

**Madison County  
Soil Conservation District  
313 N Parkway  
Jackson, TN 38305**

Phone: 731-668-1544 ext. 3  
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[www.madisonscd.com](http://www.madisonscd.com)

Chairman, Allen Verell  
Vice-Chairman, Don Johnson  
Sec. –Treas., Joel Haynes  
Member, Bob Bryant  
Member, Don Pearson

Serving to Conserve  
Madison County's  
Natural Resources  
Since 1941



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# NEWSLETTER



MADISON COUNTY SOIL CONSERVATION DISTRICT

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## Newsletter

Volume 16, Issue 1, Summer, 2015

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**Allen Verell**  
Chairman

**Don Johnson**  
Vice-Chairman

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Member

**Don Pearson**  
Member

*The Madison County Soil Conservation District does not discriminate on the basis of a person's race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status.*

*The District is a recipient of taxpayer funding. If you observe an agency director or employee engaging in any activity which you consider to be illegal, improper, or wasteful, please call the comptroller's toll free hotline: 1-800-232-5454.*

# Brad Cochran Recognized as Cooperator of 2014



Brad Cochran of the Spring Creek community in northeast Madison County was recognized as the District's Outstanding Cooperator of 2014. Brad, a graduate of UT Martin with a B.S. degree in plant and soil science, has a keen interest in soil conservation and has worked closely with the District and NRCS to improve the functionality of his soil. Brad believes the key to growing good crops is good, rich, productive soil. He believes that good soil can be built and maintained by keeping it covered at all times, disturbing it less, and by keeping plants growing in it year round.

A good, rich, productive soil has a granular structure with many pores through which air, water, roots, and living organisms can move freely. A soil with good structure has higher soil organic matter, is less compacted, it has greater water holding capacity, greater infiltration, less runoff, less erosion, greater biological activity, greater nutrient uptake capability, and can support field traffic sooner after a rain. Brad recorded a video of his cover crop with the sound turned up. The infiltration of the water sounds like a babbling brook. It is an amazing testament to cover crops ability to soak-up water! Brad has found that cover crops suppress weeds and enhance nutrient uptake; reducing his need for both pesticides and commercial fertilizer. We commend Brad for his conservation efforts and we look forward to working with him in the future.



Brad Cochran's winter cover of Crimson Clover, Rye, Oats, Turnips, and Canola on the day of burn-down to plant soybeans.

# Annual District Awards and Appreciation Banquet 2015

Over 100 guests attended our Awards & Appreciation Banquet including NRCS State Conservationist Kevin Brown. Our guests were treated to a steak dinner. Steve Raper, Senior V. P. over JEA's water and wastewater division, addressed the group with an interesting and informative presentation on Jackson's water supply and water quality.



We thank our many sponsors for making the banquet possible!

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## Conservation Cost-Share Programs Available

**NRCS & TDA** provide funding for conservation work to address erosion and water quality under the EQIP and ARCF programs. Practices include soil health-winter cover crops, gully control structures, livestock watering facilities, grass establishment, cross fencing, and others. It is best if you sign-up before October 1<sup>st</sup>, contact the district office, 668-1544 ext. 3.



**CRP** – Mark your calendar - FSA will have a general CRP sign-up Dec. 1, 2015 – Feb. 26, 2016. However, for those of you that can't wait, FSA has an on-going sign-up for certain CRP practices. These practices include filter strips, riparian forest buffers, bottomland hardwoods, upland bird habitat field borders, and SAFE. The CRP program provides funding to take land out of production and to establish it to soil conserving wildlife friendly plantings, including grasses, forbs, and trees. Funding includes cost-share for establishment costs and an annual rental payment of up to \$185 per acre. For questions concerning CRP contact the FSA office, 731-668-1544 ext. 2.



**WRE** – NRCS has an on-going sign-up for purchasing easements to convert certain cropland back to wetland through the establishment of bottomland hardwoods. Easement acquisitions for Madison County are currently \$2,400/acre for crop and pasture land and \$1,480/acre for woodland. Contact the NRCS field office, 668-1544 ext. 3.



### What's with the Increase of Muddy Water Coming from Crop Fields!

After several years where no-till was the primary cropping system in Madison County one sees more and more land being tilled and more and more muddy water pouring out of crop fields. Vertical Tillage may be a good way to transition from conventional tillage into no-till but if you have been no-tilling vertical tillage is a step back. Vertical tillage is tillage, it isn't no-till. After vertically tilling a corn field in the fall and twice in the spring there is less residue left on the corn field and more erosion than there would be if the field was no-till cotton. Tillage breaks down the soil, it doesn't build it. Sure, crops can be grown successfully using various degrees of tillage but not without problems and not indefinitely. A single tillage, even vertical tillage, after several years of no-till undermines years of soil building. With tillage, one may experience an increased in plant vigor when nutrients are released from rapidly decomposing organic matter, however, the benefits of tillage are small and are short lived. By tilling the soil, one quickly destroys the functionality of the soil and the soil erodes easily. Repeated tillage will deplete soil organic matter and break down stabilizing glues that had formed. The soil will once again become so degraded that crops become dependent on tillage. The more you till, the more you have to till; then we are back to mega soil erosion rates experienced prior to no-till. With even moderate soil erosion agriculture cannot be sustained. The best way to build soil and to increase infiltration is not by tilling but by ***keeping the soil covered at all times*** with crop residue and ***with a diversity of live plants***. Cover crops need water as they grow. The plants open the soil and their roots produce voids for air and water. Organic matter produced from the cover crops enriches the soil by feeding worms and microorganisms. The residue provides protective ground cover that shields the soil from rain drops and retains moisture for crops during the hot dry summer.

