Dubois County Soil & Water Conservation District

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Winter, 2019-2020

The Conservation Conversation

LSI Notes from the Field

2019 was a year of growth in new directions for the Land Stewardship Initiative – growth in the fields as summer cover crops were introduced to a field, growth in height of cover crops and growth in target audiences reached. Like most farmers in the county, state, and the Midwest, this was a stressful year for farming. The heavy spring rains prevented planting in the fields until May 25th and continued rain made timing of additional passes on the fields difficult to plan and implement.

In April, two French drains (a gravel filled trench directing water to an underground perforated tile) and three lines of tile were added to field 5 to help with drainage. A French drain was added into an existing tile line in field 7 and began functioning properly almost immediately, eliminating cuts in the field caused by rainfall.

For the first time in the history of the project we experimented with planting green. This means that the cover crops were still alive and growing at the time of planting. The standing Cereal Rye was 54 inches tall. The planter had no problems driving through the vegetation and placing seed down at the proper depth. Immediately after planting, the cover crops were rolled down using a roller crimper. This created a mat of biomass over an inch thick to help retain moisture in the soil, prevent erosion and reduce weed pressure.

The abundance of rain in the spring caused corn county-wide to appear lime green in color. LSI was no exception to that. Low lying areas of the fields and natural seeps decreased or eliminated patches of corn. An aerial application of fungicide was flown on with a helicopter this summer.

The 11 species of cover crops in Field 6 all bloomed and grew at their own pace. Buckwheat flowered early in the season. Hairy vetch bloomed continually throughout the summer and fall. The growing season concluded with

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a beautiful show of pearl millet and sun hemp. The clover grew and added nitrogen to the soil. The deep roots of several of the species should create good channels for next year's crop growth. The decaying plant matter will add to the soil organic matter and the nitrogen fixed by clovers and beans (legumes) will be available to the 2020 cash crop.

We strengthened our outreach involvement with new audiences. In May, over 100 students from Fifth Street elementary school visited VUJC for a science field trip day where they were introduced to the concepts of Soil Health with the Slake Test. They also learned about soil horizons using a soil probe to compare forest soils to grassed lawn soils.

The annual fall workshop for local farmers included a tour of the property with Travis Gogel (NRCS) to discover the attributes of the summer cover crops growing in field 6. Rob Bruner (Purdue Extension) spoke about how the climate and dramatic weather events are changing and will continue to influence the way we farm. He demonstrated how to use drones to spot issues in fields such as weeds or nutrient deficiencies. Dr. Shalamar Armstrong (Purdue University Professor) shared his research on how the adoption of cover crop can reduce nutrient loss on a watershed level.

In October, freshmen from all four of the Dubois County High Schools went on a "Tour of Opportunities" day - where they explored and toured local businesses, learned about career opportunities in various fields and had hands on experiences. 55 students chose the agriculture career track and toured VUJC learning about different career opportunities within the agriculture field.

Despite the delay in planting, harvest still occurred in early October. 2019 was the second highest average yield over all fields combined since the project began. Field 7 which was planted green had an average of 10 bushel an acre higher than the other fields. This is a positive success for planting into growing cover crops which requires slightly different management techniques. Gaps exist in the harvest data and weeds such as cocklebur and morning glory created challenges in small areas in the fields. Overall it should be noted that the harvest was better than anticipated given the challenges of the year.

In 2020, the fields will once again be planted with corn. This is a continuation of the goal of increasing the organic matter in the soil. Field 6 will return to production after a year of rest and regeneration with summer cover crops. As an added experiment, the Ag Committee decided to keep the chemical burn-down in fields 1,2, and 5 the same as in 2019. However, to explore possible explanations for the bpa yield bump in field 7, the 2020 plan is to burn down a strip of cereal rye in field 7 and allow the remaining acres of the field to continue growing and once again plant green into standing cover crops.

