DIRECT SEED LINK

Pacific Northwest Direct Seed Association

Summer 2018

The sun is shining, the days are long, and winter seems a million miles away. As every farmer knows, though, now is the time to plan for it!

Make sure your winter plans include the 2019 Direct Seed Conference. This year's theme is "Fundamentals, Fertility, and Food" and it will be held January 8-9, 2019 at the Three Rivers Convention Center in Kennewick, Washington.

It will feature a number of incredible speakers and breakout sessions to educate, inform and inspire the attendees. We are thrilled to announce key note speaker **Dr. David Montgomery**. A professor of geology at the University of Washington, Dr. Montgomery has also authored three books on the importance of healthy soil and no-till farming.

Other speakers include:

George Vandermark is a research leader with the USDA/ARS whose research primarily focuses on chickpea production in the Palouse region of Washington and Idaho. His work aims to increase yield and seed size as well as decrease time required for development and maturity. He will discuss garbs as a rotation crop.

Dr. Curt Livesay is the co-owner of Dynamite Ag and is a Certified Crop Adviser who specializes in plant nutrition and soil fertility. He will present on imbalanced soil, how it affects soil and how to turn it around

Dr. Jill Clapperton is an in-demand and well known international lecturer and advocate of soil health. She will be presenting with Dr. Livesay

Lana Shaw, Pag, MSc is a research manager with South East Research Firm in Saskatchewan. She will deliver a keynote presentation and break out session on Cover Crops.

Noah Williams is an Eastern Oregonian dryland farmer who will lead a breakout session where he will share his results from using garbs and cover crops .

Information regarding sponsoring or exhibiting at this year's conference will be coming soon so keep your eyes open and we look forward to seeing you there!

CROPPING SYSTEMS CONFERENCE

"Provide information exchange, advocacy on conservation policy issues, access to value-added benefits, and research coordination that supports the adoption of environmentally sustainable and economically viable direct seed cropping systems."

PNDSA MISSION STATEMENT

In This Issue

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President's Pen: The Path to Precision Ag

So once again it is newsletter time and I have been asked to write to you. I was to write an article about what I do on my farm with precision AG. I will write about my precision ag experience in two parts.

I wasn't the first one in my area to begin to Direct Seed, but I was probably the first one to do variable rate seed and fertilizer. Direct Seed happened during the same year for me. We got started with our precision AG in 2009 by purchasing our first gps unit. It was a Trimble FMX system with EZ steer. Also that year we purchased the components to build our first No-till drill. We took a Flexicoil 820 cultivator and we mounted valley packer wheels on the shanks. We bolted Flexicoil 2 ½" stealth paired row openers to the shank. At the time we also added ammonia anhydrous capability to the drill. The ammonia anhydrous system also has section control for each section of the drill.

As time has gone by, we have gotten deeper into precision AG. There are a lot of components to our system. Part one is the drill, which we just discussed. Part two is the combine.

In 2010 we purchased and installed a yield monitor on the combine. The yield monitor helps us keep track of the yield on every acre of the crop land. A yield map is one part of several maps that are needed to make accurate Seed and fertilizer maps in the future. There are people out there that say they can build entire maps off of just yield maps. Do not believe them!

In 2015 we purchased and installed a protein monitoring system called Crop Scan. It was a system developed in Australia and brought to the US. It is a very easy, workable system that is very easy and compatible with most field mapping software systems.

Part three, and probably the most important part for precision AG to be successful, is soil testing. We have set our farm up on a 30 acre grid sampling system. We use a handheld gps system to find the exact point each time. At each grid point we pull 5 samples, in an approximate 50 foot circle, we pull 2foot samples, pulling each foot separate from each point. We composite each foot together, bag them, and then send them into the lab. We always try to take our soil samples at the same time of the year, every year. For us in Ione, Oregon, We try to pull them in the fall during the last week in August to the first week in September.

The combine yield monitor, the protein maps and the soil maps are all the components to beginning precision AG. In part two of my description of my precision ag experience I will get in depth as to how and why we use all these different systems.

I hope that you all have a safe and bountiful harvest and that the good Lord gives you the means to be successful this year.

