

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



**Cash Crop (No-Till Corn)**  
Crop Rotations (the more diverse, the better)



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

**Harvested and Grazed Crops**

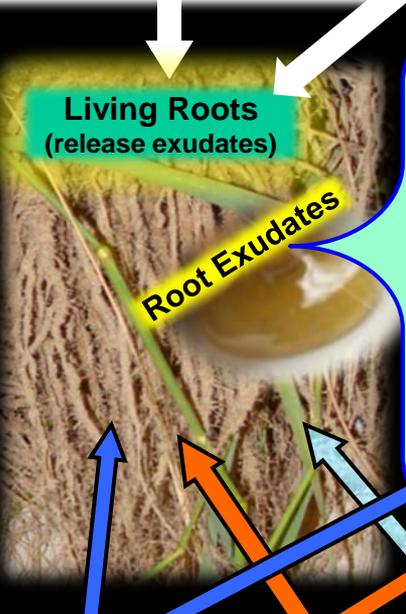
**Emphasis on managing a soil ecosystem (i.e., agroecology)**



**Applied to Crops and Soils**  
(applies beneficial microorganisms & nutrients)



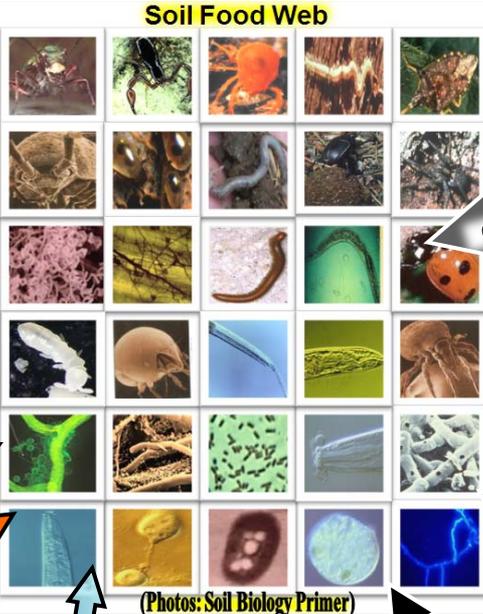
**Crop Residue Mgmt.**  
(i.e., residues of Cash Crop and Cover Crop)



**Living Roots**  
(release exudates)

**Root Exudates**

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



**Soil Food Web**

(Photos: Soil Biology Primer)

**Organic Matter to feed the Soil Food Web**

**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)



**Oxygen**



**Soil Temperature**



**Soil Moisture**



**Compost**



**Manure**

**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.

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