

Lecture 3

Soil management Technology

What are the goals of a good soil management program?

1. High crop productivity and quality

- Good yields
- Make money
- Farms stay in business



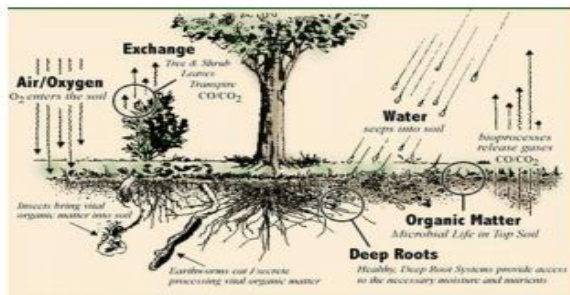
2. High environmental quality and limited human risks

- No chemicals that are bad for animals or people
- Prevent run off and soil erosion
- Recycle nutrients through the system



What are the components of good soil management?

1. The physical soil is healthy.
2. Soil nutrients and pH are balanced.
3. Pests and diseases are controlled.

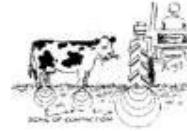


1. The Physical Soil

- You can build soil organic matter through compost and cover crops, which provides:
 - Nitrogen and other nutrients
 - Water and air filtration
 - Habitat for worms and bacteria that break down organic matter



- You can keep soils healthy by properly timed and scaled tillage
 - Helps organic matter break down
 - Reduces soil compaction
 - Exposes more soil for bacteria to break down
 - Increases good drainage



- Irrigate the right amount
 - Maintain moisture at 50% - 100% of field capacity by monitoring the soil and using water retention techniques like mulching
- Engage in crop rotation, soil amending and fertilizing as needed



2. Soil nutrients and pH

- Maintain good levels of nutrients
 - Test soil regularly and add compost or specific nutrients as recommended by soil experts
 - If plants are sick, get them tested
 - Don't leave fields bare and avoid overwatering



- Maintain pH of between 6.0 and 7.0
 - pH can be changed by adding lime or sulfur
- Keep salt levels low



3. Pests and Diseases

- Maintain good nutrient levels and pH – this can help plants stay healthy and strong
- Give plants enough space – enough air and soil for roots to grow and leaves to breathe
- Avoid soil compaction and erosion for good soil moisture



- Rotate crops into different locations to confuse pests and kill diseases
- Plant polycultures - Diversity will reduce pests and disease
- Kill bad bugs when you see them and report disease and use organic controls when necessary; encourage good bugs



A lady bug is a good bug.

