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2019 Soil Health Conference and Annual Meeting January 22-23rd

The South Dakota Soil Health Coalition is finalizing details for the conference and annual meeting to be held on South Dakota State University campus at Club 71 in Dana J. Dykhouse Stadium, 1396 Stadium RD, North Campus Dr, Brookings, on January 23, 2018. Registration will begin at 8:00 a.m. with the event to begin at 9:00am. Those in attendance will have booths and demonstrations to take in prior to the main agenda. Speakers for this year's event include Dwayne Beck, Dakota Lakes no-till and soil health pioneer, Allen Williams cover crop and livestock integration expert, and Keith Berns Nebraska soil health and carbon advocate plus a panel of South Dakota farmers and ranchers.



The 2018 Soil Health Conference in Watertown

This year's program will also include two awards; Friend of Soil Health and new this year Legacy Award in memory of Al Miron, rainfall simulator, as well as an evening session at the Days Inn on January 22nd with Keith Berns and a "Meet and Greet" networking opportunity with speakers, Voices for Soil Health, and the SD Soil Health Coalition Board. A block of rooms has been reserved at the Days Inn and CCA credits are available for those who may be interested.

Those planning on attending are encouraged to RSVP for planning purposes, to Cindy Zenk SDSHC Coordinator, by emailing sdsoilhealth@gmail.com or by calling (605) 280-4190. This event is free to all 2019 SDSHC members. The cost for non-members is \$25, which includes a one-year membership to the South Dakota Soil Health Coalition. Please join us to see how we are working to fulfill our mission of improving soil health in South Dakota. **Register Today!** See page 5 for agenda

Flagship Farmers Inspire Change



Sustainability is a mindset that drives continuous improvement. Almost everyone involved in agriculture carries a great respect for the work and effort of previous generations – for farmers and livestock producers from generational farms, these are parents, grandparents and even great-grandparents. But every generation seizes its own opportunities to improve and drive progress. Today's farmers, ranchers, producers and growers have tremendous opportunities to create value, differentiate their product and ensure the viability of food agriculture by examining what sustainability might mean on their farm. Sustainability isn't about abandoning tradition; it's about creating new traditions and practices that complement the old.

When considering candidates for McDonald's Flagship Farmer Program, the company and selection committee seek out those who can serve as positive examples, teachers, mentors and communicators to others. A **Flagship Farmer** has a desire to continuously search for opportunities for sustainability improvements – not just where there are issues or problems, but also where things are working well but could be even better. They seek out information to measure and quantify their baseline as well as subsequent improvements. Townsend Bailey, Sustainability Director for McDonald's announced United States' first recipient to South Dakota's Perman Family of Rock Hills Ranch as a 2018 Flagship Farmer at SD Cattlemen's Convention on November 28th in Huron, SD. **Congratulations Lyle, the Perman Family and Rock Hills Ranch!** 2018 was focused on selecting farmers/ranchers in the US involved in beef production, specifically (1) grassland and native land preservation through cattle production and (2) regenerative grazing practices.



Soil Health News

Soil Health Coalition Hires Soil Health Technicians

The coalition is very excited to announce the addition of three new staff members who have started in 2018 and a fourth who will begin work in early 2019. These Soil Health Technicians will assist with current coalition programming and outreach as well as work to expand hands on follow up with farmers and ranchers throughout the state. These positions were made possible through a combination of grants awarded to the Soil Health Coalition.

Hello, my name is **Austin Carlson** and I grew up on my family's farm near Garretson, SD where I developed a deep passion for agriculture. This passion lead me to South Dakota State University where I pursued a bachelor of science degree in agriculture, graduating in 2016 (Agriculture Systems Technology-Major, Agriculture Business-Minor). College ultimately reaffirmed my passion for agriculture, proved to myself I enjoy reading and learning, and lead me to my wife Baylee (Scott). Over the last 5 years, I have enjoyed learning about soil—one of our most precious resources. As an agriculturist, I see a great need to improve the soils that our world depends on, I am exceptionally excited to continually learn and share knowledge in order to rejuvenate the soils across South Dakota and beyond. My wife and I reside near Garretson and are actively assisting on my family's farm where continually implementing the five soil health principles have and will continue to positively transform our farm. I look forward to meeting and working with many of you in the future.