VUJC
Land Stewardship
Initiative
soil health...the root of everything

Friend of Conservation

On Tuesday, February 4th, at the 74th SWCD Annual Meeting held at St. Anthony Community Center in St. Anthony, Charmian Klem was presented with the 2020 Friend of Conservation award. Because Dubois County has many champions of conservation, the Dubois County Soil and Water Conservation District presents an annual award to recognize their efforts.

Klem grew up on a farm near St. Henry. At age twelve, her father switched to intensive grazing practices and organic farming. Because of these changes to her father's farm, she feels that "conservation practices are in her blood". She believes the health of the food we eat is directly associated to the health of the soil. She also believes that when people immigrated to the United States, the soil was found to be much better than the lands they had just left. She stated, "Some soils are more valuable because of the life that is in it."

She believes that others should set goals of having fertile soils by using methods to improve and maintain the quality of the soil. She also believes that it is so worth it to educate yourself and go beyond traditions and conventions. She and her three children organize time for their own home invasive species clean-up and have a 'no-till' garden using old straw as mulch.

Klem and her family have participated in the Family Nature Fest, the Creek Sweep, Patoka Lake Water Plant Tour and Patoka Lake Dam Tour. She continues to support her dad's farming operation by doing his record keeping once a week. She is in her second term as a Dubois County Council member and is a liaison for the Dubois County SWCD. Through her many years of effort with the County Wage Study, all county employees now receive appropriate compensation for their dedicated service to the residents of the county. She is a busy mother and a self-employed Independent Beauty Consultant with Mary Kay Cosmetics. She is also a small group leader for a Wednesday night bible study group at Redemption Christian Church.

Conservation Farmer of the Year

The Dubois County Soil and Water Conservation District presents an annual award to a Dubois County farmer who uses good soil and water conservation practices on their farm and puts extra effort into conserving natural resources. During the SWCD's 74th Annual Meeting held at St. Anthony Community Center on Tuesday, February 4th, 2020, Nick Stevens with Old National Bank; Alex Hohl, Direct Sales Manager for Beck's Hybrids; and Brenda Sermersheim with German American Bank presented the 2020 Otto J. Bauer Outstanding Conservation Farmer of the Year to Brad and Andrea Welp with Welp's Grain and Livestock.

A life-long farmer, Welp began farming with his father. He now owns 190 croppable acres and rents more acreage. Along with his father, an uncle, and his wife, Andrea, he farms full time raising corn, soybeans, turkeys, cattle, and hogs. He has a thoughtful management style. He believes it is "most feasible, practical, and saves money when things are done properly." His goal is to keep everything in working order and maintaining it in good shape in order to pass it on to his children, 3 ½ year old Benton and 1 year old, Brogan.

In the past, Welp has participated in several different NRCS EQIP programs. He has installed WASCOBS, underground outlets, and grassed waterways, used cover crops and no-tilling practices, and implemented nutrient, pest, and manure management. He believes the cover crops on his property have reduced soil erosion, built soil structure, and help improve water quality. On his own, he has built several dry dams, installed tiling, and removed an old barn to improve the croppable acres. In September, Welp hosted the 2019 Dubois County SWCD Soil Judging Contest.

Welp recognizes one of the best reasons for being a farmer is the freedom to set your own daily schedule. Another reason is the feeling of satisfaction reaping the benefits of your own labor.

The Otto J. Bauer Outstanding Conservation Farmer of the Year award is named in memory of Otto J. Bauer, who was a champion of soil and water conservation efforts in Dubois County and a member of the SWCD Board of Supervisors from 1969-1986.

Brad and Andrea Welp receiving their Conservation Farmer of the Year sign

from
Alex Hohl with Becks Hybrid,

Nick Stevens with Old National Bank,
and
Brenda Sermersheim with German American Bank.

Supervisor of the Year

Brenda Sermersheim, Chair of the Dubois County Soil and Water Conservation District (SWCD) was named 2019 Supervisor of the Year. She received the award at the Indiana SWCD Annual Conference Award Banquet at the Indianapolis Marriot Downtown on Tuesday, January 14. The Indiana Association of Soil and Water Conservation Districts presents the award to honor exemplary Soil and Water Conservation District leaders, "supervisors", for service and leadership in the protection and enhancement of Indiana's soil and water resources. Indiana Prairie Farmer Magazine sponsors the award; Tom Beckman, Editor, made the presentation.

