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## **Maximize Living Roots**

What do I do now....decisions are being determined that will not only effect 2019 crops but future crops as well. Whether a cash or cover crop, a living root will promote soil biology to benefit subsequent crops, reduce erosion, and cycle water and other nutrients. Keeping a living root, one of the five principles of soil health should encourage the direction of the decision. Living plants harvest sunlight and fix carbon dioxide from the air, producing different carbohydrates, and release oxygen. Because plants stand at the foundation of the soil food web, providing the energy source for most living organisms that cannot capture sun light, it is beneficial to have them growing in the field continually to keep the soil food web active.



## **Delayed Planting Challenges: Series Provides Important Information**

### **Delayed Planting Challenges: Alternative Forages** By Sara Bauder, R Beck, W Rusche

With the excessively wet planting conditions much of South Dakota is now experiencing, many producers are looking for "Plan B" to meet forage needs for their livestock, or as a commodity that can be marketed to livestock producers. Even for producers who may not own livestock, a forage crop can still hold economic potential. Harvesting forage or leasing grazing acres to neighbors who own livestock provides a way to create revenue on fields that may have otherwise been fallow or weedy this year. Read the article and [Additional information on forage options, resources](#), and cover crops.

**Delayed Planting Challenges: Cover Crop Considerations** By Sara Bauder, R Beck, A Bly, W Rusche  
High waters and saturated soils across many counties in South Dakota have producers worried about getting their crops planted in a timely manner this spring. In many areas, typical cash crops will not be a possibility. Producers may need to develop alternative plans. Leaving fields or large areas in fields fallow is not a good option and can have detrimental effects on the next crop (which follows the fallow period). [Article explains fallow syndrome, cover crops including mixtures, benefits and additional information.](#)

### **Delayed Planting Challenges: Late planted Corn and Cattle Feeding**

By Warren Rusche

### **Delayed and Prevent Plant Choices: Multi-Peril Crop Insurance**

By Jack Davis



## ***Inside this issue:***

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## Agriculture showing Trends by Anthony Bly


Significant education efforts for natural resource conservation have occurred in South Dakota during the last five years. Many stakeholder groups have brought awareness for soil health and water quality to the forefront. Food security is the core mission of these efforts as population increases, natural resources are challenged, and climate extremes are experienced.



### Census of Agriculture Findings

Evaluating progress for adopting sustainable and regenerative practices is difficult. The Census of Agriculture (USDA/NASS) is a good evaluation tool because producers are contributing with their actual on-farm information. The 2017 Census of Agriculture was recently released and provides a good opportunity for land use trend evaluation.

The number of no-till farms and acres increased 4 and 7 percent, respectively. Farms using conservation tillage rose 23 percent with acres increasing 24 percent. The number of farms using Intensive tillage practices sharply decreased by 41 percent with a 33 percent decrease in acres. The tillage trends are very positive towards conserving our most important soil resource. However, a significant amount of education needs to happen to encourage more producers to adopt no-till and conservation tillage.

 The number of farms using cover crops increased 57 percent which supported an 89 percent increase in acres. Since the number of acres increased at a much higher rate when compared to the number of farms, this could indicate that farms that had previously grown cover crops, used them on more acres on their farm. This could indicate these farmers found benefits to cover crops and were willing to expand their use to more acres. The largest percent change in any land use practice came with the number of organic farms which were up 168 percent. Acres were not previously reported however there was only 42,495 acres of organic production in South Dakota during 2017. Farms installing tile drainage increased 18 percent while the number of acres increased by 68 percent. Much like the possible response of farmers to cover crops the similar conclusion could be made for tile drainage. The farmers that had previously installed tile drain invested in more on their farms. Commercial fertilizer use remained relatively constant, with a slight decrease in number of farms and a very small increase in the number of acres. **Bottom Line:** Land use trends supporting natural resource conservation are very encouraging and the stakeholder groups educating farmers about soil health and water quality should feel their efforts are successful but at the same time accept the challenge to continue their efforts. [Article in its entirety](#)



## Digging In [Blog posts](#)



### Special EQIP Sign-Up Announced

USDA-NRCS opened signup period through June 28, 2019. This special EQIP batching period provides financial and technical assistance to help farmers and ranchers voluntarily implement cover crops, forage and biomass plantings, grassed waterways, plus water and sediment control basins.

