mix

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- In approximately equal parts:
 - 1: 5 gallon bucket Compost
 - 1: 5 gallon bucket Good soil/Top Soil
 - 1: 4 - 4 1/2ish gallon bucket Sand - coarse (little less than the rest)

- Optional, but recommended:
 - Leaf mold (also equal part)
 - Broad Spectrum Fungal Inoculant (see product directions, 1/2 tsp)
 - 1/4 cup Kelp Powder
 - 1-3 lbs Rock Dust
 - 1/4 - 1/2 cup Humates
 - 1 Tbsp Sul-Po-Mag
 - 1 Tbsp Gypsum
 - 1 Tbsp Azomite Trace Minerals
 - 1/2 tsp Sea Salt
 - 2 Tbsp High Calcium Lime or Calcitic Lime
 - 1 Tbsp Greensand
 - 2 tsp Granulated Molasses
 - 2 Tbsp Cricket Frass

- Mix it all up in a wheelbarrow, fill your flats, and moisten with a “Welcome to the World” tea. Ready to plant!

2

**Welcome to
the World Tea**

Welcome to the World Tea

- **My quick and dirty version:**

- Concentrate:

- 4 cups warm water
- 1 tsp molasses
- 1 tsp kelp powder
- 1 tsp rock dust
- ½ tsp Sul-Po-Mag
- ½ tsp Greensand
- ½ tsp Humates
- ½ tsp Gypsum
- ½ tsp Calcitic Lime
- ½ tsp Azomite
- ⅛ tsp Sea Salt

- Mix concentrate with 2 gallons of water and use this to moisten your potting soil, use excess to water all your other plants.

Soil Amendment

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Soil Amendment

Soil Amendment Recipe:

- 4 lb Rock Phosphate
- 4 lb Greensand
- 4 lb Azomite
- 4 lb Calcium Carbonate
- 4 lb Gypsum
- 2 lb Sea Salt
- 2 lb Kelp
- 4 lb Humates
- 2 lb Alfalfa Meal (Non-GMO)
- 6 lb Compost
- 4 lb Sul-Po-Mag

Mix it all together in a wheelbarrow and then put in a sealed container for storage. Take your needed amount out and mix in the wheelbarrow with appropriate amount of rock dust and any extra amendments and apply necessary amounts in Fall or Spring.

Rock dust application recommendation: 5-15 lb/100 sq. ft.

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**Foliar Spray / Fall Nutrient
Cycling Boost Spray**

Foliar Spray/Fall Nutrient Cycling Boost Spray

Kick start the nutrient cycling process for spring by stimulating soil biology with a foliar spray/soil drench:

- **Foliar Spray and Fall Soil Drench:** (covers 1,000 sq. ft. and could be allowed to sit for a few hours before spraying in order for the microbes to start breaking down the other ingredients.) - each brand may be different, so check labels.
 - Base mixture:
 - $\frac{1}{3}$ cup EM or another microbial product
 - 1 cup sea minerals or $\frac{1}{4}$ tsp sea salt
 - 1 cup liquid fish hydrolysate
 - 4 tsp liquid kelp
 - $\frac{1}{3}$ cup of molasses (dissolved in warm water first (from below water))
 - 4 gallons of water
 - 2 cups compost tea or more
 - $\frac{1}{2}$ tsp humic acids
 - $\frac{1}{2}$ tsp Azomite
 - 2 tsp rock dust
 - Specific micronutrients you want to incorporate based on soil tests
 - Optional: $\frac{1}{3}$ cup Indigenous Microorganisms or other broad spectrum inoculant.
 - Optional: $\frac{2}{3}$ cup liquid calcium
 - Start with the water, add any micronutrients you are using, followed by molasses and biostimulants and then microbial inoculants.

