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Dubois County SWCD

Mill Creek Farms

Kevin Mundy



2019 Annual Report





Created in 2012, the Land Stewardship Initiative (LSI) is a partnership between the Dubois County Soil and Water Conservation District (SWCD) and Vincennes University Jasper Campus (VUJC). Many local landowners and agribusinesses help to create and implement annual management strategies. LSI's goal is to be a demonstration site for No-till farming practices and to educate the community about soil health practices. 50 acres of land have been set aside at VUJC to be farmed using continuous no-till and cover cropping systems in a corn and bean rotation. Many waterways and filter strips have been built into the land to prevent soil erosion and nutrient loss. Water samples are taken monthly from field tiles to monitor environmental impact.

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Cover Photo (Melissa Ruschau): Crimson Clover and bee taken near field 7 April 2019



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 then 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.

LOOKING TO THE FUTURE

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 downs 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.



EDUCATION AND DEMONSTRATION

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. The Land Stewardship Initiative introduced them 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.



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.



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 all farmers in the county, state, and the Midwest in general 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.

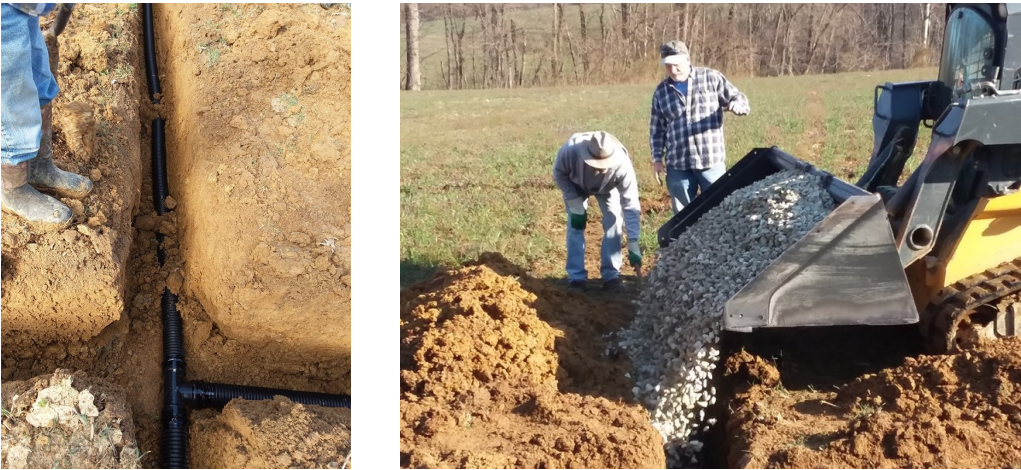


Top left:: Elementary school youth exploring soil at VUJ.

Top right:: Cereal Rye that was roller crimped and laying flat on the ground.

Bottom: Crimson clover in bloom south of field 7.

In April of this year, 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. In fact, 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 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 years 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.



Above: Sun Hemp and Pearl Millet
Right: top— Sunflowers bottom— Hairy Vetch