



# Beadle

# Conservation District

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## No-Till Gardening? Soil Health Methods Not Just for Farmers

*By Janelle Atyeo, for the USDA NRCS South Dakota.*

**NATURAL RESOURCES CONSERVATION SERVICE, Huron, SD, April 4, 2018** – When her husband pulled a muscle, putting him out of commission last spring, Crystal Runge was unsure how she would get her garden tilled in time for planting vegetables.

Runge, who has tended her backyard Brookings garden for 14 years, works as a geographic information specialist at the regional Natural Resources Conservation Service office. When she brought up her predicament to her agronomist co-worker and fellow gardener Eric Barsness, he had an obvious question: "You work for this agency and you haven't no-tilled yet?" he asked her.

With his encouragement and some internet research, Runge dove into no-till gardening and took it a step further with other conservation-minded methods: Companion planting, layering ground coverings in a technique called "lasagna gardening," and planting cover crops. Her husband questioned what seemed like some strange gardening practices, but with his injury, he could only sit back and watch and wonder.

There's good reason to try this kind of approach, according to Barsness. It's all about soil health, he said, and healthier soil means more nutritious food and healthier people. By the end of the season, the Runges were able to see the many ways their new approach to gardening paid off. "This year was kind of an experiment," Crystal Runge said.

The first test was with her potatoes. Runge didn't get them in the ground by Good Friday, but she placed them on top of the ground. Instead of digging into the soil to plant spuds by the date recommended in long-held gardener lore, she laid her potatoes on the soil surface and covered them with hay.

Barsness has done the same thing for the last three years in his garden. Every year, he's sure it's not going to work, but soon the leaves pop through the hay and potatoes grow in their moist, shaded bed. Harvesting is easier, too.

When Runge asked her 11-year-old son to grab some garden potatoes for supper one night, he ran for the tool shed to grab the potato fork. It wasn't necessary, he learned. All he had to do was lift the hay and pluck a few potatoes for the meal. You can harvest as many as you need without killing the whole plant, Runge said, and they're not caked in dirt.

The Runges planted onions the same way. For other crops, such as sweet corn, squash and tomatoes, they hoed rows for seeds and starts. From there, the garden got layers of hay, grass clippings, shredded paper and manure to provide nutrients, keep weeds down and keep moisture in. (continued on page 6)



# Soil Health Demonstration Sites

In 2018, the Conservation District began a project to demonstrate how to improve salinity areas.

4 sites were selected throughout the county, of approximately 5 acres each, to demonstrate the improving salinity issues. These sites were selected based on their salinity test, and ease of access for workshops and tours.

Below you can see the improvement as seen on satellite imagery on 2 of the sites.

Different combinations of saline tolerant vegetation were used on all sites. Each site also used different soil health management techniques.

Site 1 was planted mid June 2018 with Salinity max Alfalfa, AC Saltlander and Western Wheatgrass; Weeds were controlled and livestock was integrated.

Before



After



Site 2 was planted June 1, 2018 with the same grasses as above, but more emphasis was placed on the Western Wheatgrass; weeds were cut and sprayed, and 2019 proved to be a difficult year. Cover crops & a different grass mix was planted on the east side in August, and the west side was broadcast seeded in December. In August of 2020, Canary Reedgrass & Western Wheatgrass were planted on the whole site. I am looking forward to seeing this site later this summer, as well as the other sites.

Tours & workshops will be planned this summer and will be announced on our website, Facebook page and through other media options.

Before



After



I would like to talk about the salinity demonstration projects that BCD implemented a few years ago.

Salinity problems have slowly been getting worse and unfortunately the solution is a slow process. No—spraying chemical on the site generally doesn't work. Each site must be evaluated to come up with a fix.

As a board, we wanted to see if we could come up with a fix for what might or might not work. I am most familiar with the one 2.5 miles south of Iroquois, on the west side of the road. The grass varieties that were planted in the area have slowly gained traction and are filling in the area. The fall of 2019, I was driving by it a fair amount. The crop was harvested and cattle were turned in to graze the residue. They were really grazing that area. At least with this drier spring the soil is not blowing there.

The district has land we call Cain Creek, southwest of Huron. During the wetter years, the south demonstration area developed saline areas. We planted salinity max alfalfa and AC salt-lander wheatgrass in there. It has slowly filled in those areas and the alfalfa can be cut for hay. If you don't need the hay, we have a local hay market, or go talk to your neighbor that has the equipment who may be interested in working with you.

What I am trying to say is it is a slow process to solve the salinity issue. Contact Robin, the local NRCS field office, the State Soil Health specialist (Kent Vlieger) or the Soil Health coalition for help. They are there to help and it is free. Can't get a better deal than that!

The highlighted children's book for this issue is "If A Farmer Gets A Pickup" written by Lee J. Friesen, illustrated by Vartan Ter-Avanesyan. Mr. Friesen lives at Olivet, SD. Make sure you check out the rubber chicken which appears on every page. Do you have a book you would like to see highlighted here? Please email me the details at [fvfritz@santel.net](mailto:fvfritz@santel.net).

See you next time.