The special EQIP batching will allow producers to address resource concerns resulting from excessive erosion and continue to build soil organic matter. "Adding growing roots from species such as oats, radishes, and turnips contained in a diverse cover crop mix works to absorb excess moisture and in doing so, soil organic matter will form preventing soil erosion and supply residue protection on unplanted acres." said, Jeff Zimprich, For more information about the EQIP or to apply, please call to make an appointment at your local NRCS office or visit [www.nrcs.usda.gov/Programs/FinancialAssistance/EQIP](http://www.nrcs.usda.gov/Programs/FinancialAssistance/EQIP).

### Farm stress—Healthy lifestyle

Farming and ranching can be stressful – adverse weather, disease, regulations, low or volatile commodity prices, family dynamics, and financial worries are a constant. Stress can build and eventually take a heavy toll on your outlook. Farmers and ranchers are unique business owners. Not only are they self-employed, there is often no separation between home and work. Failure affects not only your business but your whole lifestyle.

If you find yourself or someone you know beginning to exhibit unusual behavior such as lack of focus/motivation, uncharacteristic anger, or alcohol abuse, it may be time to evaluate stress levels and the overall farm/ranch situation. If you feel or see a problem please do not ignore it.

### Help Line Resources and Crisis Support

Call 211 for immediate support or contact the Avera Farmer Stress Hotline at 800.691.4336. Support is also available by texting your zip code to 898211 or by emailing [help@helplinecenter.org](mailto:help@helplinecenter.org).

## Soil Health News

### Future of Agriculture and Natural Resources Challenges

By Alvaro Garcia, SDSU Extension , Agriculture & Natural Resources Program Director



There seems to be a misconception nowadays in much of the public that in order for agriculture to be sustainable in the future, there is a need to go organic. Organic agriculture can be sustainable, but so can **traditional agriculture**. Soil degradation is not something new since faulty agricultural practices, even with very little use of chemicals, also resulted in unhealthy soils. Although soil health, seems to be a relatively novel concept, in precolonial times advanced native cultures of North and Central America, and the South American Pacific rim had agricultural practices that improved soil conditions. At the time, intercropping using corn, beans, and squash ("The three sisters"), was a common practice. The nitrogen fixation properties of beans contributed fertility to the soil. Squash provided much needed shade discouraging weed growth and reducing water evaporation. Corn stalks allowed beans to climb and retain moisture that would drip at night for the other plants to grow. These simple practices allowed for rebuilding soil fertility, and maintained needed yields without fertilizers or pesticides. In addition, this practice engendered further nature's diversity, something that monocultures and synthetic chemicals sometimes preclude from happening.

David R. Montgomery Professor of Earth and Space Sciences at the University of Washington contends there are three concurrent myths in today's agriculture. The first is that large-scale agriculture feeds the world today, the second that large farms are more efficient, and the third that conventional farming is needed to feed the world. According to a recent Food and Agriculture Organization (FAO) report, family farms produce over three-quarters of the world's food, and that almost three-quarters of all farms worldwide are smaller than 2.5 acres. The fact is that only about 1 percent of Americans farm today. Yet, most of the world's farmers work the land to feed themselves and their families. Conventional industrialized agriculture feeds the developed world, but most of the world's farmers work small family farms. *Continued on page 5*

### Survey says...High Interest in Soil Health

A recent on-line poll of South Dakota agricultural students and instructors revealed that interest and awareness of the topic of soil health and regenerative agricultural is strong. The poll was conducted by the SDSHC during the fall of 2018 as part of a Conservation Collaboration Grant from the USDA Natural Resources Conservation Service. The goal of the survey project was to gauge current levels of interest and awareness, in order to determine what outreach strategies and materials were needed to continue to increase the reach of the soil health message. Adoption of soil health management systems and practices has increased steadily nationally, but to continue to move the soil health movement into the mainstream of farming, reaching the next generation is going to be extremely important.



During the summer of 2018, an outreach plan was developed to identify technical institutes, four-year colleges, as well as FFA instructors and advisors willing to distribute the online survey. Subsequently, throughout the fall of 2018, more than 500 agricultural students attending South Dakota State University, Lake Area Technical Institute, Mitchell Technical Institute and middle and high school FFA students across the state, completed the online survey. Based on the data collected from these surveys and the responses of forty-three of the instructors a series of summary findings were compiled. Seven student and eight instructor summary findings, which can be found in the full report, show the continued importance of increasing soil health education efforts, ensuring future soil health information focuses on "on-farm" benefits, continuing to develop and expand soil health information and curriculum, as well as the creation of age-appropriate interactive media and teaching tools.



