Keep Living Root!

For some seeing the advantages of providing cover on the soil is more evident, than recognizing the benefits of living roots beneath the surface. The roots of living plants offer soil microbes their most reliable food source. Because soil microbes require a consistent food source throughout the year to thrive, cropping systems that contain crop rotations with cover crops including legumes, or perennial grasses throughout the growing season can help sustain the microbes year-round.

Just like organisms above the ground every soil organism has something it eats and something that eats it. Understanding the food web as a whole includes organisms under our feet, that each organism and every bit of plant residue is important. Variety of microbial food is significant to healthy soil, there is no better food for soil microbes than the sugars exuded by living roots. Living plants provide microbial activity close to the roots, rhizosphere. This area provides the buffet line or the most active part of the soil biology because it is where the most easy-to-eat food is available for the microbes. Which in turn provides the critical nutrient cycling for crops aiding in plant growth and health. Because living roots provide the easiest source of food for soil microbes, growing perennial crops or long season cover crops is the key to feeding soil food web so they will be healthy and ready to perform throughout the “cash crop” growing season.

Soil loss or building…..?

An indicator for the health of the land, and the long-term wealth of a state even the nation is whether soil is being formed or lost. When our soil erodes so too does the economic foundation on which production agriculture is based. Our management practices allow topsoil to build or decrease. Generally most efforts have focused on reducing the rate of soil loss, what if we concentrated on building topsoil? In order for new soil to form, it must be living. Life in soil provides the ability for more life to be created, ...healthy soil.

Five principles of soil health provides the framework for soil formation. If soil has good structure for its type, it will have macro pores which contain water and air. As soils get healthier, structure improves downward through the profile, creating the opportunity for healthier and more resilient crops. We need to encourage soil building processes every day in our land management in order to have sustainable agriculture.

“The nation that destroys its soil destroys itself” FDR 1937
Our Amazing South Dakota Resources
TV Commercial Campaign

Our Amazing South Dakota Resources

The “Our Amazing South Dakota Resources” campaign was created in early 2018 with the goal of better communicating the importance and value of grasslands and soil resources throughout the state. This campaign strives to better show what South Dakota farmers and ranchers are doing to protect and enhance these resources. Each thirty second video was created utilizing footage from interviews with South Dakota farmers and ranchers and showcases footage of their farming and ranching operations.

The third in a series of six commercials planned for release this calendar year, “Our Amazing Pollinators”, is now available and being aired on TV stations across the state! The two previous commercials aired and distributed earlier in the year include “Our Amazing Grasslands” and “Our Amazing Water Resources”.

All footage utilized to create these short videos was originally recorded as part of two different projects organized by the SD Grassland Coalition and SD Soil Health Coalition and funded through an agreement with USDA-NRCS and the additional sponsors displayed below. These sponsors have shown their continued commitment to protecting and enhancing Our Amazing South Dakota Resources.
Soil Health Principles Highlighted

Fuhrer, Archuleta, & Beck world renowned soil health experts spurred the soil health movement to those 330 in attendance at June Soil Health Workshops.

Brown Ranch and Jeremy Wilson’s were highlighted operations on the Spink/Clark June bus tour. Fifty nine people absorbed evidence of soil health practices at the Brown and Wilson operations. Paul and Gabe shared experiences on how crop and livestock diversification provided necessary income while reducing inputs. Wilson’s inter seeding, cover crops, and multi species crops provides food source for the soil and its organisms. Those in attendance left the tour contemplating options to take back home to improve soil health and their bottom line. July 10 and 11 workshops brought options for operations with corn and soybean rotation to increase soil health and profitability.

Pioneers of Soil Health Legacy Award
SDSHC seeks nominations for the Soil Health Legacy Award

Candidates/producers will
* exemplify soil health principles,
* do what is needed for the soil, with disregard the status quo
* observe the land to know what it needs for sustainability

Award will be presented at the 2019 Annual Meeting in Brookings.

Send nominations to sdsoilhealth@gmail.com
Heavy Rain and Soil Nitrate

Anthony Bly – 6/28/2018

Heavy rains have occurred in Southeast South Dakota, Southwest Minnesota and Northwest Iowa in the past two weeks. Soil nitrogen (N) in these fields should have had adequate time to convert to nitrate-N (NO3-N) and therefore be vulnerable to leaching with water movement through the soil profile. While the soil nitrogen cycle is very complicated is it extremely hard to measure exactly the amount of nitrate that should be in the soil from fertilizer or manure N applications. However, we can get an idea if leaching has occurred by evaluating the concentrations of nitrate-N by soil depth.

