

A Report for
The Marjorie J. and Richard L. D. Morse Family and Community
Public Policy Scholarship

KNOW IT & GROW IT!

Empowering and educating youth in Wilson, Kansas through gardening

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0.0 Executive Summary

In April 2013, Wilson, KS PRIDE received a grant from Kansas Community Gardens and K-State Research and Extension to fund the Wilson Community Garden. The garden consists of 9 plots in an area 45' x 90'. Two of the plots are devoted to youth education. My project goal was to educate youth of Wilson, Kansas about nutrition, basic biology and environmental quality through gardening. I grew up in Wilson, a rural agricultural community in central Kansas with a population of around 800, and saw this as an opportunity to give back to my community from what I learned from college at Kansas State University. While in Wilson, I assisted in the implementation of the garden, executed educational lessons for the youth of Wilson and worked with community members and Wilson Schools to sustain the garden for future generations to enjoy.

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I would like to thank the Marjorie J. and Richard L. D. Morse Family and Community Public Policy Scholarship and K-State Libraries for funding me to create positive change in Wilson, KS. Thanks to Dr. Ganga Hettiarachchi for mentoring me, Jay Weeks for teaching me to use XRF and to the Wilson PRIDE, community members and FFA for help and support. Special thanks to family and friends for continuous support and dedication.

1.0 Background

The Wilson PRIDE Organization received a grant from the Kansas Health Foundation and K-State Research and Extension to start a community garden in Wilson, KS. The garden consists of both communal and allotment plots and occupies a space of 45' x 90'. The garden plan, as designed by a PRIDE member in Fig 1 (p.17), is made up of 9 plots measuring 12' x 18' and 7 raised beds. The raised beds are designated for elderly or disabled community members.

The Morse Scholarship enabled me to be a part of the community garden, where my focus was to integrate lessons about science and health through gardening to the youth attending the Summer Lunch Program. The Summer Lunch Program is conveniently located across the street from the garden and is funded through the United States Department of Agriculture. About 20-30 youth would attend the lunches daily. The Summer Lunch Program serves a hot lunch to youth ages 1-18 Monday-Thursday. I volunteered at the Summer Lunch Program daily and used it as a platform to teach and get youth involved in gardening.

2.0 Site Development

The site for the garden was chosen by PRIDE members because of its central location, close proximity to the Summer Lunch Program and newly installed splash park. Figure 2 (p.18) shows the location of the garden in relation to the park and lunch program. In May, I collected soil samples at the garden in four different areas. The soil was tested at K-State Soil Testing Lab, where they made recommendations based on nutrient levels to optimize growth. The attached soil test results in Figure 3, 4, 5 & 6 (p.19) summarize that the samples overall have a high pH, and high in phosphate. Adding sulfur will help lower the pH, and nitrate fertilizer will help correct the soil. I also analyzed the samples using handheld x-ray fluorescence in Dr. Ganga Hettiarachchi's lab in the Department of Agronomy. X-Ray Fluorescence is a process where electrons are displaced from their atomic orbital positions, releasing energy that then characterizes that specific element. This was done because the garden site is located where a house once stood and we were concerned about hazardous heavy metals in the soil, such as arsenic and lead. Four soil samples were collected, analyzed and had no detectable levels of hazardous trace elements.

Upon being awarded the Morse Scholarship, the PRIDE Organization notified me the garden would be tilled and prepared for planting by May, where I could then involve youth of Wilson involved in planting and begin my educational program. However, a long overdue splash park slowed the progress of the garden. The PRIDE Organization received funding and began constructing a splash park seven years ago, which is adjacent to the garden. The PRIDE Organization was responsible for installing the splash park, which came with many delays and obstacles. City officials and PRIDE members wanted to finish the splash park before taking on another task, because they were facing a daily fine if the splash park was not finished by July 15. I was told there would be a contractor to help with the installation of the water lines, fencing and other preparations to get the garden ready after the splash park was completed. I trusted this

would happen, knowing that it was a large project and would take some time to plan and execute. In the meantime, I asked around to community members where a startup garden could be located and it was suggested to use raised beds outside of the Summer Lunch Program, which had sat empty since they were installed over 20 years ago.

3.0 Summer Lunch Program

The Summer Lunch Program started the first week of June, I quickly got involved volunteering daily and started transforming the beds to garden plots. I added soil and compost and quickly went on a hunt to find vegetables that could survive in an 4'x4' bed. I talked with Stutzmans Greenhouse in Great Bend, KS and they donated peppers, cantaloupe, honeydew and tomatoes. Attached photos show the transition of the beds to flourishing garden plots. I utilized these plots to serve as the base for my educational lessons. Although it wasn't the garden I hoped for, I felt I could still fulfill the goals I established and also help with the development of the garden. Once a week, I led kids around the beds and taught them about plant biology, soil, weeds, insects and nutrition.

Through trial and error, I tried to change the way youth thought about vegetables and fruits. At the Lunch Program, I was originally assigned the task of handing out milk, where I chatted with youth as they stood in line waiting for food. A woman gave me a shirt with a cartoon muscular broccoli on it. I wore the shirt and asked kids if they knew what it was, if they liked it and what their favorite vegetable was. The kids got a laugh out of the shirt and asked where it was when I was not wearing it.