Hi there, I'm **Baylee Krause**- soon to be Baylee **Lukonen**, as I am getting married in mid-January. As a child I grew up on a farm near Hankinson, ND and spent a lot of time on my grandparent's ranch near Renville, MN where we proudly raise registered shorthorn cattle. As a 4th generation shorthorn breeder, my interest in agriculture came at a very young age and I became very involved in 4-H and showing cattle at all levels including nationally. My love for agriculture and interest in soil health, which was heavily influenced by my uncle, led me to study agronomy at Southwest Minnesota State University. While in college I learned that regenerative agriculture is something that is not heavily taught in our universities and made it a personal goal to educate myself as much as possible outside of my formal studies. I enjoy reading, learning, and planning my own regenerative efforts alongside my fiancé, Grant. We reside on a little farm near Watertown, SD where we continue to raise shorthorn cattle. I am excited to be a Soil Health Technician for the SDSHC and look forward to meeting new people, learning, and helping others understand the importance of regenerative agriculture and how to make changes on their own farms.

Hi there. I'm **Jim Schneider**; farm boy, agronomist, and proud dad of Ty, my 16-year old son. I recently moved to Gettysburg, SD which happens to be my home town. I was raised on a diversified farm a few miles west of town. I was involved in most of the farm work growing up but what I remember most vividly is working summer fallow and the soil left in the bottom of the bath tub after clean-up. I remember the dust blowing in the wind and the parched crops which desperately hung on as well as possible when rain was short. As a result, I attended South Dakota State University where I graduated with a bachelors' degree in ag. business and a masters' degree in agronomy. Previous positions included areas of crop consulting, extension, sales and marketing, agronomy technical support and research in South Dakota, Minnesota and Nebraska. Through the years I have developed a great appreciation for sustainable agriculture. The evolution of my home area from hit and miss crop production to what it is now with fairly consistent crop yields and abundant wildlife is a prime example of the positive impact from well managed diversely cropped no-till systems. It is good to be back and to have the opportunity to focus full-time on protecting our resources while improving productivity and profitability. I look forward to working with you.



No-Till Success Story: Conquering Erosion with Sturdier Soil

By Kara Pugsley

Baltic producer explains no-till benefits reaped in just 3 years

Four years ago, Jared Questad, of Baltic faced adversity on his family's farm due to heavy rains washing away much of the hard work he and his family had put into their land. "We had just tilled and had heavy rains, which resulted in all kinds of washouts and erosion to our fields," explained Questad. "I knew it was going to take quite a while to get those areas back to where they should be."

The Questads' produce corn and soybeans and have a cattle feedlot operation. Questad graduated from college in 2012 and was hoping to impart some new and fresh ideas to the family business. He started looking at the fields that were tilled.

"There was just no structure to that soil anymore – it just completely falling apart," he said. Inspiration struck for Questad because he had learned in school that no-till techniques could build up the soil. He didn't know if it would work but knew that if they didn't try, they could have more and more erosion each year.

"We had to do something different," said Questad.

Learning through Trial & Error

Now in their third year of no-till farming, Questad says in the beginning it was a lot of trial and error. One area that needed modification was their planting equipment. "We had to adapt the planter a bit that first year, then the next year we did quite a bit more to the planter to make everything run through like we wanted."

The Questads started phasing out tillage. They started with the areas where they saw the greatest amount of erosion and then transitioned to 100% no-till. Questad says they've seen a dramatic difference. "Now that we've stopped tilling, these fields have higher organic matter and better soil structure," he said. "It just simplified our lives quite a bit to do no till."

Questad said the hills and valleys on their land are now left alone. "We just farm through them rather than till them up and have all the washing happen again," Questad said. "With no-till, the more you do it – the more you will see the benefits."



Since they also have a feedlot, they were applying manure onto their fields as fertilizer. "We were disking it in because that seemed to be the only way to do it," he added. "But we learned to apply it differently by spreading it in lightly and have seen success in doing that and keeping it low disturbance."

Gaining Yield and Reducing Costs

Questad believes the benefits of no-till outweigh any short-term yield losses. "After you spend time getting adjusted, all of the yield that you might lose the first couple of years will come right back to you."

When he started telling other producers about the success he was having with no till methods, he was met with a lot of questions, especially regarding yield loss. He says structure they've gained in the soil in the past three years has been worth it. "When you start to see that soil structure change, you are going to be really happy you did no-till."

Another reason Questad has justified the transition to 100% no-till is that they have seen reduced labor and fuel costs. "We found it didn't take near the amount of man hours to do no-till, because we weren't running a tillage tractor all day," he explained. "We also saved in fuel we would have burned had we been tilling."

Questad hopes that no-till will help preserve their land for future generations. "In the long run you are gaining yield because you are increasing the value of the land," he noted.

"I encourage other producers to get out there and try no-till. Put the disc away. There's no reason to wait any longer."

[Watch Jared tell his Soil Story](#)

Did You Miss The November 29th Managing Soil: Maximizing Profit Meeting?

Producer Panel Videos are available under the videos tab of our Facebook Page!



