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## *Inside this issue:*

*Ray Archuleta* 2

*FCS Bus Tour* 3

*Calendar Events* 5

*Survey* 6

*SH School* 6

## How Do you Build a Healthy Soil?

Managing for soil health must begin by changing the way you think about SOIL. Although the details of how best to create high-quality soils differ from farm to farm and even field to field, the general approaches are the same.

- ◇ Soil cover by keeping plant residue on the soil surface
- ◇ Diversify as much as possible with 3 or more crop rotation and cover crops when possible
- ◇ Keep plants growing throughout the year to feed the soil
- ◇ Minimize soil disturbance
- ◇ Manage soil fertility
- ◇ Whenever traveling on the soil with field equipment, use practices that help develop and maintain good soil structure.



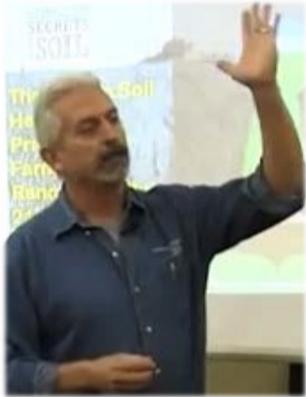
The key to improving soil health is assuring that the food and energy chains and webs include as many different plants and animals as possible. Biodiversity is ultimately the key to success of any agricultural system. A diverse and fully functioning soil food web provides for nutrient, energy, and water cycling that allows a soil to function at its full potential.



If the thought of making changes on your farm is overwhelming, you can start with only one or two practices that improve soil health. A learning period is probably needed to make new management practices work on your farm. Experiment on one or two selected fields and permit yourself to make a few mistakes. Planning is essential to success.

*"....generally, the type of soil management that gives the greatest immediate return leads to a deterioration of soil productivity, whereas the type that provides the highest income over the period of a generation leads to the maintenance or improvement of productivity."* — Charles Kellogg, 1936

## Summer Roadshow Speaker Profiles



**Ray Archuleta**

Ray Archuleta is a farmer from Seymour, MO. He teaches Biomimicry Strategies and Agroecology principles for improving soil function, on a national scale. He has over 30 years of work experience as a Soil Conservationist, Water Quality Specialist, and Conservation Agronomist with the Natural Resources Conservation Service. He has worked in New Mexico, Missouri, Oregon, and North Carolina. He is a Certified Professional Soil Scientist with the Soil Science Society of America. He served for two years in Guatemala as a Livestock Specialist in the Peace Corps. He received his A.S. in Livestock Science from Northern New Mexico College and a B.S. in Agricultural Biology, plus 30 hours of graduate level classes, from New Mexico State University.

Archuleta will be speaking at four different soil health events throughout the central and eastern half of the state June 12-13. Stops on this “roadshow” include Moody County, Spink County, the Dakota Lakes Research Farm in Pierre as well as Tripp County. **Additional information on page 5- RSVP today!**

Jay Fuhrer is a Soil Health Specialist for the USDA- Natural Resources Conservation Service in Bismarck, North Dakota with over 38 years of hands on conservation and soil health experience.



**Jay Fuhrer**

“If you have more carbon entering the soil than leaving, your children will likely farm your land; if you have more carbon leaving than entering they likely won’t”.

Fuhrer will be speaking at the Moody County Soil Health Tour on June 12th, which will make stops at Jeff and Drew Hemmer’s in Dell Rapids as well as Jerry Houselog’s in Pipestone. Topics that he hopes to cover throughout the day include: planting green to help with problems such as salinity and erosion, the five principles as tools to achieve soil health, as well as a discussion on the carbon cycle. He explained why the discussion on the carbon cycle is especially important to include by saying “Farmers, ranchers, gardeners, they should all start with an understanding of the carbon cycle and that if you have more carbon coming into and staying in a system, no matter what you call it, that is a healthier system than one with more carbon leaving it”.