The Dairy Association requires the Summer Lunch Program have a dairy week during the summer. I volunteered to help with dairy week, where I created a milking simulation by transforming a cardboard cutout of a longhorn donated to us by the nearby bowling alley. I tried to make the activity fun by saying stuff like the cow was kicking, we were running out of milk for the kids to drink, while still teaching them about where milk comes from, different types of dairy cows and different types of milk. One girl even named the ex-longhorn "Princess" and petted Princess while she was being milked, shown in attached photos.

It wasn't easy to engage students in learning about food and nutrition. I was happy with any amount of kids that showed up after the lunch program to learn about gardening, sometimes just one or two kids. Since this is the first year, I am hopeful the program will grow and be much larger. I suggested using the library, rather than the lunch program to engage kids in gardening. I met with the public librarian and she is interested in helping in the future. I saw that a large opportunity to influence kids' view of food is while handing out the food. After some time of nudging, I was able to get involved with serving the kids food. I presented the food in a fun, energetic manner to encourage them to try new foods. I worked to get 4-H members by calling members and attending members to get them involved in what I was doing, realizing kids are a lot more receptive to high school students than the elderly.

4.0 Science & Health Curricula

Introduce the concept that seeds change and grow into plants when conditions in the environment including temperature, light, water and soil are appropriate. Students learn that plants produce seeds that can become new plants. I emphasized that everything is connected in nature by starting with the basics of life. I made connections about farming, since Wilson is largely an agricultural community, sources of energy, importance in understanding where our food comes from and how what we eat affects our health and well being. The following comprise of my summer curriculum plans.

Week 1: Introduction to Life Science, Soil & Water

Week 2: Weed Science

Week 3: Plant Biology

Week 4: Insects

Week 5: Earth and Space Science

Week 6: Diversity & Food Source

Week 7 & 8: Health

Week 1: Introduction to Life Science

Living things have basic needs, which are met by obtaining materials from the physical environment.

- Living things require energy, water, and a particular range of temperatures in their environments.
- Plants get energy from sunlight. Animals get energy from plants and other animals.
- Living things acquire resources from the living and nonliving components of the environment.

Living things survive only in environments that meet their needs.

- Resources are necessary to meet the needs of an individual and populations of individuals. Living things interact with their physical environments as they meet those needs.
- Effects of seasonal changes within the local environment directly impact the availability of resources.

Soil and Decomposition

All living things are constructed from basic building blocks, such as proteins and starches. Eventually, all die and become food to multitudes of bacteria, fungi, insects, and worms. In the process, these once-living materials are transformed into nutrients for plants, which provide oxygen and food for everything else on Earth.

Worldwide, 25 billion tons of agricultural topsoil are swept away every year -- that's 7% of the world's good growing land every decade. In these activities students will come to appreciate how little topsoil there is in the world and how it can easily be lost through erosion. In the garden, students will discover techniques to build soil health and protect soil from erosion.

Topsoil: Top layer of soil

Erosion: When soil or rocks are moved from one place to another. (Erosion also happens water and wind wear away the soil.)

- Observe and describe the properties of soil:
 - Color.
 - Texture.
 - Capacity to hold water

Soil Quality

****Demonstrate soil collecting and analysis results from K-State Soil Test lab**

Ask how many kids live on a farm and what it's like to help out. What do they grow?

Water

Source of water is from city. It has the same quality as the tap water.

Talk about importance of drinking clean water, problems with dumping anything down the drain and briefly discuss the water cycle.

Week 2: Weed Science

- What is a weed? A weed is a plant that is growing where we do not want it and one that we have not planted.
- What does a weed need to grow? Weeds are plants so they need air, water, and the right temperature to grow. Some weeds only grow in the spring and summer. Others start to grow in fall and winter. Temperature changes signal the weeds to grow at the right time for their life cycle.
- Are weeds needed in nature? Many weeds are edible for people and contain vitamins we need. Some weeds are used for medicine. Plantain has antibacterial properties and is used to treat sore throats, colds, and the flu. Jewelweed is used to treat poison ivy. Some weeds have been developed by man into a new more useful or acceptable plant – like a wild grass into the corn plant we know today.
- Why do we remove weeds? We want to prevent them from spreading, to remove them before seeds form, to give the plants we want the space, food, and water they need without weeds crowding them.

How can we prevent weeds from taking over our garden?

Have kids help spread mulch (straw bales) around garden beds. This will make our work a lot easier in the long run.

What are other ways people remove weeds?

Spraying chemicals on the weeds.

What could be a problem with spraying chemicals on the food we plan to eat?

Have to notify Summer Lunch Program of any insecticides or pesticides used on the garden.