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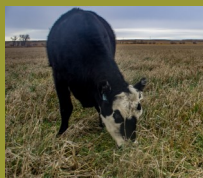
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Newly Available Resources and Projects

Nutrient Recycling Ability of Cover Crop Mixes

Jim Schneider, Soil Health Technician

Anthony Bly, SDSU Extension Soils Field Specialist and several SDSU colleagues are conducting research on the nutrient recycling ability of cover crop mixes. Cover crops can be scavengers, gathering nutrients left over from the previous crop and temporarily storing them to be released for subsequent crops as the cover crop residues decompose. Bly's research objectives are to determine the amounts of nutrients taken up and held by various cover crop mixes and the time required for the nutrients to be released. Knowing this will aid producers in determining commercial fertilizer application rates and timing. Other factors measured included above-ground biomass of the different mixtures, available soil moisture as affected by the cover crops, and soil biological activity at the end of the cover crop season.

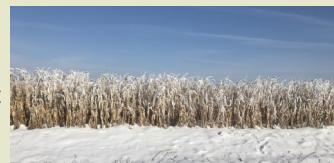
Cover crop mixes included in the study fell into three categories; 90% grass/10% broadleaf (% by seed count). 50% grass/50% broadleaf; and 90% broadleaf/10% grass. Grass species included; oats, barley, foxtail millet and sorghum sudangrass. The broadleaf blend included radish, turnip, pea and lentil. Carbon to Nitrogen (C:N) ratios of the mixes impact the nutrient composition of the cover crops and the residue decomposition speed. Grasses contribute more carbon while broadleaves provide more Nitrogen. Thus, the residue from the 90:10 grass to broadleaf mixture will decompose slower and release less Nitrogen than the mixture which is primarily broadleaf.

The study plots were planted following the 2017 wheat harvest at several South Dakota locations from Sturgis to Garretson, covering a full range of South Dakota environments. In the spring of 2018, the corn locations received replicated Nitrogen applications of 0, 40, 80, 120, 160 and 200 lbs./acre applied perpendicular and across the different cover crop treatments. Corn yields were measured on each treatment combination.

This was year one of the three-year, on farm demonstration study, and it is supported by the South Dakota USDA/NRCS. Initial results show that at four locations in eastern South Dakota, the cover crops had no negative effect on subsequent cash crops. Mixed effects were measured further west where moisture was more limited. Also noted was increased soil biological activity following cover crops at the Sturgis location. Results were not conclusive on cover crop effects on corn nitrogen requirements. Continuation of the work over the next two years should add clarity and conclusiveness. For more information on the project, contact Anthony Bly at Anthony.bly@sdstate.edu or (605) 782-3290.

Wet Corn: Storage and Late Harvest Options

With a very challenging harvest in many parts of south and south-eastern South Dakota this year, farmers were faced with difficult decisions. Wet, unfrozen ground in many areas and high grain moisture forced many farmers to make a decision: harvest the wet grain, or let it stand in the field.



Winter Standing Corn Considerations

At this time of year, there typically is not any significant field drying that will occur in corn. Most farmers are well aware of the risks that come with leaving corn standing over the winter, hoping corn stalks and cob shanks withstand winter winds and snows, so that a dryer harvest can occur in the spring. Losses from leaving corn standing over the winter vary greatly depending upon many factors like variety selection, field management, and weather. When making late harvest decisions, it is important to take the economic comparison of storing and drying high moisture corn versus field losses and damage to wet soils into consideration. Although it's been a tough harvest year in many parts of southern South Dakota, farmers still have grain storage options that can help maintain quality over the winter as long as bins are checked regularly and precautions are taken to avoid spoilage as spring temperatures draw closer. For further information and entire article contact [Sara Bauder](#), SDSU Extension Agronomy Field Specialist.

Check out Extension new website: <https://extension.sdstate.edu>

Soil Health Events

Registration Open For 2019 Soil Health Conference & Annual Meeting January 22nd-23rd

Early registrations are appreciated for planning purposes. **Register today!** This event is FREE to all 2019 SD Soil Health Coalition Members. The cost for non members is \$25 which includes a 2019 membership with the SD Soil Health Coalition. **Please visit our website for registration forms, online payment option, and additional information about hotel accommodations.**

Agenda:

January 22nd,
Days Inn, 2500 6th St., Brookings, SD

6:30 pm- Registration

7:00 pm Welcome

7:15 pm **Keith Berns—"Rebuilding Our Soils"**

8:15 pm Meet and Greet with the Speakers, SDSHC board, and Voices for Soil Health

January 23rd:
Club 71, Dana Dykhouse Stadium SDSU, Brookings, SD

8-9:00 am Registration

9:00 am Welcome

9:15 am Opening by SDSHC

9:30 am **Allen Williams "Adaptive Stewardship: How To Use The Powers Of Observation & Intuition To Work In Synchrony With Nature"**

