Introduction to Section 1 (1a – Sustainable Agriculture is based on Building and Managing Soil Health)

**Living Roots** (release exudates)
- **Cash Crop (No-Till Corn)**
- Crop Rotations (the more diverse, the better)

**Harvested and Grazed Crops**
- **Compost**
- **Manure**
- Applied to Crops and Soils (applies beneficial microorganisms & nutrients)

**Cover Crop Cocktail Mix** (e.g., grasses, legumes & brassicas)

**Crop Residue Mgmt.** (i.e., residues of Cash Crop and Cover Corp)

**Exudates** feed the Soil Food Web, which facilitates nutrient cycling.

**Oxygen**, **Soil Temperature**, **Soil Moisture**
- The Soil Food Web makes Water-stable aggregates

**Healthy and Productive Soils** (note: every living organism in the soil is a food source for other Soil Food Web organisms)

**Organic Matter** to feed the Soil Food Web and inoculate the soil

**Planning Considerations:**
- Cover Crops
- Crop Rotations
- Conservation Tillage (e.g., no-till, ridge-till)
- Nutrient Management
- Irrigation Water Mgmt.
- Irrigation System Selection
- Integrated Pest Mgmt.
- Rotational Grazing

Crop roots and Soil Food Web activity are a function of proper aeration, temperature, moisture and nutrient conditions, as well as the carbon/nitrogen ratio of all organic carbon sources.