

KEEPING UP WITH SOIL HEALTH

RENVILLE SWCD

HAWK CREEK WATERSHED PROJECT



HAWK CREEK WATERSHED PROJECT

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Keeping Up With Soil Health

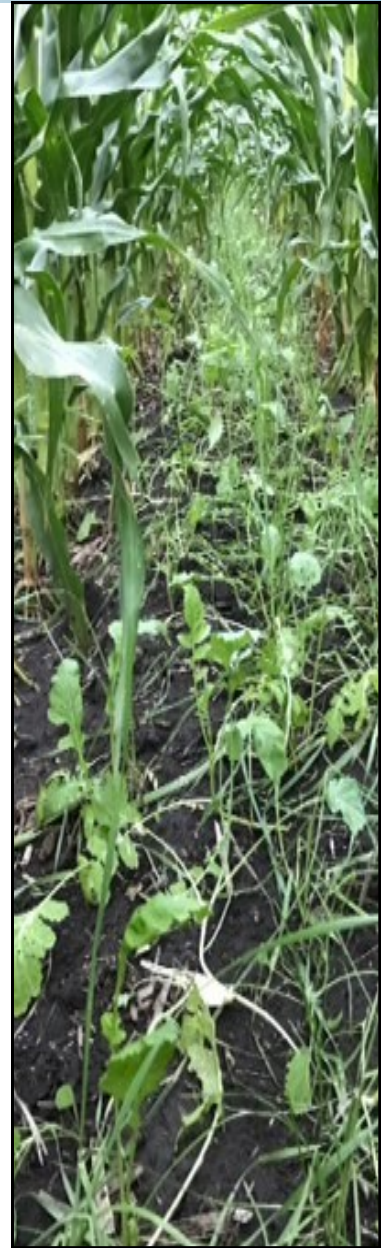
Covers, Not Conventional

By Holly Hatlewick, Renville County Soil and Water Conservation District

Renville County farmer Macius Schroeder is using bio-strips on his ground to site prep prior to no-tilling his corn.

For the 2019 and 2020 growing seasons, Schroeder has no-tilled diverse cover crops into his small grain residue stubble in an effort to create an enhanced seed bed for his no-till corn. Schroeder said, "I wanted to try no-till corn and decided to let the cover crop roots do the tillage for me." Bio-strips is the process of using cover crops to replace conventional full width tillage with its living root. The result is a micro enhanced, undisturbed seed bed that may or may not have green living cover at planting, depending on what species are in the cover crop mix. One cover crop mix is planted between the rows and a different mix is planted in next year's corn row. Schroeder implements cover crops in the seedling row that will break down rapidly in the spring and creates an area of soil exposure and encourages soil warm up, while between the rows is a winter hearty cover crop mix that will be green and living the next spring. Green cover between the seedling rows in the spring helps capture excess moisture that may delay planting and helps carry equipment across the field in rough planting conditions. The green cover crop also captures carbon from the atmosphere and transfers it into the soil in the form of soil nutrients. Essentially, Schroeder is replicating strip-till in a no-till system. Schroeder and his family

COVERS: Page 3



Fall green bio-strips are planted on Macius Schroeder's farm. One cover crop mix is planted between the rows and a different mix is planted in next year's corn row.

COVERS

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have been strip-tilling their acres for over 17 years and have seen the benefits of keeping the soil armored with residue and maintaining soil structure by only disturbing what is needed to plant a crop.

When asked why farmers should consider bio-strips, Schroeder said, “to spread out their workload.” Schroeder plants bio-strips in August after small grain harvest, reducing the number of acres they need to strip-till in the fall.

“It doesn’t take much to start trying bio-strips,” Schroeder said, stating his initial investment wasn’t over \$100. He is simply using a drill they already had.

The Schroeders have been utilizing cover crops on their farm for over 10 years and have seen the benefits of increasing crop diversity with the use of diverse cover crop mixes. Bio-strips are merely the practice of planting rows of different cover crop mixes to help prepare the soil bed for next year’s no-till crop.