There are five supervisors in each of the 92 Soil and Water Conservation Districts in Indiana. Sermersheim has served as a Supervisor since 2008, the first and only woman to do so in Dubois County. She has been Chair for the SWCD since 2012. Sermersheim is Vice President, Agriculture and Commercial Banking, for German American Bank.

As an advocate for the SWCD, Sermersheim guides the Supervisors to implement policy and set the goals for the SWCD staff. The SWCD works with landowners in the county to coordinate assistance from many sources and find solutions to conserve land, water, forests, wildlife, and related natural resources. She has been instrumental in working with the Dubois County officials and increasing the Dubois County staff to eight members.

Sermersheim was raised on a family farm in Perry County and currently resides in rural St. Anthony with her husband, Roger Sermersheim. His family adopted conservation practices, including no-till, at least 40 years ago. Both farms are good examples of sound conservation practices, including grassed waterways, water and sediment control basins, and 100% no-till farming practices. When learning of Sermersheim's selection for this award, Roger Sermersheim said, "Brenda does nothing half way. If she is involved in something, she gives 100% effort."

Sermersheim currently serves on the Purdue Extension-Dubois County Agricultural and Natural Resources Advisory Committee, and the Dubois County High School Agricultural Advisory Board, serving the four high school agricultural programs. She is a member of the St. Anthony 800 Club and St. Anthony Catholic Church and is a former member and president of the Kiwanis Club of Holland, former treasurer for the Dubois County 4-H Council, and formerly on the selection committee for Dubois County Habitat for Humanity. Sermersheim was recognized twice as a Dubois County Athena Leadership Award Finalist.

This time of year, especially after you have shifted from grazing to fed feed; such as, hay or balage, you might start wondering why you have the number of livestock that you have. Life is short, some animals just need to grow some wheels. I said it recently, but I'll quote the late Gerald Fry again, "If you cull the ten percent you should be culling, the herd that's left is just that much better."

Are the grazing livestock in balance with the forages present?

It's probably a good thing to question the number of grazing livestock you have, especially when you are feeding them stored and/or bought feed. I was at a meeting recently and was asked a familiar question about how many acres you need to have per cow. That is a question that can't be answered quickly, at least not accurately.

What does the question on "acres per cow" have to do with winter feeding? It's important if you care about cow cost and inputs. Winter feed costs usually make up the majority of annual maintenance expenses of keeping a cow. If you have enough forage available, you have potential to graze more days and the more grazing time you have for the cows, or whatever grazing livestock you have, the less fed feed you will need.

There are several variables to this "acres per cow" question. Let's first look at the dry matter requirements of a cow for a year. To keep the math easy and to also mimic a common unit, let's use a 1,000-pound cow or one animal unit (AU) which is one thousand pounds live weight. If that cow had weighed 1,200 pounds, she would be 1.2 AU's.

How much will this 1,000-pound cow eat in a year? The factors that influence the amount a cow will eat include her weight, body condition, and stage of pregnancy or lactation. Quality and availability of forage can certainly influence intake. In most cases, the average maintenance intake is about 2.6% of the body weight up to about 3.5% at peak lactation or slightly higher if a first calf heifer. A safe average number to use is generally 3%.

So, that 1,000-pound (1 AU) cow will consume on average thirty pounds of dry matter per day. That thirty pounds of dry matter needs to meet her nutritional needs. She generally won't consume much more than that amount, so what she eats must meet her needs or she will lose weight. Her average yearly dry matter intake will then be 10,950 pounds.

Let's pause and think about this for a moment. To feed this one, 1,000-pound cow for a year, without any waste considered or harvest efficiency figured, she's going to need to consume 5.5 tons of dry matter from pasture or fed feed. Let's first look at what this would look like as dry hay. That 5.5 tons in 1,500-pound round bales (not corrected for moisture) is equivalent to approximately 7.3 round bales or about 180 small square bales.