Franny



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# Cook's Corner

The SD Assn of Conservation Districts Employees Group (SDACDE) has put together a cook book and they are for sale in our office. The price is \$10 and there are over 600 recipes in the book. It would make a nice, inexpensive gift to have on hand when a need arises.

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## Wild Rice & Shrimp

Patty Beck

1 can Cream of Mushroom soup	1/4 tsp pepper
2 T chopped onion	6 oz American Cheese, cubed
2 T butter or margarine, melted	1 lb frozen Shrimp
1 T lemon juice	1 pkg long grain & Wild Rice, prepared according to directions
1/2 tsp Worcestershire Sauce	
1/2 tsp dry mustard	

Mix all ingredients together. Pour into a greased casserole dish. Bake at 375 degrees for 35 minutes. This is also good without the shrimp.



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Now is a good time to start thinking about cover crops. Our Interseeder is a great way to plant cover crops in between your corn rows. Cover Crops are also very beneficial to prevent plant acres. We are able to order a variety of cover crop mixes or help you create your own mix. Give Robin a call at (605) 936-8384 to see how we can be of service to you.

Benefits of Cover Crops:

- ◆ Reduce compaction
- ◆ Increase water infiltration
- ◆ Improve soil health
- ◆ Longer grazing
- ◆ Wildlife habitat



## **No-Till Gardening? Soil Health Methods Not Just for Farmers** (continued from page 1)

Lack of weeds brought even more joy. If weeds popped up, Runge smothered them in more grass clippings. That's what usually sells people on no-till gardening, Barsness said. "As soon as you talk about not having to pull as many weeds, you get a lot of people's attention," he said.

He's seen the same with farmers getting into no-till and crop rotation management on their fields. The key is not letting the weeds go to seed, he said, then after three years, there is hardly a weed problem. Having residue on the surface increases water infiltration, so when it rains water goes into the soil instead of running off. That means less watering.

Another way Runge tried to help her garden vegetables along was through companion planting, which involves growing different kinds of plants beside each other or even in the same row. The companion plants help make nutrients like nitrogen more readily available for the corn to use. Timing is important when companion planting, it provides ground cover and keeps weeds from growing.

Runge planted squash and pumpkins beside her corn rows, and she planted green beans within the same row as the corn. Barsness recommends that gardeners seed their companion plants after the main crop is well established. The corn should be about knee-high when its companions are planted, so it is not competing for water and nutrients. Runge planted hers together at the same time with no problems.

Runge saw the benefits of companion planting in her healthy, high producing sweet corn stand. Rows with companions were tall and green, while one row without companion plants was yellow and stunted and the ears of corn each had knobs at the top where the kernels didn't fill out. She saw how companion planting strengthened the plants. The garden was hit by two storms that flattened the corn stalks. Normally, she would help prop the plants up again. This year, she decided to let them go, and they soon stood up on their own. "It makes for healthier plants," Runge said.

She especially liked how companion planting helped get more out of her small garden. It produced a bumper sweet corn crop and just enough beans for her to enjoy in-season. At the end of the season, she got her largest ever sweet corn harvest. Five rows of corn filled a laundry basket, and she froze 17 bags of it.

Runge planted a cover crop after harvesting each area, which was another new gardening practice for her. Throwing on a mix of nine species – common vetch, flax, field peas, forage variety radishes, rapeseed, turnips, oats, cowpeas and millet – she covered it with straw and was surprised to see it leafing out within a week.

The seeds are available at local elevators and seed dealers. Most are happy to give gardeners smaller quantities of the mixes they sell to farmers, Barsness said. He suggests using a seed mix of cool-season crops. The goal is to get as much growth as possible before the freeze. The plants in the mix will be killed and decompose over the winter, leaving not much more but their nutrients and loosened soil in the spring.

Gardeners tend to think that no-till and cover cropping is for the big operations like farmers and large-scale gardeners, Runge said. But she put the conservation practices to work on her backyard plot, which measures about 15 feet by 50 feet. No-till gives gardeners the same benefits farmers enjoy, Barsness said. Plants can easily get started in the loose, healthy soil as compared to the tightly compacted tith that results from tilling year after year. "Every time you till, you take the air out. Pretty soon, your top soil is shrinking away," Barsness said. As for Runge, she's happy to park her tiller, it was on its last legs anyway. Without the extra work of tilling and weeding, their new gardening style will save on her husband's sore muscles, too. The mission of the Natural Resources Conservation Service is to help people help the land and the agency works primarily with agricultural producers. Learn more about one-on-one personal advice for managing natural resources and assistance available at [www.nrcs.usda.gov/GetStarted](http://www.nrcs.usda.gov/GetStarted)  or visit your local USDA Service Center.

## Is Your Tree Site Ready?

Just a couple reminders before we plant your trees:

- Make sure site is properly prepared—if site is not going into crop ground, make sure it has been disced/cultivated several times
- For sites going into crop-ground—please be sure all corn stalks have been removed and site has been disced
- Corner posts are placed in all 4 corners of your site
- Pre-planting weed control (Treflan) especially if site was previously grass



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