**Make sure kids understand the importance in washing fruits and vegetables before they eat them. **

Week 3: Plant Biology

Pollination

- Start at the **stem**. Stems transport water and nutrients to the flower.
- The leaf-like parts at the base of the flower are **sepals**. Ask for their function. Sepals protect the flower in the bud stage. Remove the sepals and record the function on the worksheet.
- *If you want to know more:* All of the sepals together are called the calyx. When petals cannot be distinguished from sepals, the parts are called **tepals**. Examples are iris, amaryllis, tulip, and lily. All of the petals, sepals, and tepals together are called the **perianth**.
- The colorful portion of the flower is the **petals**. Ask for the function of petals. Color, shape, and scent are used by flowers to attract animals, including insects. Petals have **nectar guides** to direct the animals to nectar in the flower. Nectar guides are patterns in ultraviolet light that are seen by insects.
- *If you want to know more:* All of the petals together make up the **corolla**. Sometimes a flower's corolla does not have individual petals, but instead has one petal with lobes, like a petunia.
- Can you find the flower parts that have pollen? They look a bit fuzzy at the tip. The part is called the **stamen**. How many does the petunia have? Explain that the stamen is a thin tube with a knob at the top. The knob has the pollen. The stamen makes pollen. Remove the stamens carefully, leaving the center flower part attached. Label the stamen's function on the worksheet. Sprinkle some of the pollen on the paper (or rub the stamen on the paper). The stamen is the male part of the flower.
- How many parts are remaining in the petunia? Touch the tip of the part that is remaining from the center of the flower. It is the **pistil**. Is it sticky? Pistils look like a small stem. It is a tube with a sticky part at the top and a wide bottom. Why is the tip sticky? Pollen sticks to the stigma. Remove the pistil and label its function on the worksheet. The pistil is the female part of the flower.

What is pollination? Pollination is the transfer of pollen from a stamen to a pistil. Most plants do not accept their own pollen.

- How is pollen transferred between flowers based on what we know so far? Pollen from the stamen travels when it sticks to an organism that comes to the flower looking for

nectar. Nectar guide patterns on flowers can help guide insects to nectar. Bees and other insects see the nectar guides in ultraviolet light. This is an adaptation for the flower to be pollinated efficiently and an adaptation for insects to find nectar quickly. Most plants do not self-pollinate. Sometimes the pollen and pistil within the same flower mature at different times so the pollen may be too old by the time the stigma is ready to receive the pollen. The pistil may be taller than the stamens. Male and female flower parts may be in different flowers or on different plants of the same species. But, most likely is the fact that plants can identify their own pollen and are programmed not to let their own pollen fertilize themselves. Lettuce, beans, peas, and tomatoes self-pollinate. Pollen is also spread by wind (for corn kernels to grow) and by people who pollinate by hand.

- *If you want to know more:* Nectar provides energy and water to the animals that eat it. Nectar is found deep inside the flower.
- Bees and other insects can see ultraviolet light that humans cannot see without special equipment. Humans see the red end of the color spectrum better than insects do, and insects see the blue end better than we do. A nectar guide is the ultraviolet pattern that bees and some insects see on flowers to help them find the source of nectar quickly.
- A plant is self-pollinated when the pollen from the anther pollinates the stigma of the same flower. A plant is cross-pollinated when the pollen from one flower is moved to the stigma of a different flower. Cross-pollination creates seeds that make stronger, healthier plants than self-pollination.
- The pollen germinates and sends a pollen tube down the pistil into the **ovary** where it connects with an **ovule**. The ovule is now fertilized. Eggs are inside the ovules. What will develop? Seeds develop from the eggs inside ovules. The ovule becomes the protective seed coat. The ovary becomes the fruit. You may be able to split open the bottom of the pistil to observe the contents. Use a magnifier to take an up-close look. Touch the contents to observe it is wet and sticky. Label function of the ovules on the worksheet.
- If you brought in petunia seedpods, pass them out for students to open.

Why is pollination important? It is a necessary step to the formation of seeds and fruit. Seeds create new plants. For pollination to happen pollinators are needed. What are some things that reduce the number of pollinators? Pesticides can kill pollinators. Habitat loss, parasites or disease in pollinators and introducing non-native species are some causes for reduction in the numbers of pollinators. Why be concerned? One-third of the world's food needs a pollinator for the food to grow.

Part of plant we eat: We eat the roots of some plants. Radishes and carrots are roots, since they grow underneath the ground and we pull them from the ground. Radishes and carrots are roots because they grow under the soil. We do not see radishes and carrots growing above the ground like flowering plants or fruit. Radishes grow really fast, so in about 25-30 days after you plant radish seeds, they should be ready to harvest. Carrots take about two to three months to grow. . Lettuce is a leaf that we can eat. Broccoli is an edible flowering plant.

Week 4: Insects

Some insects can help plants while others can harm them. There are many different insects and different ways they can help or harm plants. Focus on insect-plant relationship.