10:30 am Break

10:45 am **Keith Berns "Carbonomics"**

11:45 am Lunch—Year in Review

12:45 pm Remarks—Dean John Killefer, CAFES, South Dakota State University

1:00 pm **Dwayne Beck "Making Management Decisions At The Ecosystem Level: Stopping The Bleeding"**

2:00 pm Break

2:15 pm **Producer Panel—Jesse Hall, Stehly Farms—Craig and Gene, Matt Bainbridge, and Kurt Stiefvater**

3:30 pm Annual Meeting

***CCA/CEU Credits Available To Attendees**

Calendar Of Events:

January 7th-11th:
2019 Holistic Management Roadshow

January 14th:
Winter Agronomy Meeting Mitchell

January 15th:
40th Annual Ranchers Workshop & Expo

January 15th-16th:
Soil Health Summit 2019: Rooted In Data Growing Success

January 16th:
Winter Agronomy Meeting Tyndall

January 17th:
2019 No-Till Event: Integrating Livestock, Building Soil

January 22nd-23rd:
SD Soil Health Coalition, Soil Health Conference & Annual Meeting

January 24th:
Northern Plains Food & Farming Conference

January 30th:
Upper James River Soil Health Forum

January 31st:
Winter Agronomy Meeting Burke

February 4th:
Save The Date, Edmunds County Soil Health Event



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Soil Health Producer Panel Held At 2018 Ag Horizons Conference *by Austin Carlson, SDSHC SH Technician*

Five South Dakota Soil Health Coalition (SDSHC) members shared valuable information during a conversation based discussion panel, held at the 2018 Ag Horizons Conference in Pierre, SD on November 27th. The discussion topic, "How to Manage Soils for Resiliency and Profit" provided each producer an opportunity to share how they are improving the land they help to manage, while increasing profits. Presenters, representing various regions throughout South Dakota, included Kurt Stiefvater of Salem, Dennis Hoyle of Roscoe, Levi Neuharth of Ft. Pierre, Bryan Jorgensen of Ideal, and Dan Forgey of Gettysburg. Each operation represented was unique in terms of production goals, yet all operators were unified in their commitment to improve soil health. The Five Principles of Soil Health that each producer strives to follow include 1. Maintaining soil cover, 2. Limiting soil disturbance, 3. Maintaining a living root in the soil for as much of the year as possible 4. Increasing plant diversity, and 5. Integrating livestock onto the land.

Throughout the state, annual rainfall can vary drastically, and this was one of the first topics addressed by the panel. The panel members shared their success with long term no-till despite differing weather and soil conditions. Excessive rainfall delayed fall harvest for many areas across the state this year. Several producers on the panel commented that the rain had not negatively affect field operations for them however, providing testimony that a healthy soil is resilient to varying weather conditions. Kurt Stiefvater shared that as he harvested he hardly left any visible tracks throughout his fields, and never considered finding a chain to pull equipment out, even though six inches of rain fell on his farm in October. Dennis Hoyle attested that healthy soils increase soil organic matter and water infiltration ability over time which lessened his concerns even though he also received excessive rainfall at the end of this growing season. While traveling down a gravel road headed to seed winter wheat and cover crops, Dennis left tracks and noticed mud being thrown from equipment tires due to the wet road conditions. Once in the field though, he was able to seed without any mud sticking to the drill or tractor and left no visible tire tracks. Once again, a healthy soil with adequate soil structure was shown to soak up the rain and store it in the soil profile eliminating the concern for compaction and other problems during harvest and planting activities.

All presenters shared helpful tips for increasing plant diversity including different options like implementing small grain cash crops and/or cover crops into existing crop rotations. Small grain crops can provide an extended time to seed and grow cover crops. All producers have successfully utilized cover crops and integrated livestock to graze them. Bryan Jorgensen stated "We find tremendous efficiencies grazing cover crops with lower feed costs and healthier animals. Observations from implementing the five Soil Health Principles include: greater water and nutrient management efficiencies, also, plants, animals, wildlife, and profits are happier, and my wife is even happier!" Dan Forgey shared that at Cro-nin Farms, they have a diverse rotation of 10-12 different crops. Diversity in the cropping system has been seen by Dan to significantly reduce disease, weed, and insect pressure, resulting in fewer crop expenses, while maintaining and even increasing crop yields. Levi Neuharth also mentioned that a benefit he has seen through his use of diversification includes cows that are far less stressed when grazing cover crops after calves are weaned.

Healthy soil ecosystems cycle water and nutrients more efficiently. Land management directly impacts the health of the soil. Every producer can take steps to improve their soils and encourage greater biological activity. This can be done using some of the practices discussed by the soil health panel members including adopting no-till practices, increasing plant diversity, and integrating livestock onto the land. These are all great options to improve soil health, resiliency, and profits.



Kurt Stiefvater



Levi Neuharth