If the soil health message and adoption of soil health management systems are to continue to increase nationally, targeted outreach to the next generation of farmers, ranchers, and producers is going to continue to be extremely important. For more information, a copy of the full survey report or answers to any questions you may have regarding soil health please contact the South Dakota Soil Health Coalition at [sdsoilhealth@gmail.com](mailto:sdsoilhealth@gmail.com) or (605) 280-4190.



## Demonstrating the Road to Healthy Soil



The Spink County Conservation District, USDA-NRCS, and local farmers Doug and Leroy Braun are teaming up to put principles and practices to work in a regenerative agriculture demonstration site. Challenging soil types along with collapsed soil structure, topsoil loss, and saline seeps have largely been tolerated as farmers have blanketed conventional production practices and hoped for the best that mother nature would provide. The result has not been good. Just as human health that goes unmanaged, unaddressed soil health issues do not get better with time and luck.

Regenerative agriculture is more than a trendy phrase or movement. It is the culmination of gained understandings of soil borne biological interactions that were in place before man farmed the soil. That was a time of balance and thriving production. The diversity and prosperity of the plants and animals were determined by mutually beneficial relationships. There is no better gardener and caretaker than mother nature. Man will never replace mother nature, but we can learn from her and do our best to mimic her. By doing so, we will strive to strike a balance between producing ample healthy crops and generating the returns on investment needed to keep our farms financially viable.

The Spink Conservation District along with the area USDA-NRCS has been actively promoting soil health/ regenerative agricultural practices for several years by conducting workshops and bus tours etc. in addition to working one-on-one with producers. The Braun Regenerative Demonstration Site was born as result of this.

Regarding soil health and regenerative practices, Dennis Clemens, District Technician at the Spink Conservation District, said, "While we are seeing participation and interest growing, we really wanted to show that it can be done in our area and we wanted to have a place to put on tours and present the data that we have gained." Dennis continued with "Doug Braun is



one of our board members. Doug's brother Leroy and their sons have all attended soil health workshops and are transitioning to regenerative ag, so they are excited to have a regenerative ag site on their land to learn from." When Doug Braun was asked about his driving interests, Doug responded, "I realized that if we stayed on the traditional corn-soybean program that we were going to go broke. When I started on the Spink Conservation Board, I started seeing some options and we started to look into them. We offered the use of this ground to allow people to see the good in these regenerative practices". Many of the practices which will be on display are actual practices that Doug and Leroy are implementing on their production acres.

The demonstration site will cover approximately 20 acres in a field located on the east side of Hwy 281 approximately 10 miles North of Redfield. Practices used on the site will include no-till, diverse crop rotations, cover crops and companion crops. Products and rates of synthetic fertilizers and chemicals will be scrutinized and minimized to promote soil biology. In turn, enhanced soil biology will help to build soil organic matter and improve soil structure which will increase water infiltration and the soils water holding capacity. Cover crops will aid in moving carbon from the air to the soil and feeding the soil food web that will in turn provide nutrients for the commercial crops.

The demonstration is projected to run 10+ years to fully realize the long-term system benefits. The success of the project will be measured in many ways starting with changes in organic matter level and soil biology as determined by extensive soil testing. Profitability will be measured by tracking input costs and yield. The ability to reduce commercial inputs while maintaining profitability and sustainability is a key measure. And, as Dennis said, "The attendance at our workshops and tours will be a true measure of our success. The more people we can educate, the more successful we will be."

This project is being made possible by a South Dakota Conservation Commission Grant through the South Dakota Department of Agriculture. The South Dakota Soil Health Coalition is a supporting partner along with several other public and private organizations.

*by J Schneider, SDSHC Technician*

Check out the new site!