A Nitrogen rate corn study began in eastern Minnehaha County South Dakota in May and poses a good scenario for measuring possible soil nitrate leaching. We sampled the check plots (without fertilizer nitrogen application) and the 200 lbs. N/a plots in one-foot soil depth increments to determine any possible nitrate-N leaching. Additional soil samples were gathered from a nearby producer's field for comparison. The soil nitrate-N analysis shows that leaching did occur (Table 1). There seems to be a nitrate-N concentration bulge in the one to three-foot soil depths, which indicates that low amounts of N were lost below the four-foot depth. Different climate scenarios that occur in the remaining growing season will control whether the corn can extract the deeper nitrate-N. Reduced precipitation will cause corn roots to go deeper in the soil and help extract nitrate-N. Increased precipitation could cause further leaching and shallower rooting, resulting in less uptake by the corn.

At this time, the N in the one to three-foot soil depths should not be considered as lost but leads to a situation that needs further attention if precipitation remains high, as the side-dress N period is ending due to increase corn height. Between the June 22 sampling date and the date of writing this article (June 26), 2.59 inches of additional rain occurred, for a June total (to date) of 10.99 inches. We all know that producing a crop is risky and full of difficult decisions. Nitrate-N loss from leaching is hard to manage and this data does not provide any clear answers but hopes to provide some insight on the current situation.

Table 1. Soil Nitrate-N (NO3-N) after heavy June rain events in eastern Minnehaha County, South Dakota on June 22, 2018. (June precipitation prior to sampling = 8.4 inches)
Register for Soil Health School

The South Dakota Soil Health Coalition is proud to announce the South Dakota Soil Health School which will be held September 5-7, 2018 in Hartford, SD. Field demonstrations will be held at the farm of Kurt and Kathy Stiefvater.

The agenda features classroom style presentations from producers and technical experts from across the state and region, as well as hands-on experiences in the field. Area producers will share their challenges and successes with various methods for improving soil health.

RSVP today! Call (605) 280-4190 or email sdsoilhealth@gmail.com.

Funds Available for Cover Crops to Aid Land and Producers

USDA NRCS SD announced July 13th in a news release that help for farmers and ranchers with land damaged by excessive rains or severe storms, such as from hail or flooding is now available.

"We are making funds available for those affected areas of South Dakota. The sign-up for damaged land and/or crops is open now," Jeff Zimprich, State Conservationist says. "Through the EQIP, we are offering assistance for producers for cover crops to provide protection to the soil for the remainder of the season, plus any practice that is needed to deal with soil erosion caused by heavy rains or flooding." Applications will be accepted until August 24th.

Contact your local NRCS office for additional information.

Calendar Of Events:

**July 27th**
Happy Cow Tour

**August 15th**
Prairie Paradise Tour
Hayes, SD

**August 15th-17th**
North American Manure Expo, Brookings

**August 21st-23rd**
Dakota Fest, Mitchell

**August 30th-September 3rd**
South Dakota State Fair, Huron

**Sept. 5th-7th**
Soil Health School, Hartford

**Sept. 6th**
SE Research Farm Tour
Beresford

**Sept. 10-12th**
SDGC Grazing School

**Sept. 13th**
Soil Health CC Interseeding
Claire City

**Sept. 13-15th**
SDGC Grazing School

**Sept. 16-18th**
SDACD Convention,
Jon Stika presenting, Pierre

**Sept. 20th**
Carbon Soil Health Tour
Roslyn

**October**—West River Soil Health event
SDSHC
Seeks entries for Soil Health
Photo Contest
Send your photos to
sdsoilhealth@gmail.com or messenger the photo with your name and short description for a chance to have it become our profile picture and used in publicity for 2019 Annual meeting.

SDSHC reserves the right to use any photo submitted in any publication and media material, without express written permission.

Congratulations!
Gary & Amy Cammack
2018
South Dakota Leopold Conservation Winner

“Conservation is a state of harmony between men and land.”
Aldo Leopold