When asked why farmers should consider bio-strips, Schroeder said, “to spread out their workload.”



No-till planting corn into bio-strips.

Schroeder has not done any side-by-side trials, but he has seen improvements in his soil’s macro porosity, resulting in improved water infiltration and overall better soil porosity.

Schroeder plans to continue using bio-strips and will continue to diversify his cover crop seed mix-

es as he learns more about species benefits and how they perform on his farm. As for resources, Schroeder first saw the idea at a conference, but he would recommend speaking with your local Soil and Water Conservation District office, watershed organization, or cover crop seed dealer if you’re interested in more information.



A cow grazing in a field with cover crops in Renville County.

Conservation Biology Through Regenerative Agriculture

By Kyle Richter, Renville County Soil and Water Conservation District

Conservation biology is a scientific approach that tries to improve ecosystems through conservation practices. Many people do not think of soil as an ecosystem, but it is a vital ecosystem in the world. Regenerative agriculture is a multifaceted approach that revolves around soil health practices and restoring organic matter throughout our soils. The goal of regenerative agriculture is looking at farming as a whole system, and not just crop yields. Regenerative agriculture has two main concepts that will be looked at closer in this article: reduced tillage and increasing soil cover.

Soil is full of nutrient, carbon rich, organic matter. When the ground is tilled up, the nutrients in the soil are exposed and released in the air, leaving soil with a deficit of nutrients. This causes the tilled field to need more applied nutrients than receiving nutrients from the soil they are planted in. A common tillage reduction practice is strip tilling. Strip tillage is a practice that minimizes soil disturbance by only targeting soil that is contained in the crop row and is also a great way to get your feet wet in no till practices. Also, with strip tillage there is opportunity to create a more targeted nutrient application plan.

Cover crops have many positive impacts. They help keep the soil covered year-round and increase the time a living root is in the ground. Main-
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Tea Bag Experiment

By Ethan Dahl, Renville County Soil and Water Conservation District

Renville County SWCD participated in the global tea bag experiment. This simple and inexpensive experiment is something that anyone can do and makes for a great hands-on science experiment that kids can participate in to learn more about the importance of soil health. The idea behind all of it is quite simple: you use two different types of teas (green tea and rooibos tea) and then weigh them, bury them, and dig them up and weigh them again. The tea serves as food for the smallest soil microorganisms, including bacteria and fungi that are capable of squeezing through the mesh of the tea bags. What this demonstrates is the soil health by how much of the tea is decomposed (eaten by the microorganisms) in the 90 days of burial. The reason why the experiment uses two specific types of tea is that the green tea simulates a material that is easier to decay while the rooibos tea decays much slower and after the three months it will still be in the “first phase” of decay while the green tea has already

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2021 Soil Health Fall Field Day

The Renville County Soil and Water Conservation District and the Hawk Creek Watershed Project are planning their annual soil health field day for the fall of 2021. Look for more details to come soon. If you have ideas of topics, presenters, or field test plots/practices you would like to see, please let us know.



Field day attendees look at cover crop seeding equipment while standing in a field of cover crops.

TEA

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entered the “second phase” of decay. Then you can calculate the Soil Decomposition Index (SDI) by taking the new weight of the rooibos tea and dividing that by the new weight of the green tea. The closer your value is to 1, the healthier the soil is (SDI of 0.5 is less healthy while an SDI 0.75 is healthy). If you are interested in participating yourself or would like to learn more, please visit the website teatime4science.org.

Materials Needed:

1. One Lipton green tea bag (EAN 87 10908 90359 5 or the old product number, EAN 87 22700 05552 5) and one Lipton rooibos tea bag (EAN 87 22700 18843 8).
2. A scale that can weigh the tea with two or three decimals precisely.
3. Something to dig a small hole such as a shovel or garden trowel.
4. A ruler can be useful to measure the depth of the hole.

