

NCR-SARE Youth Educator Grant Project

Final Report Form

Please use this form to write the final report on your project. Use as much space as necessary to answer the questions. You are not restricted to the space on this form. The report may be prepared on a computer or handwritten. Electronic reports are preferred. If you are turning in a handwritten report, please write or print clearly. Submit the report to the North Central Region - Sustainable Agriculture Research and Education (NCR-SARE) Office (see address at the bottom of this form) by the due date listed in your contract. The final payment of your grant will be awarded when NCR-SARE receives and approves your final report and final budget summary.

1. PROJECT IDENTIFICATION

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- Website:
- Project Title: ND Western 4-H Camp SARE Garden
- Project Number: YENC12-042
- Project Duration: 2 years
- Date of Report: October 30, 2013

PROJECT DESCRIPTION AND RESULTS

Background:

Michelle Effertz was involved with the Junior Master Gardener program and taught youth, “Health and Nutrition from the Garden” and “Wildlife Gardening.” She has taught lessons on gardening to Kindergarten through 6th grade. Irene Graves taught youth workshops at the 2011 and 2012 Northern Plains Sustainable Agriculture Society Conference on the subjects of plant growth and honey production. Irene has taught lessons to K-12 grades. In 2006 Irene had a SARE Research and Education Grant for Renovation of Prairie Grasses.

Goals:

- A. The ND Western 4-H Camp SARE Garden will provide youth with an experiential learning opportunity by having them develop and maintain a sustainable camp garden. The garden will be used to educate youth in three ways:
1. Sustainable gardening, till and no-till plots, composting techniques, and integrated pest management.
 2. Everyone attending the camp will receive an introduction to soil health, the water cycle, and the health benefits of growing and eating garden produce.
 3. Fresh vegetables will be used for camp meals and the excess produce will be distributed to SARE youth campers and the local food pantry. Produce will be used to teach food preservation at the fall family camp.

B. To educate youth about sustainable growing practices through instruction and tours of local organic farms and farmer's markets.

Process: Prior to the camping season we conducted Junior Master Gardener classes with kindergarten students at Washburn Elementary. The students started seeds indoors under grow lights. We chose to go into the Kindergarten classroom to instill a passion and knowledge of gardening in young people. We also hoped to get some seeds started indoors so we could get our garden growing sooner. The weather is very unpredictable in North Dakota causing a short growing season.

We purchased the compost bin, posters, garden tools, fencing, hoses, sprinklers, seeds. A storage water tank was donated by a friend of 4-H.

On May 15, the Kindergarten class planted beans, pumpkin and squash seedlings in our large garden plot near the creek. The large plot is in the old rodeo arena which had been fallow for 35 years. The Students planted the seedlings in untilled soil and mulled the garden with straw.

At the end of May a flood inundated the large garden plot.

So the children would have some garden produce, we decided to build two raised garden beds near the main lodge. On June 11 we built and planted two raised beds.

On June 18 the water receded enough that we could plant corn and squash in the large garden plot.

We contacted the camp chairs to set up educational sessions during camp. We created and ordered educational posters, gathered soil samples and developed our lesson on soil health. We assembled the compost bin. We taught our composting method to the camp staff and they showed the campers how to compost their table scraps. We emphasized the balance of Green (Nitrogen) and brown (Carbohydrates) as it relates to the composting process. If the compost smells bad, you add more brown, if it is not decomposing, you add more green.

We conducted our "Supper to Soil Cycle" lesson throughout the camping season. The lesson included information on how composting microbes decompose table scraps and add nutrients to the soil in a form which plants can use. People complete the cycle by eating the plants creating more table scraps. We taught them about soil structure and biology and how it contributes to plant growth. The students built soil models and assessed the texture of various soil samples.

The soil portion of the lesson covered soil structure. The major part was a hands-on task of building soil models with Styrofoam balls and toothpicks. After the model was built plastic bugs, worms and string were inserted into the model to demonstrate the need for living space for soil microorganisms and filtration of air and water. The students then went outside to make ribbons from soil samples and discuss how the soil particle size affects the ability of the soil to stick together. The models became more real to the youth as they made soil ribbons from our soil samples. Some of the samples were from our garden plots. Thus, the youth were able to compare the growth of plants in the fertile loam soils of the raised beds vs. the sterile clay soil of the large flooded garden plot.

The campers weeded and watered the garden and ate produce from the garden. The new garden beds were more conveniently located near the lodge so watering was easy. Also the cook was able to harvest the produce more readily. The lettuce was the first thing up and the cook used it several times for salads. One of the counselors had an avid interest in gardening and she guided campers to the garden to have them weed and water it.

After the youth campers left, the deer found our garden and ate all the remaining produce, including the tomatoes, onions, and squash. We were able to harvest some root crops such as beets and carrots. A deer fence is essential as the camp is located near a river bottom and is very remote. We had fencing around the large garden plot but not around our raised beds. From the large garden, we harvested corn for freezing and also some pumpkins. We did not have enough produce left to donate to the local food pantry.