Keith Morter

PNDSA President

Using High-Carbon Char as a Soil Amendment to Improve Soil Properties

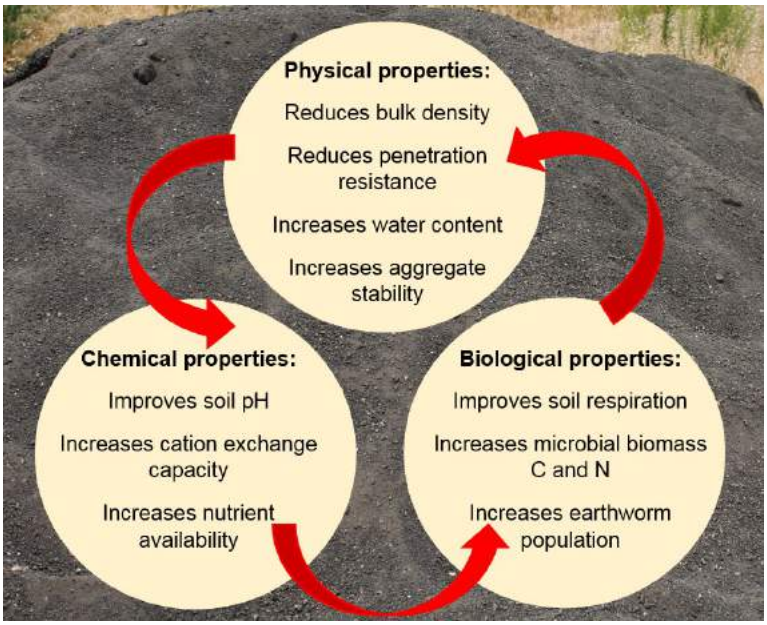
The University of Nebraska Cropwatch

Soil carbon (C) is an important indicator of soil health and an integral part of the physical, chemical, and biological properties of the soil. Loss of soil carbon can lead to soil degradation and loss of productivity.

Soil carbon is lost from the soil through erosion, residue removal, intensive tillage, and land-use changes. Carbon-enriched soil amendments, including animal manure, bio-solids, municipal compost, and biochar, among others, can restore soil productivity (Figure 1).

History of Carbon-Enriched Soil Amendment

Addition of carbon-enriched materials to the soil is not a new practice. Thousands of years ago, the indigenous people of the Amazon basin used charcoal-like material from cooking and heating as a soil amendment to agricultural soils. Through the addition of this carbon material, the indigenous people created what are now called the Terra Preta soils of the Amazon.



The Terra Preta soils are deep, dark brown, rich in nutrients, and contain significantly large amounts of soil organic matter compared to the surrounding soils. In addition, these soils have higher water-holding capacity; all of which make the soil highly valuable and productive. The Terra Preta soils are an excellent case study illustrating the long-term success of using high-carbon materials as soil amendments.

What Is High-Carbon Char?

Another potential carbon-enriched soil amendment with properties similar to biochar is char, also known as high-carbon char. High-carbon char is a residue from incomplete burning of coal such as during sugarbeet processing at the Western Sugar Cooperative near Scottsbluff.

The plant produces 35,500 tons of high-carbon char per year from their sugar manufacturing process (Figure 2). High-carbon char from the Western Sugar Cooperative in Scottsbluff contains 30% carbon, 0.37% nitrogen, 0.22% phosphorus, 4.76% potassium, 4.76% calcium, 1.08% magnesium, and 0.51% sulfur in addition to many plant essential nutrients. Like other by-products recycled as soil amendments, including bio-solids and manure, potential contaminants need to be considered when using high-carbon char.

High-carbon char from the Western Sugar Cooperative contains heavy metals well below the EPA's loading limit, making it safe for agricultural recycling.

Impacts on Crop Yield, Soil Properties

Researchers at the University of Nebraska–Lincoln are investigating the use of high-carbon char from Western Sugar Cooperative as a soil amendment to increase soil carbon, improve soil physicochemical properties and enhance crop productivity. Studies are being conducted on sandy loam soils near Sidney and Scottsbluff.

At Sidney, researchers applied high-carbon char at two sites (degraded and non-degraded) at six rates (0; 3,000; 6,000; 9,000; 12,000; and 18,000 lbs per acre) with four replications. The crop rotation consists of a three-year rotation of wheat, corn, and field peas. At Scottsbluff high-carbon char was applied at four neighboring fields (W1, W2, W5, and W6) at the Mitchell Agricultural Lab at five rates (0; 3,000; 6,000; 12,000; and 18,000 lbs per acre) with five replications. The crop rotation consists of a four-year rotation of corn, dry beans, corn, and sugarbeet.

High-carbon char was applied in spring 2016 and roto-tilled into the top 6 inches of soil at both sites (Figure 3). Soil was sampled at the 0-4 inch depth in spring 2017. The impact of high-carbon char on crop yield and soil physical and chemical properties including soil compaction properties (soil bulk density, penetration resistance, and shear strength), soil water content, cation exchange capacity, total carbon, and macro- and micronutrients was studied.

