Recipe for Nutrient-Dense Soil

Probiotic Approach to Fertility: Biochar, Minerals & Microbes

START YOUR OWN 100 square foot TEST PLOT

September 2014

INGREDIENTS

- 5 gallons **Terra Char™** biochar
- 1 pint **Magma Dust** rock powder
- 1 cup **SEA-90™** sea minerals
- 3 oz. microbe inoculant
- 2 gallons structured water
- 5 gallons manure compost

EQUIPMENT

- measuring cup
- stir & blend tools
- 1-gallon water container
- 5-gallon mixing bucket
- application equipment
- tillage equipment

DIRECTIONS

step 1: **MIX** (dry ingredients)

- Divide **Terra Char** evenly between mixing buckets
- Mix **Magma Dust** thoroughly into **Terra Char**,
- Stir constantly & sprinkle dust thinly onto biochar
- Rotate & stir bottom to top to blend completely

step 2: **DISSOLVE** (wet ingredients)

- Set aside 1 tablespoon of **SEA-90**
- Add remaining **SEA-90** to 1-gallon of water
- Stir slowly in vortex until all crystals dissolve

step 3: **CHARGE** (ion activation)

- Spray 1 quart of **SEA-90** solution onto **Terra Char**
- Stir & fold **SEA-90** solution slowly into **Terra Char**
- Repeat stirring three more times
- Let sit overnight to thoroughly absorb water & ions

step 4: **INOCULATE** (microbes)

- Add 1 Tablespoon of **SEA-90** to 1-gallon water
- Add microbial inoculant to water
- Stir vigorously in a vortex, let sit 10 minutes
- Spray 1 quart onto **Terra Char** in buckets
- Rotate & stir bottom to top to blend completely
- Repeat 3 times until all inoculant water is absorbed

step 5: **INCUBATE** (colonization)

- Add 5 gallons compost to charged **Terra Char**
- Blend thoroughly, stirring bottom to top
- Place in warm, shaded area for colonization to occur
- Provide adequate aeration into bucket & mixture
- Let sit in shade, undisturbed 2 days, up to 2 weeks

step 6: **APPLICATE** (into soil)

SPREAD

- Broadcast on surface of 100 square feet of soil
- Target application to be seeding or transplant row
- Till in immediately after spreading
- Achieve thorough, intimate mix with soil particles
- Mulch & water lightly to keep cool and moist

NOTES & COMMENTS

step 1: **MIX**

- **Terra Char'ge** rockdust supplies trace elements & crystalline energy
- **Rock minerals** are "micronized" powder for maximum surface area, intimate blending, optimum soil spread, rapid microbe digestion
- Blend dry ingredients slowly, thoroughly for complete, intimate mix
- **Rockdusts** widely vary in type, geology, chemistry, quality & source granite, basalt, lava, limestone, gypsum, rock phosphate, clay, etc.
- Nitrogen fertilizers are volatile, but can be blended into char; preference is dry, slow release forms to benefit bacteria
- [Option] sprinkle dry microbe inoculant.

step 2: **DISSOLVE**

- Use only use natural, unchlorinated water, preferably structured water
- Use no-chlorine water; if unavailable, use **Terra Char** to filter out chlorine
- Water can further be energized for optimum use in biological systems
- [Option] sprinkle sea minerals all through biochar as dry ingredient
- [Option] bionutrient metabolite

step 3: **CHARGE**

- Fresh char resists water at first, due to oily tar & resin residues in micropores
- Micropores absorb water gradually, mostly by capillary action
- Biochar's huge internal capacity becomes saturated slowly, often in hours
- Water absorption can be sped up by dissolving ionic minerals in the water

step 4: **INOCULATE**

- Handling & care of living microbe cultures is distinctly different than inert chemicals, and requires close attention to temperature, time, air & moisture
- For maximum absorption & colonization, minimize particle size & optimize surface contact between materials
- [Option] mycorrhizae powder or other dry inoculants

step 5: **INCUBATE**

- Colonization of biochar by microbes can occur in 2 days, up to 2 weeks
- Temperature, moisture, aeration & no disturbance are crucial factors
- Stir, till or any disruption of a colonizing mix will damage mycelium networks

step 6: **APPLICATE**

- Incorporate blended biochar **into**, not **on**, soil, to keep microbes cool & moist
- Best strategy is to band blended biochar and till into main root zone of crop
- Another conservative strategy is to lay into seedbed at or prior to seeding
- For other application strategies, see www.terra-char.com website for details
- **SPRAY (soil & foliar):** use **Terra Char powder** to apply as liquid spray
- **DRIP (fertigation):** use **Terra Char powder** to apply as irrigation liquid
- **DRENCH (root flood):** slurry solution to pour around feeder roots
- **INJECT (subsoil):** keyline or chisel plow to slice soil open, then squirt in **TerraChar'ge** slurry solution (extra water) below soil surface