



# 20A

## SOIL TECH NOTES

# “So how do we mess it up??”

### **EXCESSIVE TILLAGE:**

- Destroys organic matter in the soil by oxidation and can create hard pan.
- Tillage when soil is too wet creates a “puddled” condition with structure units “smeared” together.
- Physically destroys the habitat needed for earthworms, microbes, etc. in the soil

### **OVER APPLICATION OF INORGANIC FERTILIZERS AND CHEMICALS:**

- Can actually destroy microbes because of toxicity, drastic change in pH, etc.
- Can lead to excessive loss of nutrients in saturated drainage water.

### **MONOCULTURE FARMING:**

- Biggest problem is the crop diversity that is needed for healthy soils is generally not present. Surface is colder and wetter.
- With no crop diversity, microbial diversity is also absent leading to many problems including much poorer breakdown of surface residue.

### **SOIL EROSION:**

- Sheet, rill and ephemeral erosion will remove nutrients needed by the crops, will remove in-place organic matter from the soil, and can lead to general decline of soil productivity.
- Small silt and clay particles produced during erosion can physically “clog” soil macro-pores.

### **SOIL COMPACTION:**

- Can lead to soils remaining wet, cause poor air and water movement in surface, and form a root restricting zone in the subsoil.
- Creates a very poor microbial environment for all species.