Worms

Bones <ul style="list-style-type: none">• No skeleton	Skin <ul style="list-style-type: none">• Must be moist for worm to breathe, but too much water and it will drown	Eyes <ul style="list-style-type: none">• No eyes• Front end senses light and worm moves away from light	Ears <ul style="list-style-type: none">• No ears• Sense vibrations around them
Mouth <ul style="list-style-type: none">• Has a mouth, but no teeth• Mouth has a flap to push food into mouth• Front end can sense taste of food	Nose <ul style="list-style-type: none">• No nose• Front end can sense smell of food	Segments <ul style="list-style-type: none">• The lines around the body	Muscles <ul style="list-style-type: none">• Each segment has a muscle for movement
Hair <ul style="list-style-type: none">• On the underside• Each segment has four stiff hairs setae (see 'tie) for gripping and movement	Lungs <ul style="list-style-type: none">• No lungs	Slime <ul style="list-style-type: none">• Helps worm move• Allows worm to breathe	Heart <ul style="list-style-type: none">• 5 hearts to pump blood

Where do earthworms live?

- Earthworms live in places that have food, moisture, and oxygen. Would sandy soil have many earthworms? No, dries out too quickly. Earthworms come to the surface on wet days to breathe if the soil pockets are filled with water and not air. Most earthworms live in the top 18 inches of soil. Some burrow deeper if the soil is too cold or too dry, and then coil up and sleep. When soil dries up and heats up in summer, most of the adults die.

An earthworm helps break down dead plants and animals in the process that makes soil. The tunnels from earthworms add air in the soil and loosen soil. Earthworms pull food underground to eat. Studies have shown that earthworms have a sense of taste. They have favorite leaves and leaves they won't eat.

Week 5: Earth and Space Science

The sun is the principal source of energy.

- Sunlight warms Earth's land, air, and water. The amount of exposure to sunlight affects the amount of warming or cooling of air, water, and land.
- The sun provides energy to all plants to grow.
- The leaves of plants use energy from the sun to make food for the plant. The food gives the plant energy to grow. Leaves can also be food energy for animals.
- Trees not only have food energy in the leaves, but also heat energy from tree wood that is burned.
- Flowers have pollen and nectar, which are food energy for animals.
- Our very small garden animals are called invertebrates. They need the heat from the sun's energy to become warm enough to move. Animals are also food energy for other animals. If the animal is a plant part eater, the sun's energy is important for the plants they eat to grow.
- Wind happens when there are temperature differences as the sun's energy reaches our air. In some places, people are changing wind energy to electrical energy.
- Temperature measures the heat energy from the sun. Read the air and soil temperatures to students. Why is there a difference? Soil temperature is often cooler because the sun's rays don't shine into the soil. Soil heating happens as warmth from the air is absorbed.

Discuss nearby wind turbines outside of Wilson as another source of renewable energy

Get representative from Midwest Energy to discuss wind energy and other renewable sources. Make connection that food gives us energy and different types of foods are better for us than others. Also, think about environmental impact when you are figuring out what food is best for you.

Week 6: Diversify. Show kids different types of seeds used for growing, which will also lead into different types of seasons for growing.

Focus on the five senses. Herbs such as sage, oregano, rosemary, and a variety of mints are easy to grow in a sunny place in the classroom and have smells that are both strong and appealing. In addition, children can taste these herbs and use them to season snacks. Strawflower, hens and chicks, and lamb's ear are all hardy plants that have interesting textures and can take touching by

small hands. Flowers such as marigolds, pansies, and violas do well in small window containers and add eye-catching color to your classroom in the spring.

Source of Food

- In the process of making food and other goods available for us to buy, different businesses provide special parts of the process. These processes can occur locally and globally. What are some of the jobs in the process of getting food to you?
- Growers sell food to grocery stores, at farmers' markets, and to businesses that use their food to make other foods or ingredients for foods and other goods.
- Processors convert raw stuff to something else. A processor buys food to make another food or good to sell. Potatoes are bought to make French fries to sell. Chicken is bought to make chicken nuggets to sell. Beef is bought to make hamburgers. Oranges are bought to make orange juice to sell. Fruit and vegetables are bought to make canned and frozen foods. Corn is bought to make fuel to sell. Corn is largely used to feed animals that we then eat.
- Grocers buy foods to sell to you. Grocery store foods usually are not grown around where you live but come from other parts of your state, other states, and other countries. This allows you to have favorite foods any day of the year. Truckers, pilots, ship captains, train engineers transport food goods.
- Packers sell containers and other packaging to growers and processors to package foods for stores or other businesses who use the food.
- Warehouse operators sell a service to store food for future use.

Only certain foods can be grown in certain places. Most is imported. We are striving to grow our food locally.

Dinosaur Garden!

Visit ferns at nearby house. Tell kids these are plants that were around when dinosaurs roamed the Earth. Spore-Bearing Vascular Plants do not have seeds, but instead reproduce through spores in alternating generations. They can also propagate asexually from their underground stems. Plant reproductive structures have changed significantly over time and are a good indicator of evolutionary progress. The first land plants, including horsetails and ferns, produced new plants via spores. Gymnosperms were the next major group of plants to evolve. They produced true seeds in cone-like structures. After that came the angiosperms -- plants with 'true flowers' that produce seeds within protected ovaries (fruits). This innovation gave angiosperms an adaptive advantage over naked-seeded gymnosperms, and now they're the most abundant type of plant on the earth.