(Continued on page 7)

Partner Profiile: Monsanto

In honor of the 4th of July holiday, it's a good time to remind you that Monsanto's Roundup PowerMax and RT 3 are always made from materials mined and formulated in the U.S.A.! Monsanto brands have the highest glyphosate acid content of any product on the market. The acid, not to be confused with the active ingredient, is what kills weeds. The active ingredient is the glyphosate acid plus the salt carrier. Monsanto uses the most efficient salt carrier, thus at 4.5 pounds of acid per gallon, you're getting your money's worth with PowerMax or RT3. To ensure that the acid is taken up by the weeds and effectively translocated, Monsanto uses Transorb technology in every gallon. To protect against the development of resistant weeds, always tank mix with at least one other herbicide with a different mode of action.

With over 1.5 billion dollars per year being devoted to research and development of new products, Monsanto continues to invest in the future of farming. With the increase of resistant weeds, insects and diseases, farmers will need solutions. It's companies like Monsanto that are at the forefront of providing these solutions for future generations of farmers.

GMO Fun Facts:

First country to allow commercialized growing of a GMO crop?
Answer: China, 1992, virus-resistant tobacco

First GMO food to hit the U.S. grocery stores?
Answer: Flavr Savr tomato, 1994

A 2014 meta-analysis determined that GM technology has reduced pesticide use by how much?
Answer: 37%

Average time to develop and test GMO seeds before they're grown commercially in the U.S.?
Answer: 13 years

*For more information about GMO crops go to:

Summer on the farm

Thank you to the 2018 PNDSA Partners:

Support the PNDSA, a non-profit with the mission to provide direct seed producers support, research, mentoring, demonstrations, programs, meetings, and conventions with the ultimate goal to increase the number of direct seed acres.

Click here to find out more about the PNDSA's partnership levels and benefits.

Executive Director Update: Strengthening Ties in the PNDSA

By Ty Meyer

As spring seeding came to an end and summer has quickly arrived for many of us, I want to wish everyone a productive and safe harvest season.

Your Direct Seed Association has been hard at work on many fronts over the last few months. We started planning the 2019 conference back in April and we have a great committee working to bring you another world class conference. It will have a local emphasis this year with many great speakers and topics to help you with your direct seed and no-till systems.

We had a field day in Ritzville at the Dewald farm where three drills were demonstrated in heavy stripper header residue. Bourgault and John Deere disc drills were run along with an Ag Pro hoe drill. We had a Weedit spot sprayer that was operated in the tall residue and we had a stripper header on site for people to look at. With more than 130 people in attendance, it was a tremendously successful day providing a real time look at equipment currently being used in the fallow areas for direct seed and no-till operations. I look forward to more of these field days in the coming years in different locations across our region.

PNDSA has continued discussions with regulators and interested parties in Oregon concerning the Farmed Smart certification program. We have had great work sessions in Oregon and we look forward to some great partnerships with them in the future.

For our many conference sponsors and association partners, we have been developing a more comprehensive package of benefits and opportunities that we believe will strengthen our relationships even further. And our committee is reviewing new technology for our conference that will enhance the networking opportunities for attendees and vendors making it easier to connect with those people having similar interests. Watch for information about this in our upcoming newsletters and Association emails.

You will begin to receive information soon on our annual conference that will be held next January 8th and 9th in Kennewick. It's going to be a great conference as you will soon see with many of the speakers already confirmed.

Have a great summer and a safe harvest!

Ty Meyer

PNDSA Direct Seed Equipment Demo Day at Rob and Susan Dewald's Farm, June 5th, 2018

DIRECT SEED LINK
Pacific Northwest Direct Seed Association Summer 2018

Grower Profile: Rob Dewald

by Bethany Jones

The name Rob Dewald is well known to the PNDSA family, having served as president and also being the recipient of the 2016 Pioneer Award. A passionate advocate of direct seed farming, Rob is the fourth generation working his family farm in Ritzville, Washington as well as land just north of Davenport, Washington. Frustrated with the level of both water and wind erosion he was seeing, Rob decided in 1985 to give direct seeding a chance. It was a big leap of faith and led to many sleepless nights as many told him it simply would not work. "Everybody's scared that it won't work," Rob says. "They always told me I'd go broke. I had college professors tell me it wouldn't work." The first year, though, he experimented on 80 acres on his Davenport farm and was impressed enough with the results that the next year he direct seed farmed 100% of that land and began working his Ritzville land in the same way. By 2004, all of his operations had converted to direct seed and his neighbors had taken notice of the success, some even dipping their toes in the process as well. As Rob says, "The results speak for themselves."