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## Happy June Dairy Month

*Take a Look!*

*Double Cropping  
Dakota-style*

*Stacking forages  
for more tons,  
soil health  
benefits*



### *Continued from page3* **Future of Ag**

As far as the second argument (are large industrial farms more efficient) there is no doubt efficiencies of scale exist that decrease inputs per unit of production. According to a report by the National Research Council however, “well-managed alternative farming systems nearly always use less synthetic chemical pesticides, fertilizers, and antibiotics per unit of production than conventional farms.” In fact, a US census of agriculture reported, small, diversified farms double the food produced per acre compared to large farms. No doubt large farms outperform small farms as far as monoculture is concerned, however small diversified farms produce more diverse food per acre overall, which also enhances soil health and the environment.

The third myth or “Conventional farming is necessary to feed the world” is even easier to debunk. According to a 2016 report, the United States throws away roughly 50 percent of all produce—some 60 million tons (or \$160 billion) worth of produce annually or “one third of all foodstuffs.” According to the EPA, wasted food is also the single biggest occupant in American landfills. This “cult of perfection” makes Americans throw away almost as much food as they eat, deepening hunger and poverty, and inflicting a heavy toll on the environment. As far as agricultural crops are concerned, the US is producing much more than the internal market will bear. This is one of the main reasons for the current dismal prices farmers receive for their production, and how dependent we have become of reliable trading partners worldwide.

Undoubtedly, increasing the precision of the application of chemicals is important, but the true change needs to come from transforming the current culture of “overproducing us out of business”, while oftentimes taxing the environment in the process. Conventional farming practices that degrade soil health are counter-productive to be able to feed the world in the near future. No-till farming, cover crops, intercropping, and complex rotations in the context of different soil types are the answer to future climate, environmental and socioeconomic constraints.

## Calendar of Events:

**June 3, 2019** – CRP  
apps open

Cattle Handling Mitchell

**June 4<sup>th</sup>-5<sup>th</sup>**  
Professional & Youth  
Range Camp-Sturgis

**June 4** Brookings Ag  
Women's Day

**June 5<sup>th</sup>** Faulkton  
Ag Women's Day

**June 7** PSSASD  
Huron

**June 7<sup>th</sup>-8<sup>th</sup>** Birds, At  
Home On The Range  
Tour, Hansen Ranch

**June 10<sup>th</sup>-13<sup>th</sup>** NCSS

**June 11** Soil Health  
Sit Down—Hoven

Rapid City

**June 13** SDSHC Bd  
Mtg

**June 17** Grant County  
Workshop

**June 18<sup>th</sup>-19<sup>th</sup>**  
Soils Days &  
Rangeland Days  
Redfield, SD

**June 21** Watertown  
Workshop

**July 5** Deadline  
[submit comments to  
NRCS](#) 2018 Farm Bill  
conservation

**July 9** Saline/Sodic  
Stratford

**July 10<sup>th</sup>**  
Governor's Ag Summit

**July 16**  
Leopold Award Tour

**September 4<sup>th</sup>-6<sup>th</sup>**  
**Soil Health  
School, Salem**



South Dakota  
**Soil Health  
Coalition**

116 N Euclid Avenue  
Pierre, SD 57501

**Phone:** 605-280-4190

**Email:** [cindy.soilhealth@sdconservation.net](mailto:cindy.soilhealth@sdconservation.net)

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

*Congratulations!*

*Alex and Sarah Scroggins—May 25<sup>th</sup>, 2019*



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### **On farm Opportunity**

The South Dakota On-Farm Research Program is a joint venture between the SD Soybean Research and Promotion Council, South Dakota State University, and SDSU Extension. The purpose of the On-Farm Research Program is to test the effect of different management practices and/or products on soybean yield. This is a free program for producers to participate in and to utilize SDSU's ability to statistically analyze yield data. Results are shared directly with farmer-collaborators and also anonymously posted on the SD On-Farm website (<https://onfarmresearch.sdsoybean.org/>). We are looking for producers who are interested in conducting a research trial this spring and/or summer. We can test any idea/question you have; low vs. high population, seed treatments, foliar products, fungicides, etc. Something that would be very interesting would be testing the effect of soil health practices on soybean yield. For instance, no-till versus conventional till or cover crops versus no cover crops. We would love to work with your ideas and creativity! Below is an example of a trial setup; these plots do not need to take up a lot of space or time. Please contact us if you are interested in trying something on your operation this year! Thank you!

Shaina Westhoff

Call or Text: 605-471-0782

Email:

[Shaina.Westhoff@sdstate.edu](mailto:Shaina.Westhoff@sdstate.edu)



[Check out the article for additional information!](#)