Additional hands on demonstrations Fuhrer hopes to help incorporate into the day include demonstrating an infiltration test, analyzing the results of a Solvita soils test as well as how to actively problem solve in fields that may need additional soil health practices to be incorporated. By identifying which soil health practices are missing or lacking in a field, producers can more easily identify what next step they should take to build this extremely important resource, using a systems approach. This concept is especially important to Fuhrer because when asked what his “Soil Health Aha Moment” was Fuhrer replied that it was “when I made the mental switch from seeing soil health work as merely serving or conserving a degraded resource to the way of thinking that it was instead all about building a resource.”

**For more information about this or any other soil health events being held throughout the state this summer visit our website Events Calendar at [www.sdsoilhealthcoalition.org/events/](http://www.sdsoilhealthcoalition.org/events/).**

## Soil Health News

### Soil Health Bus Tour With Farm Credit Services of America

By: Sarah Fitzgerald

The South Dakota Soil Health Coalition (SDSHC) had the opportunity to take approximately forty Farm Credit Services of America (Farm Credit) employees on a bus tour in Pierre on May 2nd. The day began with lunch at the local Farm Credit office where SDSHC staff and board members were able to meet those who would be attending the tour and spend a little time getting to know one another. Then it was off to the buses which would take the group to board member Terry Ness's farm ten miles east of Pierre.

Terry Ness is the current Secretary/Treasurer of the SDSHC and operates a diverse cropping system with a 500-ewe farm flock and has been continuously utilizing no-till for 28 years. Additional soil health practices he uses on his farm include cover crops, integrating livestock onto farm ground, and the inclusion of areas for wildlife and specifically pheasant habitat throughout his farm acres. Ness described that with these practices he and his family are "making significant progress increasing soil health and building healthy soil". Those along on the bus tour were taken to one of Terry's fields where technical personnel were waiting to conduct several soil health demonstrations and hands on learning experiences.



Stan Boltz, Regional Soil Health Specialist and Nathan Jones, State Soils Scientist, with the USDA- Natural Resources Conservation Service each presented a session with SDSHC board members sharing their own soil health experiences between sessions. Interactive demonstrations included the Rainfall Simulator and a chance for those in attendance to explore two large soil pits in two different portions of the field. Michelle Pluta, Vice President Retail Operations for Farm Credit said "the information presented throughout the day was very informative. I have received a tremendous amount of positive feedback from those who attended" and that she was "grateful for the opportunity to collaborate on the event."



**For more information about setting up a tour in your area call (605) 280-4190 or email [sdsoilhealth@gmail.com](mailto:sdsoilhealth@gmail.com) A video of a Rainfall Simulator can be viewed by accessing this [link](#).**

### C:N ratio

Cover Crops are catching on but, planning is vital for success! Wheat straw, high C:N ratio followed by a low C:N ratio cover crop such as hairy vetch will help microorganisms break down straw faster and make nitrogen available to the microorganisms and the next row crop.

Multi-species mixes can help you strike the balance of C:N ratios—and is a practice many farmers are using. Since 2008, farmers have increased their use of cover crops by 13% each year, according to a survey from the Sustainable Agriculture Research Education program. This would mean 50 million acres of cover crops by 2025. In 2017, farmers planted about 17 million acres of cover crops. Of those acres, nearly 50% were in cereal rye, with oats and radish lagging behind at 26% and 23%, respectively. **Learn about C:N ratio at the soil health workshops June 12-13th!!**



## Newly Available Resources and Projects

### USDA, Private Sector to Help South Dakota Producers Protect and Restore Soils

*New pilot project to increase services vital to ag production and soil quality*

NATURAL RESOURCES CONSERVATION SERVICE (NRCS), Huron, S.D., May 9, 2018 –A new U.S. Department of Agriculture (USDA) pilot project will add the expertise of private-sector technical service providers (TSP) to help farmers in South Dakota reduce two major causes of water erosion (sheet and rill), wind erosion, and improve soil health.

