



January 2017 Issue:

Soil Visions

2016 Year In Review

View the table below to see all of the events that went on this last year.

Ag Horizons/Annual Meeting	Booth/Outreach	November 30, 2015
Agfest	Booth/Outreach	January 28, 2016
Media Training	Education	February 10, 2016
Dakota Farm Talk	Media	March, September, 2016
Spring Soil Health Series	Education	March 17-18, 2016
Ag Friday	Booth/Outreach	March 18-19, 2016
SDSHC Website	Outreach	July, 2016
Out on the Land	Media	June-November, 2016
Merit or Myth support	Media	June 2016
Mentoring network	Education	June-August, 2016
SE Research Farm Field Day	Booth/Outreach	July 12 and September 8, 2016
Stewardship for Healthy Landscapes	Field Walks	June 14-16, 2016
Clark County SRM tour	Field Walk	June 30, 2016
Banker/Influencer outreach	Outreach	August 4, 2016
Dakota Lakes Field tour	Field Walk	August 8, 2016
Soil Health School	Education	September 21-23, 2016
Soil Health Trifold	Outreach	March-September, 2016
Burleigh County Conservation District	Bus Tour	August 23, 2016
Holistic Resource Management-Greg Judy	Education	August 29-September 1, 2016
FFA Land Judging	Outreach	September 13, 2016
Newsletter	Member service	June, September, November, 2016
Infiltration kits	Education	September, 2016
Potter County Conservation District Cover Crop	Field Tour	October 5, 2016
Butter County Conservation District Cover Crop	Field Tour	October 7, 2016
SRM Excellence in Range Management	Field Tour	October 11, 2016
Eastern SD Water Conference	Outreach/Booth	October 27, 2016
Minnehaha County Cover Crop	Field Tour	November 15, 2016
Managing Soil, Maximizing Profit	Education	November 21, 2016

Upcoming Soil Health Challenge Events

January 31st and February 16 are the dates of two upcoming soil health events scheduled this winter for South Dakota.

The first soil health event will be held at Wall, SD on January 31st beginning at 9 and running until 4 PM MST. This event, which will be held at the Wall Community Center, will include presentations on soils of western South Dakota, soil salinity causes and remedies, soil microbiology, crop rotation and cover crop information. The event will finish with a farm panel discussion.

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Up Coming Events

Doug Doug Peterson Event Dates

- January 17 White River
- January 18 Belle Fourche
- January 18 (PM) Buffalo
- January 19 Lemmon
- January 20 Chamberlain

SD Soil Health Challenge

- January 31 Wall, SD
- February 16 Mitchell, SD

contact ruth.beck@sdstate.edu for more information

The second soil health event will be held at Mitchell, SD at the Highland Conference Center on February 16th. Beginning at 9 and running until 4 PM CST, this event will feature a number of well-known speakers including Jay Fuhrer, NRCS Soil Health Specialist, and Dwayne Beck from SDSU Dakota Lakes Research Farm. Other speakers will include Lance Gunderson from Ward Labs and John Pike, a cover crop expert from Illinois. A farm panel will round out the day. Lunch is included and CCA credits will be available at both events. Events are free but preregistration is requested for a lunch count. To preregister email ruth.beck@sdstate.edu. More information and full agendas for both events can be viewed at iGrow.org/events. This event is sponsored by the SD No Till Association, SDSU Extension, the NRCS and other business sponsors.

2017 Winter Soil Health Series

January 17-20, 2017

White River-Belle Fourche-Buffalo-Lemmon-Chamberlain



Doug Peterson has been an NRCS employee for over 28 years. He started his career as a Soil Scientist. He has been a District Conservationist in both a grassland based county in south Missouri and a large cropland county in north Missouri. He has also been a State Grassland Conservationist. Currently he is a Regional Soil Health Specialist teaching NRCS staff and producers around the mid-west about soil health, how it impacts virtually all natural resource processes, and what type of management it will take to effectively improve our soils health and productivity.