The steps in performing this experiment are as follows:

1. Weigh the initial weight of your tea bags and mark which is which.
2. Bury the two different types of teas in separate 8 cm deep holes and about 15 cm apart from one another.
3. After approximately 90 days, dig up your tea bags, let them air dry out over a couple of days, then weigh them once again.



Tea bags are labeled before being buried.



A tea bag is weighed after being dug up.

REGENERATIVE

From Page 4

taining a living root in the ground increases soil structure, as well as increases soil organic matter and microorganism activity. The diversity of cover crops also provides livestock producers the ability to graze in late fall and early spring. Interseeding cover crops in between row crops have also shown to suppress weeds, as well as combat disease without affecting yield. A common way to incorporate cover crops is by using a no till drill. This allows for producers practicing no till and cover crops to effectively plant crops.



A Renville County farmer interseeding with a no-till drill.

Maintaining a living root in the ground increases soil structure, as well as increases soil organic matter and microorganism activity.

CRP: A Management Approach

By Kyle Richter, Renville County Soil and Water Conservation District

The Conservation Reserve Program (CRP) is another conservation practice that helps rejuvenate crop land. Producers can enroll marginal lands or low yield fields into this program. The goal is to restore wildlife habitat, as well as restore soil nutrients. CRP practices range from native prairie plantings to wetland restorations. Many people view this as set aside lands, but there are management options that help benefit from the land and help your entire farming operation.

Management of CRP land is an important part of the program. Many livestock producers utilize the ability to hay or graze the land at the halfway point of the contract. This is important because the land can still be beneficial to a producer's whole farm operation. This is a way for farmers to still utilize the land. The other benefit is the restoration of soils. This



A cow grazing CRP land in Renville County.

is a great way to regenerate organic matter in the soil and give farmers a fresh slate if they decide to farm it after the CRP contract expires.

Cover Crop and Reduced Tillage Cost-Share Available in 2021

Cover Crop Cost-Share Program

The Hawk Creek Watershed Project and Renville County Soil and Water Conservation District are offering a cost-share program for cover crops planted between April 1 and September 15, 2021*

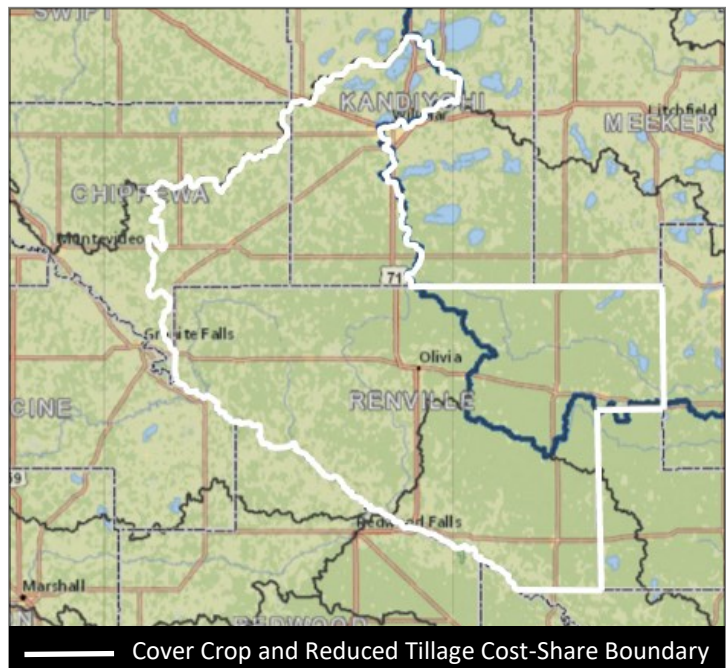
- Cost-share up to 75% of costs to plant cover crops (e.g. seed, labor, equipment use, seed incorporation), with maximum payment of \$2,000.00 per farmer per year
- Contract is for one year. Max of three years of payments through this program. Must sign a new contract each year
- Cost-share application must be signed and approved before seeding
- Prior to planting, seed mix must have at least three species pre-approved by Renville Co SWCD and HCWP*
- No fall tillage or excessive grazing (as determined by Renville Co SWCD and HCWP)
- Seedbed prep is not an eligible cost-share expense
- Adjustments in management of cover crop (e.g. clipping of excessive growth, partial grazing/harvesting with livestock, or other management techniques) require pre-approval by Renville Co SWCD and HCWP
- Seed tags, all invoices, and passed field inspection are required before payment is made in 2022
- Ineligible if you receive cover crop incentive and/or cost-share payment through any other program (e.g. EQIP, CSP)
- Cost-share available to producers in Renville County and in a portion of the Hawk Creek Watershed (covering portions of Chippewa, Kandiyohi, and Renville Counties). See map below