The next generation of Dewald farmers are already working alongside Rob and his wife Susan. Their two sons, both WSU grads, work on their farms while their daughter is currently working on her PhD in Ag Leadership, Education, and Communication at Texas A&M. A family of "outside of the box' thinkers, the crops they have or are currently growing include chem, fallow, winter and spring wheat, barley, yellow and condiment mustard, and spring canola.. They also grow peas, sunflowers, and even grass for seed. In his rare free time, Rob is an avid fisherman as well as motorcycle enthusiast.

Rob Dewald sporting some great looking headwear!

When asked what his advice to other growers considering direct seed farming would be he recalled farmers from the last century making the scary switch from horse-run equipment to diesel. It is difficult to change from what has always been done and it will take time but eventually the health of your soil will be worth the leap. His goal is to return the soil as much as possible to the state his great grandfather found it when he homesteaded the land in 1889. Already he knows that he will pass on better soil to his children than he received from his father. The color and texture of the soil and the crops it produces it far deeper and consistent than his non-direct seeding neighbors. He has seen an increase in organic matter as well as beneficial organisms and worms (perfect for his all too infrequent fishing trips!) "Try it and stick with it," he says.

Indeed.

"Try it and stick with it!"

A big thanks to Rob Dewald for his time on this article as well as his advocacy for farming practices such as Direct Seed farming which lead to healthier soil and food for generations to come!

PNDSA Direct Seed Equipment Demo Day at Rob and Susan Dewald's Farm, June 5th, 2018

High Carbon Char (continued from page 3)

What Researchers Found

There was no significant increase in crop yield with high-carbon char application for the first year. In addition, high-carbon char had minimal influence on soil physical and chemical properties. Bulk density and shear strength were unaffected by high-carbon char application at the Sidney and Scottsbluff sites.

However, the degraded site in Sidney showed a trend of reduced penetration resistance, indicating that roots could more easily penetrate through the soil where high-carbon char had been added. In addition, results from one of the fields near Scottsbluff (W2 field) showed a significant increase in soil water content. At the degraded site near Sidney, total carbon content increased by 90% with 9,000 lbs per acre and 149% with 18,000 lbs per acre of high-carbon char application compared with control (no high-carbon char) plots.

Conclusion

Use of high-carbon char as a soil amendment can increase soil carbon concentration. For example, total carbon content increased by 149% with 18,000 lbs per acre of high-carbon char application in the Sidney degraded site. High-carbon char, in general, had no effect on crop yield and soil physical properties in the first year.

High-carbon char may have positive effects on crop yield and soil properties in the long-term as it takes time for the char particles to react with soil particles. Overall, high-carbon char shows promise as a soil amendment, but long-term monitoring is needed to determine the impacts of high-carbon char on soil properties and crop yields.

Read the full article on https://www.no-tillfarmer.com/articles/7619-using-high-carbon-char-as-a-soil-amendment-to-improve-soil-properties.

If you like this article, go to No-Till Farmer.com and sign up for their twice-monthly Dryland No-Timmer email newsletter.

AS A NON-PROFIT, THE PACIFIC NORTHWEST DIRECT SEED ASSOCIATION RELIES ON SPONSORS AND EXHIBITORS TO BRING IN HIGH CALIBER SPEAKERS TO MAKE OUR CONFERENCE A SUCCESS. IF YOUR ENTITY OR AG BUSINESS BENEFITS FROM OR SUPPORTS DIRECT SEEDERS, PLEASE CONSIDER SPONSORING OR EXHIBITING AT OUR CONFERENCE. THANK YOU!

To Become a Sponsor
Please Contact Us at:
(P) 509-585-5460
(F) 509-585-2671
or email
snolan@agmgt.com

CROPPING SYSTEMS CONFERENCE

Save the Date! January 8-9, 2019

Mark your calendars! The 2019 Cropping Systems Conference will be held January 8th and 9th at the Three Rivers Convention Center in Kennewick, Washington. Stay tuned for sponsorship, exhibitor, presenter, and registration information.

PNDSA Membership

Interesting in becoming a member of PNDSA? Your membership fee is tax-deductible and will help PNDSA's mission to help more farmers adopt direct seed farming practices within Washington, Oregon, and Idaho. Here is just some of what the PNDSA offers:

- Annual Pacific Northwest Direct Seed Cropping Systems Conference (Members take advantage of reduced conference fees.)
- Representation to government on policy and program development that effect the environment and direct seed growers.
- Your source for the latest information and research on direct seed cropping systems.
- Peer support for growers developing their direct seed cropping systems.
- Input to research throughout the Pacific Northwest.

Click here to find more information on membership levels and benefits and to sign up today!

Contact Us

Contact us for more information about our services and products

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