The pictures below compare infiltration, runoff, & erosion from vertical tillage, no-till, & no-till with a winter cover crop. The pictures were taken during a rain storm on February 21, 2015 when 2.5 inches of rain fell throughout Madison County.



Corn Residue that had been **vertical tilled** "to conserve water" Note the amount of runoff & the soil that was leaving with it!

Corn Residue **not tilled**, ½ mile from the tilled field, 1 minute later. Note although there is runoff it was clear with no soil.

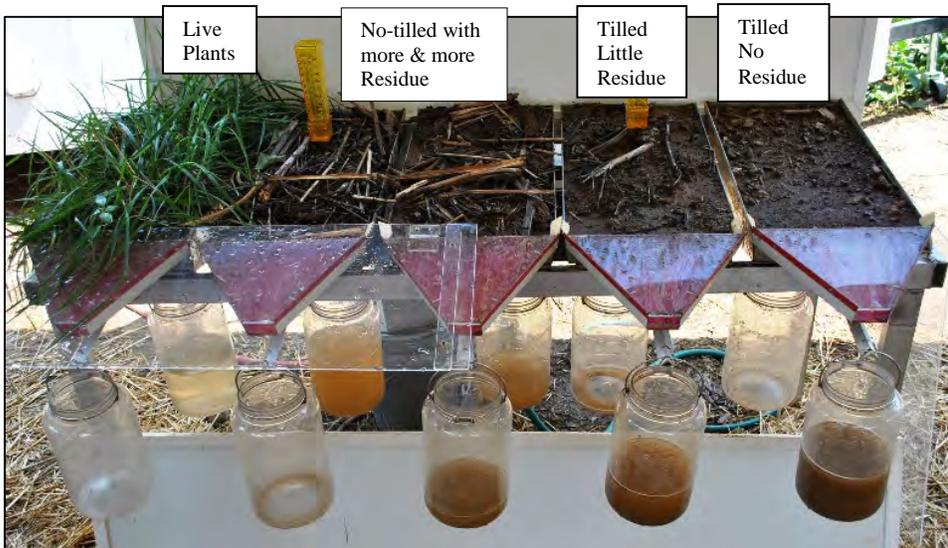
Corn Residue **not tilled, with a winter cover mix**, 8 miles from the tilled field & 20 minutes later. Note there is little runoff and no erosion.

## Local Farmers Meet to Talk Soil

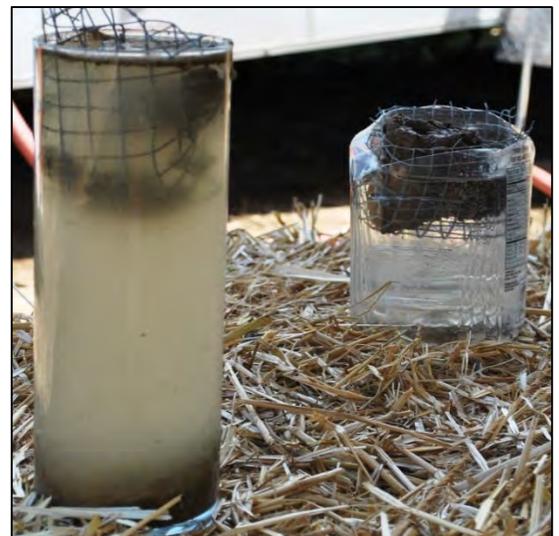


Small groups of local producers meet several times throughout the year to talk about the use of cover crops to improve the functionality of their soil. NRCS has incorporated soil health into its EQIP program providing cost-share to producers interested in using cover crops to enrich their soil. Local producers have enrolled several hundred acres into the program. Come and discuss soil with other farmers who are excited about improving their soil and who are more than happy to exchange ideas and discuss their experiences. Call 731-668-1544 ext. 3 and we will notify you of the next meeting.

If a field's annual soil loss is the thickness of a dime, 8 tons of soil per acre will be eroded away in just one year. At that rate, 1 inch of soil will have been lost in 20 years & 1 foot lost in 240 years. Soil Scientists say it can take as many as 1,000 years for 1 inch of soil to form from its parent material! At a dime loss per year, can our soil remain productive? Can agriculture be sustained?



Above: soil and its groundcover from five different land uses were removed from fields and placed in pans. The pans have holes in the bottom to collect infiltration and chutes out front to collect runoff. Water is sprayed over the pans to simulate rain. Look at the collection jars. The tilled ground has 100% runoff with erosion and no infiltration. The no-till has very little runoff or erosion and lots of infiltration. The land with the live plants has no runoff or erosion and 100% infiltration. This demonstration shows that tillage, ground cover, soil organic matter, and living plants greatly affects infiltration, runoff and erosion. **Cover, Tillage, & Soil Structure Makes a Difference!**



Above: soil from a no-till field and soil from a tilled field were placed on a net in water. The soil from the tilled field broke down immediately while the soil from the no-till field remained intact. This demonstration shows how tillage breaks down the biological components of the soil that produce glues which maintain the soil's structure and keeps it from eroding.