Seasons

This lesson begins by having students realize that seasons last about three months, and that they have a beginning and an end. The teaching point for this lesson is to introduce the length of the

seasons and discuss the different things that occur during each season. The next lesson will teach more about the planting seasons.

Spring: March, April, May

Summer: June, July, August

Fall: September, October, November

Winter: December, January, February

Week 7 & 8: Health

Connect previous lessons: importance in washing vegetables, where does our food come from, what foods are best for the environment, limiting our consumption of processed foods, eating healthier and more local is better for you and for the environment!

What is your favorite fruit?

What is your favorite vegetable?

What types of foods do you like to eat for breakfast/lunch/dinner?

Collect some foods that the students may not have tasted before, such as tropical fruits and seasonal vegetables, or ask students to bring in fruits or vegetables from home. Show the class the fruits and vegetables and see if they can identify them. Make sure students have parental permission before participating in this activity. If foods come from home, ensure that a selection of different foods is represented.

We bought grapes and also used cantaloupe and honeydew from the garden. Talk about different senses.

This food feels... This food smells... This food tastes...

Smooth, bumpy, sweet, smoky, salty, sour

Rough, cold, strong, burnt, sweet, bitter

Round, sharp, nice, bad, delicious, juicy

Hard, spiky, nice

5.0 Community Involvement

5.1 Wilson PRIDE

PRIDE meetings were held monthly and I began attending in June. I presented the soil test and let them know I was willing to help in any way. Members were pressured by the city council to finish the splash park, which was to be done by July 15, or they would face a daily fine for being behind of schedule. After the splash park was done, the hired contractor would work on the garden and then I hoped to be able to plant a fall crop. In mid-July I received a call from a

PRIDE member saying was going to send back the grant and disband because they didn't think there was enough people in favor of the garden. I was able to talk them out of sending back the grant and I assumed the role to oversee that the garden was installed. Supplies had been purchased for the garden, but lacked detailed plans. It was a matter of working backwards to figure out the design and strategy. The contractor was never able to help with the garden, but I made lots of calls around town to recruit volunteers. We installed water lines, tilled, put up a chain link fence, designed and installed the sign before I left. I designed and built a sign to be used for the garden seen in Figure 7 (p.24).

5.2 Wilson City Council

I presented at two city council meetings to update on the progress of the garden. I wanted to make sure community members were aware of the possibilities that could come from a garden and what it could provide for the community. I was met with a lot of skepticism and opposition, but I am hopeful the positivity will grow and the garden will flourish. A day before I had planned to have the trench dug for the water lines, I got a call from the mayor saying we had to change locations of the garden because they thought it would be in the way of the park. I then met with the mayor, city attorney to discuss the possible change and it was decided to continue with the location and that it would attract more community members to the area, rather than take away from the park. I designed a flyer, Fig. 8 (p.25) to that I put up around at local businesses and left at the City Hall so people were aware of what was happening with the garden.

5.3 Wilson Schools & FFA Chapter

I presented to the FFA chapter leader and president about the idea of taking over the management of the garden. They gladly agreed and saw it as an opportunity to fulfill their community development requirements for certain awards at national conferences. I drafted a contract, Fig. 9 (p.26) to be used for new garden owners and discussed with along with the agreement to maintain management with the FFA leader and Wilson School's principal. I was met with excitement and positivity at the school, and am confident the FFA will maintain leadership and teachers will get involved in gardening. I have emailed teachers at Wilson Schools, prekindergarten through 12th garden, to let them know of the potential to integrate gardening into their class curriculum. Just a few suggestions I made were that elementary teachers work with high school clubs to plant gardens and use the produce in school, the school can compost their food leftovers to reduce waste and supply the garden with compost, there's maintenance and bed building for the shop class, math classes can calculate amount of fertilizer to apply per square foot, and FFA can manage and maintain the garden to fulfill community development requirements.

6.0 Discussion

I felt I didn't have as much time as I had hoped to lead educational activities because of my involvement in getting the garden up and going. The lessons were well received and students were shocked to see how quickly the fruits and vegetables grow. Kids were also surprised of the difference in the shapes of the food we grew compared to that in the grocery store.

Difficulty in addressing health lessons with a limited budget and unable to intervene with summer lunch program menus. The Lunch Program was more of a place for kids to stop in and eat quickly before going back out to play. There was difficulty in grasping their attention about food. I listened to community members concerns, asked for advice and learned how to start a community garden. The Salina Journal came and featured an article on the work I was doing at the garden (p.29). The feature in the newspaper served to raise a lot of positive awareness in Wilson, which I appreciated greatly.

I was focused on the educational aspect and planned to help where needed with the garden. I was not prepared to fully take over duties to install the garden, but I adapted to avoid the grant being returned. Thankfully I had been involved with a community garden in Manhattan, KS and knew the overall functionality. With research, perseverance and volunteer assistance, I was able successfully complete all goals and leave the community with a community garden with many possibilities.

