USDA
United States Department of Agriculture

NATURAL RESOURCES CONSERVATION SERVICE

18A

SOIL TECH NOTES

Crop Diversity

CONCERN: "I hear a lot about crop diversity or having different crops growing in my fields. What does that do?"

CROP DIVERSITY BENEFITS:

1. Increases total soil organic matter because of added residue and roots.
2. Variety of plants with different growing seasons provides the soil with a living plant during a longer period of time.
3. Roots of added plants also interact with and improve the total rhizosphere affect within the soil.
4. Added roots also provide more opportunities for sugars, amino acids, proteins, organic acids, etc. to be "sloughed off" into the soil environment which adds to the natural productivity of the soil.
5. Each kind of plant has its own variety of microbes associated with it.
6. Diversity supports a broader and more stable food web.
7. More roots, more water infiltration and more air and water movement.

HOW?

Cover crops of all varieties and mixes will provide diversity.

If variety of microbes in the soil exists because of **prior** farming practices, it is imperative to keep that variety present with **current** farming systems.

Excessive tillage, even if cover crops are present, will tend to lower diversity qualitative effects.

Variety can also be as simple as a corn-soybean-wheat rotation. Not as effective as others, but can still add some variety.

No-till farming is an excellent way to add diversity to crop fields. Long term condition in the soil has reaped extensive microbial populations of bacteria, fungi, actinomyces, earthworms, larger microbes, etc. Don't destroy long-term situation!