Producers of annually planted commodities in Iowa, Mississippi, North Dakota and South Dakota will have the opportunity to hire TSPs who will work with the USDA’s Natural Resources Conservation Service (NRCS) to develop Soil Resources Planning Conservation Activity Plans. These plans, known as CAP 132, will:

- Reduce sheet and rill water erosion;
- Reduce wind erosion;
- Improve organic matter in soils; and
- Provide economic information producers can use to make conservation decisions at the sub-field level.

“Bringing on TSPs who can leverage precision agriculture technologies and can supplement our soil conservation efforts will help more producers use economic information to make sound decisions to protect and regenerate their soils,” said Jeff Zimprich, State Conservationist, Huron, SD. “Empowering TSPs to take on these important tasks will also extend the focus on the customer service NRCS provides to ensure producers get the help they need to be productive and profitable.”

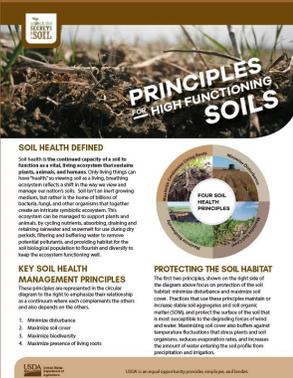
The NRCS is accepting applications for the pilot project. **The deadline for applying is NRCS’ close of business on June 15, 2018.**

The NRCS encourages everyone interested in finding out more about participating in the CAP 132 Pilot Program to contact their local NRCS office.

The NRCS encourages anyone interested in finding out more about becoming a TSP to contact Mark Larson, SD TSP Coordinator, by email at [mark.e.larson@sd.usda.gov](mailto:mark.e.larson@sd.usda.gov) or call (605) 352-1209.

New Fact Sheet Available!

Principles For High Functioning Soils



Click On The Above Image For This & Other Soil Health Fact Sheets

Now Available:

2017 National Conference on Cover Crops and Soil Health Presentations



Click On The Above Image For Access

Planning Resource tool Available for you to use!

Although recent spring rains have provided moisture to critical areas.

It often takes South Dakota’s grasslands longer than one season to recover from the effects of a drought.

## South Dakota Drought Tool

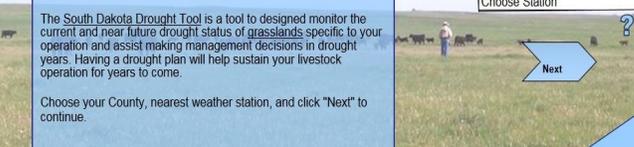
Drought will always be a challenging component of the livestock industry. While we cannot control drought, we can capitalize on our resources in good years, and plan to conserve in drought years. Drought has long term effects, and takes long term recovery. Since 1940, drought historically occurred an average of 21% of years in the northern Great Plains.

The South Dakota Drought Tool is a tool to designed monitor the current and near future drought status of grasslands specific to your operation and assist making management decisions in drought years. Having a drought plan will help sustain your livestock operation for years to come.

Choose your County, nearest weather station, and click "Next" to continue.

Month	Day	Year
Now	Now	Now
Choose County		
Choose Station		

Next





## Ray Archuleta Soil Health Roadshow

Moody, Spink, & Tripp Counties,  
Dakota Lakes Research Farm

June 12-13, 2018

### Tuesday June 12, Moody County:

- 9:00 AM-5:00 PM
- Dell Rapids, SD & Pipestone, MN
- Nationally recognized speakers Ray Archuleta & Jay Fuhrer
- Tour stops at the Hemmer, & Houselog operations
- Soil demonstrations, equipment, lunch, & producer panel
- Contact Flandreau NRCS Office (605) 997-2949 Ext. 3 or Pipestone NRCS/SWCD (507) 825-5478 Ext. 3 for more information or to RSVP.