My summer experience in Wilson, KS taught me unforgettable life lessons. I became a better leader while working at the Summer Lunch Program and encouraging kids to get involved in the educational lessons. I learned how to recruit volunteers and delegate tasks while installing water lines and putting up a chain link fence. I tried to get a wide range of community members involved so that they feel a sense of ownership and work to sustain the garden. I learned to focus on the positivity rather than the negativity, because there certainly was plenty of the latter. It was rewarding to implement change at a local level, but I realized some change has to be made at a policy level. For instance, the funding is lacking for the Summer Lunch Program and highly processed foods are still being served too frequently. Hot dogs, corn dogs, hamburgers, and pizza with one cup of canned fruit were the common meals served for lunch. These meals were lacking in nutrition, but after talking to the dietician, it's the most affordable meals that the kids like. I understand that they feel pressured to serve foods that kids like, or they will lose their funding. This is what drives me to work at a policy level; to work to change government subsidies to make healthier foods more affordable than processed food. Major change is needed to revolutionize what we eat. I hope the garden in Wilson opens eyes to the differences in fresh, local foods.

7.0 Future Plans

The difficulty lies in keeping the garden going through the summer months while school is in session. I think in the future it will be more useful to coordinate with the Public Library, rather than the summer lunch program for teaching the lessons. The schools use the public library for summer reading, which will be more conducive to learning than the lunch program. I see the

garden as a place where all community members come together for a common good. I hope to see community members holding night classes to share recipes, tips on gardening, advice on eating healthy and more. With surrounding towns grocery stores closing, obesity increasing, and the climate changing for the worse, the community garden serves to curb those issues and foster community camaraderie.

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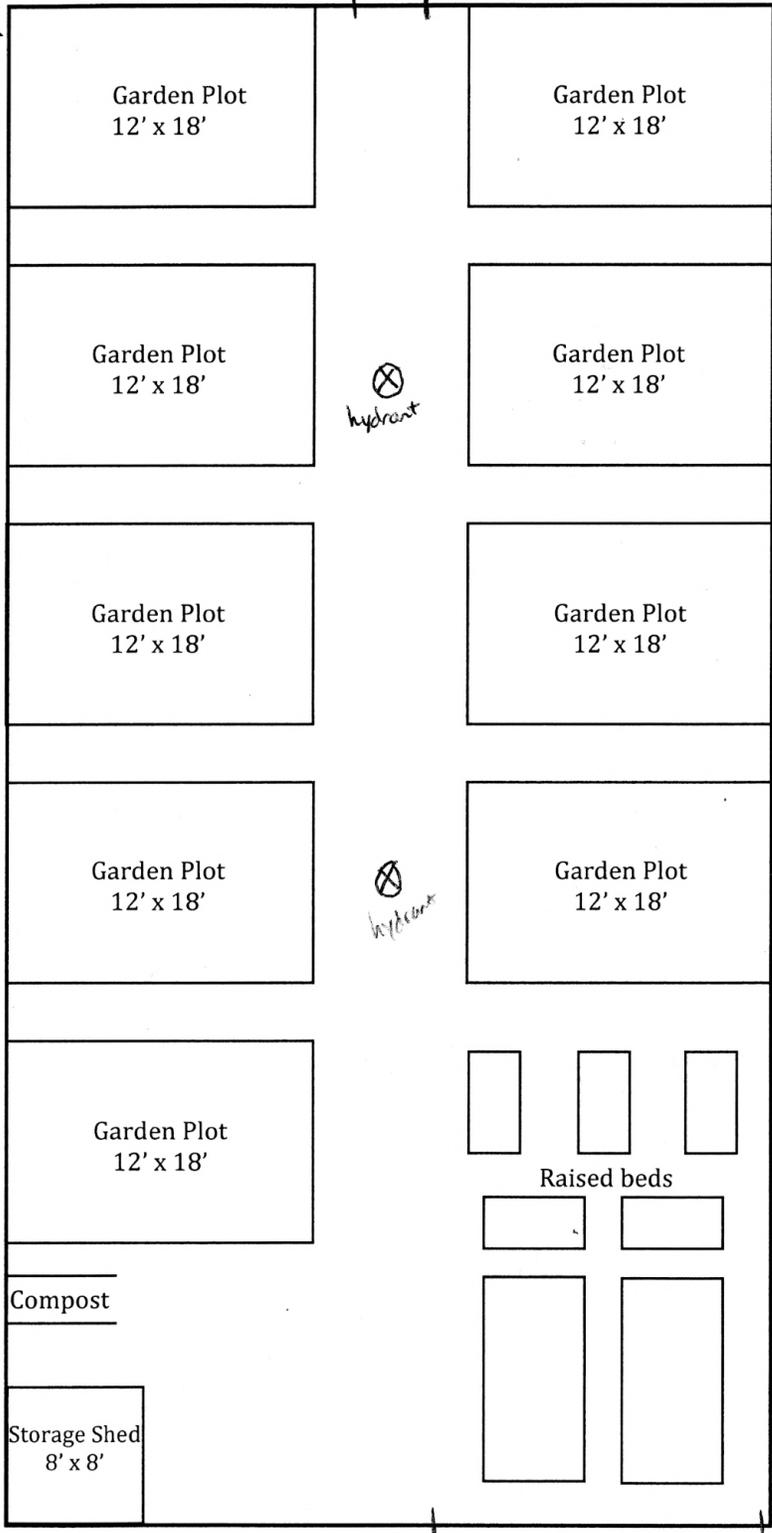
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Main Water Source