* dates may be extended & seed mix requirements may be adjusted by Renville Co SWCD & HCWP based on weather conditions

Reduced Tillage Cost-Share Program

The Hawk Creek Watershed Project and Renville County Soil and Water Conservation District are offering a cost-share program for reduced tillage practices in 2021

- Cost-share up to \$15.00/acre to implement no-till and/or strip till (e.g. labor, equipment use), with maximum payment of \$2,000.00 per farmer per year
- Contract is for one year. Max of three years of payments through this program. Must sign a new contract each year
- Cost-share application must be signed and approved before planting takes place
- Invoices and passed field inspection (after spring cash crop is planted) are required before payment is made
- Ineligible if you receive reduced tillage incentive and/or cost-share payment through any other program (e.g. EQIP, CSP)
- Cost-share available to producers in a portion of the Hawk Creek Watershed (covering portions of Chippewa, Kandiyohi, and Renville Counties) and all of Renville County. See map at right





Hawk Creek Watershed Project
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Coffee and Conservation

Join the Renville SWCD Tuesday, April 6, 2021 at 9:00 am for our **FIRST EVER** live stream Coffee and Conservation on our Facebook page. We will be talking about conservation topics that impact us all and answering your questions! At the end of our chat, three lucky winners will be drawn from those who have completed the survey inserted in this newsletter or online at <https://surveyhero.com/c/c8216a41> (need not be present on live stream to win).



Topics may include:

- managing wildlife cover
- why is the snow black
- where does the rain go
- and much more



Renville County SWCD

We want your feedback!
Return the short survey below for a chance to win one of three prize packages valued at over \$150.00!*

Are you familiar with how a Soil and Water Conservation District can assist you?

☐ YES

☐ NO

In what conservation topics are you most interested?

(Select All That Apply)

☐ Soil Health

☐ Wildlife Habitat

☐ Water Quality

☐ Education

☐ Programs

☐ Erosion Prevention

☐ Trees

☐ None

☐ Other: _____

Complete your information below and return to the Renville Co SWCD office by April 4, 2021 for a chance to win a prize package!

Name _____

Email _____

Phone _____

Completed survey can be mailed or dropped off:

Renville Co SWCD, 1008 W Lincoln Ave, Olivia, MN 56277

Or completed online: <https://surveyhero.com/c/c8216a41>



*Completed surveys returned by 4/4/21 will be entered into a drawing to win one of three prize packages valued at over \$150.00. Three lucky winners will each receive a Yeti Rambler® 20 oz. Tumbler, \$50 gift card to Benny's Meat Market, \$25 gift card to Max's Grill, and \$50 gift card to Babe's Blossoms! Winners need not be present to win and will be notified by phone or email. See additional drawing details below.

Fold here and return to Renville Co SWCD

Those who return a completed survey or complete it online will be entered into our drawing which will take place LIVE on April 6, 2021 during our Coffee and Conservation launch (see back page of newsletter for more information)! You don't need to be on the live stream to win. Winners will be notified by phone or email.



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Renville County SWCD

Join us through the
Renville County SWCD
Facebook Page for Coffee
and Conservation
on April 6



Find more information about the
Hawk Creek Watershed Project at:
hawkcreekwatershed.org

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