

RECIPE

# Soil Not Dirt!



Ready in **1 season or less**

Serves **the entire planet**

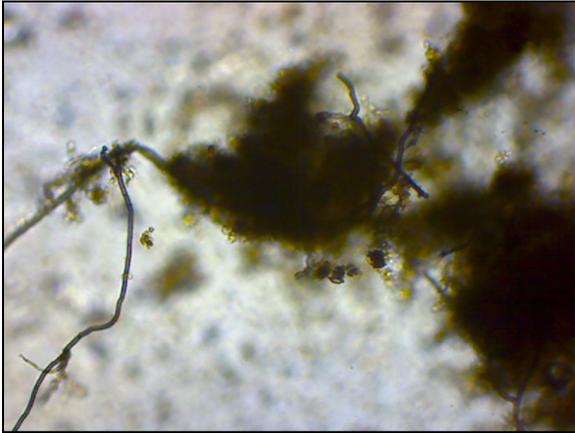
↑ This photo is of a bacteria-eating nematode under the microscope. Nematodes are predators who swim through the soil solution eating bacteria, fungi, other animals, or plants depending on the species. We use certain body characteristics to identify the types of nematodes in a sample; this particular critter has crazy lips, which always give away bacterial feeders!

## Ingredients

- Diverse Living Plant Roots
- Billions of Living Organisms, including:
  - Aerobic Bacteria
  - Filamentous Fungi
  - Protozoa (Aerobic = Flagellates and Amoebae)
  - Beneficial Nematodes
  - Microarthropods, Larger Arthropods, Worms, etc....
- Abiotic Factors like Air and Water
- Organic Matter (left over from dead plants and microorganisms)

## Preparation

1. Start thinking about soil as a massive, super complex living organism
2. Reduce major disturbance as much as possible - microorganisms need *structure* (aka pores and passageways for air and water also micro-habitat) and they build it too when they aren't constantly being turned over and killed
3. Eliminate bio-icides (aka any chemicals that kill living things - pesticides, herbicides, etc)
4. Let your plants feed the microbes that will, in turn, feed your plants: stop using synthetic fertilizers that kill soil life and let the symbiotic relationship that has evolved between plants and soil microbes bloom!

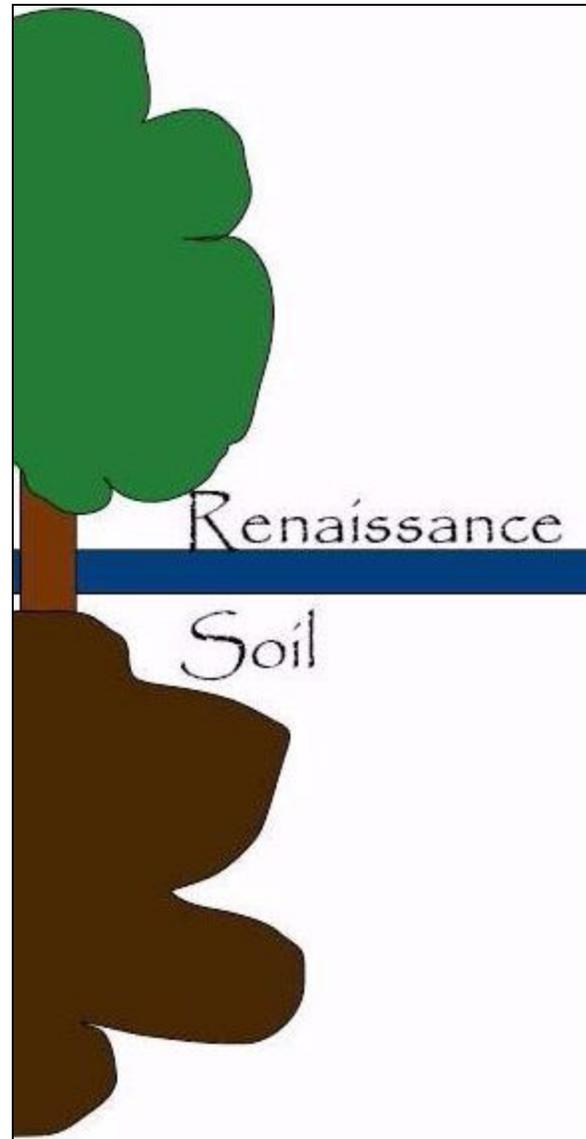


↑ The brown threads coming out of the dark blobs (soil aggregates) are beneficial fungal *hyphae*, or the active growing, eating, reproducing body of a fungus. Fungal hyphae produce enzymes that mine nutrients from rocks and minerals as well as from organic matter.

Fungi store nutrients in their bodies, which prevents nutrient leaching but also prevents plants from taking up those stored nutrients.

For this reason, predator microorganisms like protozoa, nematodes, and microarthropods are essential: when they eat fungi and bacteria, they poop out plant-available nutrients. And because *root exudates* (carbon supplied by the plant) attract all of these organisms to the root-zone (rhizosphere), nutrients are released exactly where and when the plant can soak them up!

Some fungi, known as *mycorrhiza*, get carbon (aka energy or sugars) from plants in exchange for micronutrients and water; an ancient symbiosis!



The world below ground is just as complex as the world above!

Produced by Renaissance Soil

Email: [Revivesoil@gmail.com](mailto:Revivesoil@gmail.com) with comments, questions, or to have your soil tested for biological activity!