When you harvest hay off a field, the average harvest efficiency is about 70%. The remaining is stubble left after mowing and lost, missed, or dropped leaves. At 70% harvest efficiency, the amount of gross dry matter produced to make the 10,950 pounds of dry matter harvested is actually 15,643 pounds.

If you kept the cow in a pen and carried everything to her, then we have to also consider feeding efficiency and possibly storage loss. Sadly, hay stored outside, on the ground, and fed directly, can have high wastage. We can have similar wastage when they are grazing. Some of the wastage easily seen comes from forage that is tainted by an animal's manure, urine, or to a degree, perhaps smelly feet of another cow.

Let's now look at it from the other side of the fence. How many acres would it take to produce eight tons of total forage? There are always exceptions, but a high average probably wouldn't make four tons per acre. If it did, that means it will take two acres of forage with a harvest efficiency of 70% (equivalent to daily moves) to meet the dry matter needs of that one 1,000-pound cow for a year. If the average yield is only three tons per acre, then 2.6 acres of forage would be required. Certainly, some highly managed hay fields can exceed the four-ton yield, but those are not average.

So far, we've looked at this purely as if it is a closed system. In other words, you are not bringing any dry matter onto the farm, you are basing it only off what is produced there. Just so we're on the same page, you are also assuming that this dry matter is either forage grazed or harvested and fed on the farm.

I often question grazing efficiencies and find myself testing them. It's not an easy task. Even if you take away all grazing factors such as caging an area for a season so you can take a clipping off that caged area to figure season long production, it can still be off some due to loss of potential regrowth between timely grazing events. If forages can be maintained more, in what I often call stage two, where the solar panel is the most active due to the highest leaf area being available and before flowering, then we can potentially increase production because we are able to collect more solar energy for a longer period of time and take advantage of more tillering and regrowth, as long as fertility and moisture are not limited.

On average, continuous grazing often has a grazing efficiency of about 30% to 50% due to suppressed growth and regrowth, avoided areas that can come from underutilized areas and undesirable species, and stocking rate. Under high management, frequent moves and appropriate allocations, you can often be equivalent to hay harvest efficiency or slightly higher. A good system at top efficiency and average production of three tons per acre to meet the dry matter requirements of the 1,000-pound cow for a year is going to require 2.6 acres. If you are continuously grazing, you will need more acres. What? That sounds crazy, but lost production is normally replaced with supplemental hay or feed outside the system and you don't realize how out of balance things really are. Sometimes letting a few animals go, especially when quite a bit of supplemental hay or feed is needed to sustain those numbers, ends up being better on the bottom line. Keep on grazing!

Victor Shelton, NRCS State Agronomist/Grazing Specialist

More pasture Information and past issues of Grazing Bites are available at:
https://www.nrcs.usde.gov/wps/portal/nrcs/in/technical/landuse/pasture

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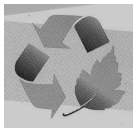

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Rental Equipment Available at Dubois County SWCD

- **No-Till Drill**

Great Plains No-Till drill has a seeding width of 7 feet, and can be used to plant soybeans, wheat, legumes, grasses, etc. It can also be used to plant native, or warm season, grasses. *Rental fee is $8/acre* or minimum of $50.

- **Stapler/Staples**

Installing erosion control blankets? This stapler makes completing the job easy! The plunger simply pushes the staples into the ground. *Rental fee is $10/use and box of 1,000 staples is $50 per box.*

- **Spinning Jenny**

Use to install high-tensile wire fences. Load with wire and set on the ground. Walk away pulling the end of the wire and it will spin, preventing your wire from tangling. Slow down gradually before stopping to prevent over-spinning and tangling. Can also be used to rewind wire in the field. *No Rental Fees.*

- **Tile Flags**

Flags on 36" wire staff can be used to mark underground power lines or surveying jobs. *Cost is $7.00/bundle of 100.*