Oklahoma Soil Health Initiative

Ensuring Sustainable Agriculture for the Future

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“…soil is one of our most important resources…it is the factory of our food – and without healthy productive soil, life as we know it would no longer exist.”

“In 1937, President Franklin D Roosevelt wrote…

‘The Nation that destroys its soil, destroys itself.’
“Feeding the world by helping farmers and ranchers improve the health of our Nation’s soil is one of the most important endeavors of our time.”

“…Soil Health Management Systems can help farmers and ranchers feed the world more profitably and sustainably, now and for generations to come.”
NRCS – core strength is soils

Focus on soil health is one of the most effective ways for farmers to increase crop productivity and profitability while improving the environment.
What is Soil Health

- Is soil health new?
  - Soil Health versus Soil Quality

- Soil health is **how well the soil functions.**
  - Infiltrate and hold water
  - Cycle nutrients to water and feed sustain growing plants
  - Filtering of potential pollutants

- Good soil health results in optimized inputs, sustainable outputs and increased resiliency.
**Increased Production** - Healthy soils have improved soil structure, aeration, water retention, drainage and nutrient availability.

- Healthy soils typically have more organic matter and soil organisms
- Organic matter holds more nutrients in the soil until the plants need them.
Increased Profits - Healthy soils can increase farmers’ profit margins by reducing labor and expenses for fuel, and optimizing inputs

- Healthy soils may require less tillage
- Healthy soils aren’t over-reliant upon excessive nutrient inputs to grow crops.
Natural Resource Protection –

- Healthy soils hold more available water, increasing water-holding capacity
- Good infiltration keeps nutrients and sediment from loading into lakes, rivers, and streams.
- Groundwater is also protected because there is less leaching from healthy soils.
Manage more by **disturbing less**

- Tillage is bad? – bare ground, compaction, soil organisms
- Misuse of inputs can disrupt the function and symbiotic relationship of soil organisms
- Allow natural nutrient cycling to take place
**Diversify with crop diversity**

- Plants and plant roots feed soil organisms – in turn help fed plants
- Assure food and energy chains contain multiple species
- Diversity helps with pest and disease problems
Managing for Soil Health…4 Keys

- Grow **living roots** throughout the year
  - Soil organisms rely on living plants
  - Provide plenty of easily accessible food to soil organisms
Keep the **soil covered** as much as possible with plant residues on soil surface

- Erosion control
- Moisture conservation
- Pest control
- Nutrient cycle
Sound Familiar?
NRCS Soil Health Initiative

Objectives

- Provide technical and financial assistance to producers wanting to improve soil health.
- Increased awareness, both internal and external.
- Increase adoption and implementation of soil health management systems.
The Key conservation practices are:

- Conservation Cropping Rotation
- No-till or Strip-till
- Cover Crops
- Nutrient Management
- Integrated Pest Management
- Conservation Buffers/Filter Strip
Key Practice – Prescribed Grazing
- Management of top growth impacts growth below ground

Reduced root growth diminishes...
- the contribution of the root system to soil organic matter
- plant health & above ground biomass production
- nutrient uptake and cycling
- the soil biological community
- Hydrologic cycle
Conservation Districts and NRCS have been and are great partners.

Opportunity to Make Things Happen on-the-ground at the local level, which is key to getting conservation implemented.
Role of Conservation Districts

- Outreach
- Sponsor field days, demonstrations, bus tours, and farmer-to-farmer discussion/support groups
- Learn more about soil health, attend educational opportunities, train yourself to do demonstrations, develop programs...
- Recognize, applaud, support and reward (award) successful soil health ag producers. Spread the good word about them to others.
Other NRCS Activities in Oklahoma

- Partnering with ARS, Noble Foundation, Oklahoma State University Extension and Kerr Center
- Providing input on research needs based on feedback from our producers
- Providing science based training to NRCS and Conservation District staff for planning and guidance to local producers
Teaming with Oklahoma producers on demonstration projects and farms
Creating “Profiles in Soil Health” videos with producers from Oklahoma
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