



# 8A

## SOIL TECH NOTES

# Actinomycetes

**PROBLEM:** “Somebody actually told me that some bug in the soil makes it smell good. I can’t believe that!”

### INFORMATION WANTED:

- Yes, one of the microbial species in the soil, Actinomycetes, produces a chemical called Geosmin which gives the “earthy” somewhat “clean” smell in newly disturbed soils.
- Actinomycetes have filaments that help form stable organic aggregates in the soil.
- These are a form of bacteria but visually similar to fungi. Form strands of hyphae that permeate the soil and help bind it together.
- Degrade the more resistant parts of the soil organic matter, such as cellulose and lignin.
- Predominantly live in the rhizosphere.

### POSSIBLE SOLUTIONS TO INCREASE ACTINOMYCES IN THE SOIL:

- Cover crops provide the plant diversity which will help to feed these microbes as they do with fungi.
- Avoid as much tillage as possible. Physically destroys the material they feed on.
- Tillage can also produce hard pan in soil, which prohibits air and water movement. Can make the soil surface too dry or too wet for all microbes.
- Watch pH levels, as these microbes like neutral to slightly acid conditions.
- Actinomycetes need moisture, but are aerobic in nature. Residue cover on surface will protect against excessively high soil surface temperatures.