### Tuesday June 12, Spink County:

- Evening Meal 5:00-6:00 PM
- 4-H Facility, 38497 174th St., Redfield, SD
- Presentation to follow on soil biology, benefits of diverse crop rotations, and cover crops
- Contact Shane Jordan at (605) 472-1437 Ext. 3 for more information or to RSVP.

### Wednesday June 13, Dakota Lakes Research Farm:

- 9:00 AM Registration
- 21310 308th Ave., Pierre, SD
- Field Tour of Dakota Lakes & Speakers: Ray Archuleta, Dr. Dwayne Beck, & Dr. Jose Guzman
- Contact Cindy Zenk at [sdsoilhealth@gmail.com](mailto:sdsoilhealth@gmail.com) or (605) 280-4190 for more information or to RSVP.

### Wednesday June 13, Tripp County:

- 6:00-9:00 PM
- St. Mary's Hall, 305 W. 3rd St., Winner, SD
- Contact Steve Higgins at [steven.higgins@sd.usda.gov](mailto:steven.higgins@sd.usda.gov) or (605) 842-0603 Ext. 3 for more information or to RSVP.

## AGRICULTURAL INFORMATION FROM WATERTOWN RADIO

Listen to AG HOUR with Chuck Langner on KWAT 950 am Weekdays from 11 am – 12 pm. Below are some interviews with various people speaking about items of interest to those involved with agriculture.

Recorded Interviews Can Be Accessed At <https://www.gowatertown.net/agriculture-information-from-watertown-radio/>

### Calendar of Events

#### June 5<sup>th</sup>-7<sup>th</sup>

SD Professional & Youth Range Camp, Sturgis

#### June 8<sup>th</sup>-9<sup>th</sup>

Bird Tour- Sieck/Perman

#### June 12<sup>th</sup>

Soil Health Tour, Moody County

Ray Archuleta Soil Health Event-Spink County,

#### June 13<sup>th</sup>

Soil Health Event, Dakota Lakes, Pierre

Soil Health Event, Tripp County, Winner

#### June 20<sup>th</sup>

Prairie Paradise Farms  
Hayes, SD

#### June 20<sup>th</sup>-22<sup>nd</sup>

Grassfed Exchange Conf  
Rapid City

#### June 25<sup>th</sup>

Leopold Tour, Cammack Ranch Union Center

#### June 26<sup>th</sup>

SH Field Day, Murdo

#### June 26-27

Soils Days and Rangeland Days, Redfield

#### June 28<sup>th</sup>-29<sup>th</sup>

Gabe Brown & Jeremy Wilson SH Bus Tour

#### Sept. 5<sup>th</sup>-7<sup>th</sup>

Soil Health School, Hartford Register today!!

Additional information at [sdsoilhealthcoalition.org](http://sdsoilhealthcoalition.org)



South Dakota  
**Soil Health  
Coalition**

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**Website:** [sdsoilhealthcoalition.org](http://sdsoilhealthcoalition.org)

**The Soil Health Nexus is  
Looking to Better Understand your Soil Health Challenges**

The Soil Health Nexus, a regional team dedicated to increasing access to soil health resources, is working to gather ideas on soil health and better understand soil health challenges through a newly designed survey. The 5-minute survey is intended for farmers, agribusiness consultants, educators, and agency staff and can be accessed at [tinyurl.com/soilhealthsurvey](http://tinyurl.com/soilhealthsurvey).

Thank you for taking time to assist in providing input as to the challenges you are having regarding soil health practices.



**[Sign up Today for Soil Health School](#)**



**[Soil Health School](#)**

**September 5-7, 2018**

**Hosted by**

**Kurt and Kathy Stiefvater**

**Topic Highlights**

Economics of Soil Health

Forage Allocation

Implementing Grazing Practices

Cover Crops

Crop Rotational Diversity

Soil Biology

Soil Properties

No-till Planting

Managing Soil Salinity

Agronomics – Precision Agriculture