Soil Health In Tennessee

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United States Department of Agriculture is an equal opportunity provider and employer.
Food for thought...

World population is estimated to reach 9.1 billion by 2050.

To sustain this level of growth, we will need to produce as much food in the next 40 years as we have in the past 500 years.
Food for thought...

Need to optimize inputs

Producers are searching for ways to optimize inputs and maximize profits.
The Changing Landscape of Conservation Assistance

The nation is facing expanding and conflicting environmental, land use, and food production priorities.
Addressing the issues...
Benefits of healthy soils

- Improve water quality
- Regulate water and reduce flooding
- Cycle organic wastes and detoxify noxious chemicals
Soil Health Benefits (continued)

- Increase soil carbon and remove CO₂
- Save energy
- Save water and increase drought tolerance
Soil Health Benefits (continued)

- Improve income sustainability
- Improve plant health; and
- Increase nutrient-rich food production
Soil Health Benefits (continued)

- Improve wildlife habitat and estuarian food production
- Reduce disease and pest problems
Watershed Level Benefits

- Reductions in sediment and nutrient delivery to surface waters decreases potential for downstream hypoxic zone formation.
- Increased infiltration and water holding capacity.
A landscape example...

By **increasing the water absorption** of all of the cropland in the Mississippi River Basin by just **one-half inch** (through improved soil quality), that water retention would be the equivalent of...
A landscape example...

The amount of water that flows over Niagara Falls in 83 days.
Producer Benefits

• Gabe Brown has maximized his inputs, increased profits and has reduced his pesticide application by half.
Benton County

Parker Farms

Cover of Cereal Rye, Radish and Clover
Cannon County
Early Daikon Radish
Carroll County
Brad Cochran Farm
Cover of Rye and Forage Radish
Crockett County
Steve Bailey Farm
Early Daikon Radish
Dyer County
Malcolm Burchfiel Farm
Cover of Cereal Rye and Forage Turnip Following Corn
Fayette County

Jesse Hall Farm

Newly Emerging Cover Cop Flown on Just After Harvest
Gibson County
Wayne Bates Farm
Cover of Rye, Oats, Turnips, Crimson Cover & Winter Pea
Hardeman County

Jesse Hall Farm

Cover of Cereal Rye and Crimson Clover Sown Post Harvest
Hardin County

Karl Forshbach

Sun Hemp Planted on flooded soybean acreage adds nitrogen for future wheat crop
Hardin County

Ricky Essary

Part of 5 year Cover Crop Study

Note: Tracks reduce compaction
Hardin County
Rick Essary Farm
“Discover the Cover” – Counting Earthworms
Haywood County

T&B Farms

Multispecies Cover Crop in Cotton

10/25/2013
Henderson County
Ricky Blankenship Farm
Mix flown on at end of September, photo taken last week of October
Henry County

*Brewer Farms*

Cereal Rye, Forage Radish Flown on Following no-Till Corn
Henry County
Near Jones Mill, TN
Broadcast Cover of Cereal Rye, Forage Radish
Lauderdale County
Peyton Mathis Farms
“We are happy about our soil being covered and looking so green.”
Lauderdale County
Ungerecht Farms

Aerial in
Standing
Soybeans
Macon County
Grass Roots from Pasture with Good Soil Health
Madison County
Johnny Verell Farm
Multispecies Winter Cover Crop
Madison County
Johnny Verell Farm
Continuous Corn with Soil Health Mix applied by Broadcast
Marshall County
Hay Producer, Mike Collins, lets low yield cuttings return to the ground for better soil health.
Maury County

Daryl Brown Farm

Cover Crop Mixture of Radish, Wheat & Crimson Clover
McNairy County
Ricky Essary Farms
Mixture of Clover, Cereal Rye, Oats and Tillage Radish
McNairy County

Ricky Essary Farms

No-Tilled Soybeans Into Chemically Killed Winter Cover Crop
Obion County
Ricky Seals Farms
Cereal Rye and Tillage Radish Following Corn
Sumner County
Cummings Farm
Broadcast Seeded
Sumner County
Russell McGlothlin Farm
Cover in Soybeans
Weakley County
Yarbro Farms
Cereal Rye No-Tilled Drilled into Corn Stalks
Williamson County
Todd Thomas Farm
Five Species Mix Planted 10/11; Photo taken 10/28
Soil Health Works for Everyone!!!
4 Keys to Improving Soil Health

- Reduce disturbance and erosion
- Cover: Green canopy and/or Brown residue
- Living Roots
- Diversity
Resources

- NRCS EQIP: [www.tn.nrcs.usda.gov/programs](http://www.tn.nrcs.usda.gov/programs)
- Google search “Ray the Soil Guy”