PEOPLE

- We received help from Washburn Elementary for allowing us to come into the classroom to teach the Kindergarten students. The school also provided busing to the garden site. The teachers assisted the students with the garden planting.
- Our county courthouse donated and delivered the soil we used for the raised garden beds.
- We received help from 6 camp counselors, the camp cook, and the maintenance person. They all helped with watering and weeding the garden. The counselors taught the campers the composting techniques and made sure the compost bin was rotated often. The cook harvested and served the garden produce.
- The Extension Service county and state staff helped promote the garden. They also allotted time during their camp sessions for us to conduct our “Supper to Soil” educational program.
- Our State Extension Service Soil Science Specialist donated soil samples for the youth to make “soil ribbons” to assess soil texture.
- A local farmer donated the straw for our no-till raised beds and for compost material.
- An Area Extension Specialist/Soil Health provided information for the soil cycle posters and educational materials.
- Soil Biology posters and information were provided by the USDA Northern Plains Research Center

RESULTS

Statistics:

- 22 kindergarten youth learned about different types of gardens, planted seeds and transplanted them to our garden.
- Over 300 campers, counselors and volunteers composted their kitchen scraps
- 116 youth learned about the benefits of composting and the role of soil health in food production
- All youth at camp ate food from the garden.

- The garden corn fed 70 people at our county 4-H fall festival and the husks were used for a craft activity.

Pre-surveys of the Kindergarten class parents showed that 38% of them have a home garden. Of the parents with a garden at home, 100% reported that they enjoy gardening with their children.

Of the parents without a garden at home, 50% reported that they enjoy gardening with their children at home. Without the SARE grant many young children would not have been exposed to the world of plants. They would have a limited understanding of how our food grows and would also be less likely to practice gardening in the future. Post surveys indicated that parents agreed or strongly agreed that their child was more interested in gardening and growing things.

The primary aspect of sustainable agriculture that was instilled in the youth campers was social responsibility. Many expressed their desire to go home and began to compost their table scraps because they realized they are a part of the cycle of food production. The youth said they could see how the food they didn't eat could enhance their soil to produce more food to eat.

A serendipitous result was the flooding of the large garden and the creation of the raised beds. This combination of unplanned activities resulted in an immediate and marked comparison of fertile and sterile soil. The youth saw what continuous fallow does to soil in comparison with soil in which the biology was allowed to stay intact.

Some youth indicated they compost at home and that number will likely increase. After working in the SARE garden, adult campers expressed interest in establishing raised beds at home.

Other county extension staff requested that we repeat the project this coming year. Our plans are to expand the garden beds, put up germination hoops, and continue composting.

Comments from our state extension staff were very positive:

- "I think next year we should put some hoop greenhouses over the raised gardens so they can be started earlier and provide vegetables for the camps earlier. This was a good lesson for our kids to see the garden and learn about fruits and vegetables and composting. It will be neat to also have them eat the stuff out of the garden."
- "I was impressed by the raised gardens once I saw what the plan was. It provides a 'teachable moment' for our campers and one real life environment friendly activity that they can actually do at home with a little help."

The ND Rural Rehabilitation Corporation offered \$10,000 for a deer fence once camp administration identifies a permanent garden area at camp.

DISCUSSION

Irene gained confidence in the knowledge that she can make a difference by helping to maintain and instruct at a sustainable garden in a public place. All of the people involved in the project want to continue and take an active part in the garden. I had hoped but not expected the overwhelming interest and the ownership the youth took of the garden. Even those who did not want to "get their hands dirty" found it irresistible to dive in and help.

What would we do Different? We would not have planted the large garden so close to the creek. We would have built the raised beds sooner as they were closer to the main lodge and more accessible by the camp staff and campers.

OUTREACH

- a) Our primary target for promoting the camp garden was to youth. We recruited the Kindergarten class to help us with the project and generated publicity for the garden. We had the newspaper come and take photos and write a story about the Kindergarten class planting seedlings for the SARE garden. The article ran in the Leader News on April 11, 2013 (see attached scanned document). The Leader News circulation is 1400. A member of the ND Rural Rehabilitation Board read the article in the paper and called us to say the board was willing to donate \$10,000 to the camp for a deer proof fence. We have not received that money because we are renovating the camp and still deciding where to permanently locate the garden. We also had the camp counselors take photos and post them on the 4-H Camp Facebook page. Some of the photos are show below.

These pictures are from the ND 4-H Camp Facebook Page. Michelle and Irene are teaching Family Camp participants about the soil cycle. The campers are making their soil structures from Styrofoam.

For more photos go to the website:
<https://www.facebook.com/media/set/?set=a.545663048826639.1073741836.168826179843663&type=3>