He grew up on a crop and livestock farm near Newtown in north Missouri. Today he continues to operate a cow/calf and contract grazing operation with his father, Steve. Currently they run about 350 cows. They utilize Management-Intensive Grazing and Holistic High Density Grazing to improve soil health, eliminate the need for most purchased fertilizer and limit hay needs to about one bale per cow per winter.

Doug's NRCS training coupled with his real world hands on experience make him a unique speaker that is relatable to both agency personnel and producers.



January 17-White River-Ranchers Workshop-9 AM-3 PM

Location: Community Events Center -501 2nd street
RSVP: Lealand Schoon: 605-259-3252 Ext. 3

January 18-Belle Fourche 11 AM-2 PM

Location: Branding Iron Steakhouse-10979 US Hwy 85
RSVP: Justin Boerboom: 605-892-3368 Ext. 3

January 18 (PM)-Buffalo-5 PM-8 PM

Location: Harding County Memorial Recreation Center-204 Hodge St W.
RSVP: Jaime Fuhrman: 605-375-3218 Ext. 3

January 19-Lemmon-1 PM-4 PM

Location: Benny's-200 Main Ave
RSVP: Sarah Eggebo: 605-244-5222, Ext. 107

January 20-Chamberlain-10 AM-2 PM

Location: Americinn-1981 E King Street
RSVP: Josh Lefers; joshlefers@hotmail.com, 605-770-2989

Persons needing accommodations should contact the listed contact for their location one week prior to the event. The NRCS, FSA, County Conservation Districts, and SDSU Extension are equal opportunity providers, employers and lenders.



“Growing Healthy Communities”

I've recently been watching a series of videos produced at the 2016 Fuller Field School in Kansas called “Growing Healthy Communities”. The first two videos I was able to catch featured Dr. Christine Jones's talk [“Soil Carbon – the Mycorrhizal Connection”](#) and Gabe Brown's talk [“A Simple Man's Take on the Current Production Model”](#). After what I've seen from just two videos, I will without a doubt be checking out the rest of [the video series](#) soon!

After listening to just a few minutes of each, it was easy to grasp their practical, big-picture message. Christine Jones is incredibly eloquent in the way she articulates the need for diversity, not to mention the way she discusses photosynthesis (or what she terms, “harvesting sunlight”) and why we need to maximize it in our fields. If you have ever wondered what that term really means, I believe Christine will help you get to the bottom of it!

In Gabe Brown's talk, he challenges a numbers of widely-held, and perhaps cherished, assumptions common to modern day production agriculture. I'll leave you to figure out what they are. The funny thing is that Gabe is not advocating for more inputs, more equipment or more technology. The alternative that Gabe proposes is perhaps even more difficult than an extended line of credit at the bank. What he proposes is a [change](#) in the way we look at growing our food and fiber.

Hope for a Brighter Tomorrow

While it's not always comfortable for others to challenge our own long-held paradigms, the underlying message I get from these two talks is.... Hope. The theme of the 2016 Fuller Field School was “Rejuvenating healthy soil, growing healthy, nutrient dense food, managing water effectively, attracting wildlife and building resilience for future generations”. These ideas represent hope and are the real-world outcomes of the regenerative farming mindset. Hope in less inputs, lower operating costs and ultimately a better quality of life. I challenge you to watch the videos without being changed!

This Hope is in South Dakota

This mindset is not limited to North Dakota, Kansas or Australia, by the way – just take a look at South Dakota USDA-NRCS's [YouTube Channel](#) and you will be blown away by the number of folks in the [Mount Rushmore State](#) who have decided to change their way of doing business.

We look forward to releasing our next [video](#) where we talk with SDSU's Dr. Pete Sexton, a big advocate of building community around farming!

– Buz Kloot

“Tighty Whities”

Authors – Anthony Bly and Sara Berg

Soil is probably our most important natural resource. It is the foundation or factory for producing food. Without healthy soil, the system eventually fails; many civilizations in history have risen and fallen with the over-exploitation and demise of their soil resources. Soil offers several services for plant and animal production that include providing an anchor for healthy plant roots, offering essential plant nutrient uptake, supplying water storage, and cycling and storing carbon and other nutrients for improved and sustained plant growth in future years.