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Some DIY Instructions

Fish fertilizer:

1. Buy a fish. TIP: Any kind of fish will work. In fact, you might as well use trash fish, or fish discards like fish heads, guts, etc. I like to use whole fishes though as I think that makes for a better product.
2. Now, ideally you would throw the fish into a blender to mash it up into little pieces. I cut my fish into 8ths or so and then chuck it into my kitchen blender. If you're squeamish, buy a separate blender for this, just make sure it is powerful. Remember, the finer the fish bits, the more effective the fermentation.
3. Add water. You can use a simple guide of 3:1 – 3 parts water to 1 part ferment material. 1 roughly 8in tilapia comes to about 500mL when ground up, so add about 1500mL water. TIP: ALWAYS USE NON-CHLORINATED WATER. Chlorine kills microbes. Simply let your chlorinated tap water sit for several hours, allowing the chlorine to dissipate. I let it sit overnight generally.
4. If you are using a blender, blend up the mixture. The water helps keep it loose so it blends much better after you add the water.
5. Add lacto bacilli/yogurt/EM to blended fish mixture. I use 2 Tbsp per L. You can use more or less if you want. 2 Tbsp/ L is plenty though.
6. Add 1/3 parts sugar. This should be 1/3 the amount of fish you've added. Sugar will be either molasses or normal cane sugar. If using sugar, the equivalency is about 1KG sugar = 1L solution. So if you have 500mL like my tilapia, you want 1/3 of that in sugar. You'd use about 167g sugar, or roughly $\frac{3}{4}$ cup.

7. I blend the whole mixture up a bit. It's good to have it as fine as possible.
8. Now you have liquefied fish, sugar, and lacto. Pour this mixture into a container. Loosely cover the container. No need to seal, because the container will explode as CO₂ is released by fermentation. You just want to make sure other things don't get into it. I use a container with a lid and loosely screw the cap on top (just make sure you don't seal it because it WILL explode).
9. The process takes anywhere from 3 weeks to over a month. How do you know its finished? By the smell. You know when it's done when there is no smell anymore. During fermentation there is a nasty smell, but once completed, there will be almost no odor. You can open it, and put your nose right up to it. Take a whiff. Nothing but a faint vinegar smell. Now you know it's done.

You can transfer it to a smaller container. Use a strainer and a funnel to strain the bones and scales out of the hydrolysate. But don't expect a lot. From a whole 8-10in tilapia, you will only get a little tiny pile of bones/scales. They will feel kind of rubbery, not brittle. Throw these in the compost pile or garden, they are excellent fertilizer and microbe food, already inoculated with microbes!

Leave the cap on the strained concoction loose until you see no more little bubbles forming. Then cap it and store it for use as your own natural fertilizer.

How to use this fish fertilizer:

- Mix 2 Tbsp/gal for applications.
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Plants

- Use as a soil drench as opposed to foliar spray.

Inoculate compost to boost fungal population. This is huge – major growth booster of fungus.

Use in compost teas to boost fungal growth, add Nitrogen. Use at $\frac{1}{4}$ strength for this application ($\frac{1}{2}$ Tbsp per gal).

Mix in water when watering plants, as a natural fish fertilizer and to enhance populations of micro-organisms in the soil

Liquid kelp fertilizer spray:

1. To make this liquid fertilizer, pack a container with seaweed or whatever you're using, fill it with water and cover with an airtight lid.
2. Let it sit for a couple of weeks - or as long as a couple of months if the temperature is cold - until a lot of the seaweed dissolves into the water.
3. Siphon the liquid kelp concentrate from a 10-gallon tub (in which you have brewed ~10 pounds of seaweed with water over 5 months) into bottles.
4. Dial in a hose end sprayer to 8 ounces of fertilizer per gallon of water, a dilution ratio of 1:16.

You can also just dilute it in a watering can.

It will smell really bad at first, but once the smelliness has decreased, it's ready to use.

Spray it on your plants until they're dripping, and onto the soil, too.

You can also just spread the seaweed on your soil as a nutritious mulch that will break down quickly, releasing its nutrients.