547



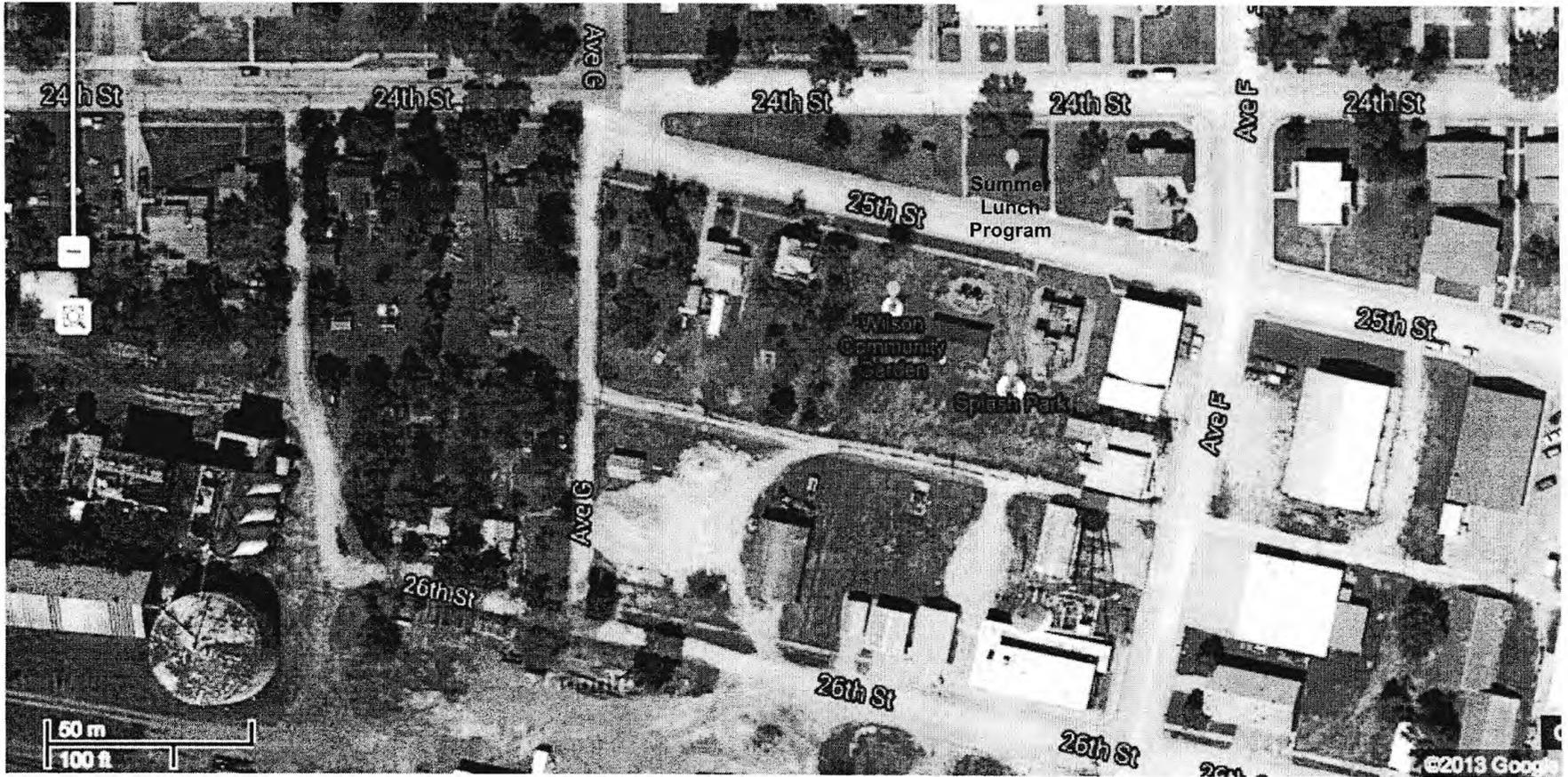


Figure 2. Location of garden, splash park and lunch program within Wilson, KS.