Improving and maintaining soil health is the ultimate example of sustainability. Without preserved and improved soil health condition, a food production system is not sustainable. Past and current soil management has greatly involved the inorganic side of the soil and plant system. Soil microbiology is minimally understood and many soil microbiologists recognize our limited understanding of the soil food web. For most soil health advocates, the importance of soil microbiology is recognized, although difficult to demonstrate, until now. A very simple demonstration using men’s underwear briefs is very effective in showing the results of crop production management on soil health.

Soil microorganisms require carbon to survive. Men’s cotton underwear briefs contain high amounts of carbon. Therefore, briefs can be buried in the soil and retrieved later to see and evaluate soil microbiological activity and ultimately, soil health status. During the South Dakota Soil Health Coalition’s first Soil Health School in the Aberdeen and Ipswich areas, a “Tighty Whities” demonstration was conducted. The briefs were buried to about the waistline in the soil five weeks ahead of the school at 3 sites that included: corn with conventional tillage, soybeans under mulch tillage, and no-till soil currently with growing cover crops. Soil health school participants had the opportunity to extract the briefs and view the results of five replicates in each field. Results were revealing...to say the least.

A new brief was compared to one brief from each field. The first soiled brief in photo 1 (second from the left) was from the no-till field with cover crops. Hardly anything remained of the brief, indicating extensive soil microbiological activity. The brief from the mulch (reduced) tillage soybean field (third from the left) had more material remaining when compared with the no-till/cover cropped soil, and the conventional tilled corn (for right) had the most material which indicated the least soil microbial activity. All 5 briefs buried at each site were weighed, with the results matching the degradation observed in the photo (table 1).

Soil microbial activity is a key soil health indicator. Crop producers concerned about too much residue when converting to no-till should know a cover crop/livestock integrated system can help utilize and manage plant residue levels. Most seasoned soil health producers recognize the value of the soil microbial kingdom and often refer to it as “the herd”. For more information about soil health and the importance of soil microbiology, please visit the NRCS Soil Bacteria page.

Table 1. “Tighty Whitie” demonstration data set, 2016 Soil Health School, Aberdeen, SD

Brief Condition (picture order, left to right)	Average Brief weight (grams/brief) 5 replications
Control – non-buried	58.5 a
No-till soil with cover crops	28.4 c
Mulch (reduced) till soybeans	48.3 b
Conventional tilled corn	50.8 b
Stats:	
Pr>F	0.001
CV	7.7
LSD(.05)	4.9

Brief averages with different lower case letters are significantly different.



Photo 1: “Tighty Whitie” demonstration, 2016 Soil Health School, Aberdeen, SD.



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News Release

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Building soil health and protecting food production for generations to come is the focus of many farmers and ranchers. One doesn't have to look far down the road for producers working with mother nature, rather than against her, to produce more using fewer natural resources.

The Bainbridge Family near Ethan is one example of an operation changing tactics to stay ahead of the curve. Matt Bainbridge farms with his father, Lewis and brother Neil, raising crops & cattle in Davison County. Matt Explains no-till has been utilized on the family's acres for two decades. Along with no-till, the family diversifies cropping types to feed the soil.

"My dad brother and I are driving around looking at fields we'll see a field that's maybe in some trouble spots maybe some alkali or we've drowned it out the last couple years or something. And you know we come to kinda an agreement that well, its probably time to rotate the wheat here, lets get something different going on, lets get them planted in the fall and have a chance. Lets get some cover crops planted there and change it up and same thing is true with the weeds now that we are having, if we have water hemp in the field really bad we're gonna rotate to wheat."

Keeping wheat in the rotation is not always profitable on the annual bottom line, but Bainbridge explains productivity is a long-term quest.

"The economics have kinda kept the wheat a little bit out of our rotation we are still trying to plant a little bit of it especially in light soil and then trying to on the better soil still ever 5th year get the winter wheat across there. If we know that a field is close by though we want to have cover crops planted to graze the cattle on in the winter. We still plant it to winter wheat even if it doesn't look like its going to cash flow very well."

Hear more voices of conservation of the NRCS on their Youtube Channel. Helping people Help the land.



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