<i>Knowledge forLife</i>	Soil Test Report Vegetables	
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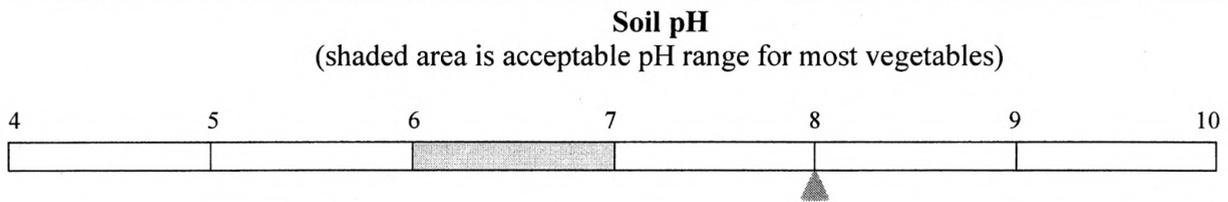
Submitted by:
Sophia Ford
418 Poyntz Avenue
Manhattan, KS 66502

Grower: Sophia Ford
Date Received: 5/16/2013
Date Reported: 5/16/2013

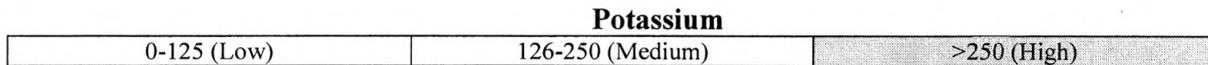
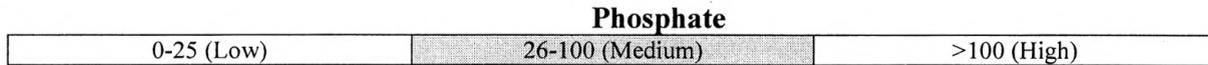
Lab Number: 14,918
Sample ID: 4
County: Riley

Your Results **pH:** 8.0 **Phosphate:** 89 **Potash:** 471

Other: **Nitrate Nitrogen:** 5 **Organic Matter:** 2.7%



Shaded area below represents the level of nutrients in the area tested.



Recommendations

pH: The pH is high for many vegetables. Do not add wood ashes as this will further raise the pH. Mix 2.5 pounds of sulfur per 100 square feet into the soil in the fall or before planting in the spring to lower the pH. Pelletized sulfur is easier to work with than the dust though either will work.

Organic Matter: The organic matter content of your soil is good.

Fertilizer: The level of nitrate is low but that is expected unless the area has been fertilized recently. The level of phosphorus in your soil is medium and potassium is high. Use **one** of the following fertilizers at the recommended rate.

- | | |
|--|---|
| 8-10-8 at 1 1/4 pounds per 100 square feet | 12-22-6 at 3/4 pound per 100 square feet |
| 9-13-7 at 1 pound per 100 square feet | 20-27-5 at 1/2 pound per 100 square feet. |

The fertilizer should be worked into the soil before planting. I have enclosed an additional sheet on sidedressing.

Recommendations by: Ward Upham

<i>Knowledge forLife</i>	Soil Test Report Vegetables	 K-STATE Research and Extension
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Submitted by:
 Sophia Ford
 418 Poyntz Avenue
 Manhattan, KS 66502

Grower: Sophia Ford

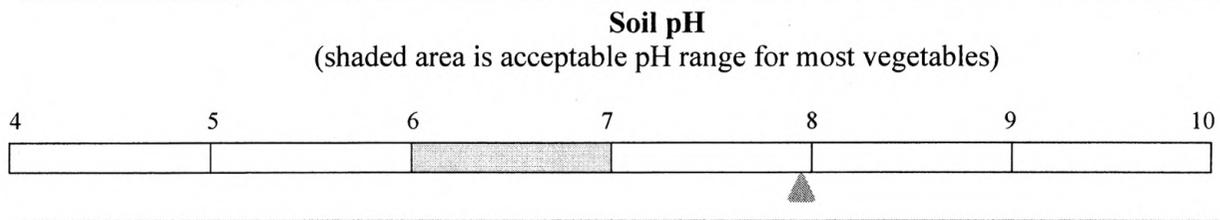
Date Received: 5/16/2013
Date Reported: 5/16/2013

Lab Number: 14,917
Sample ID: 3

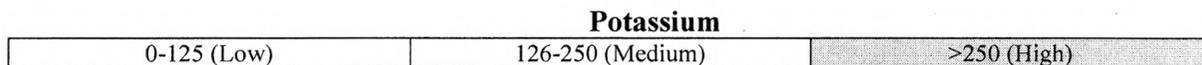
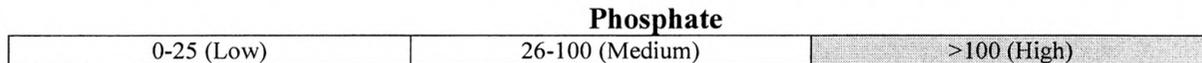
County: Riley

Your Results **pH:** 7.9 **Phosphate:** 107 **Potash:** 720

Other: **Nitrate:** 4 **Organic Matter:** 3.2%



Shaded area below represents the level of nutrients in the area tested.



Recommendations

pH: The pH is high for many vegetables. Do not add wood ashes as this will raise pH even further. Mix 2½ pounds of sulfur per 100 square feet into the soil either in the fall or before planting in the spring to lower the pH. Pelletized sulfur is easier to work with than the dust.

Organic Matter: The organic matter content of your soil is very good.

Fertilizer: Nitrogen is low but that is expected unless the garden has been fertilized recently. The levels of phosphorus and potassium in your soil are high. Apply **one** of the following fertilizers at the recommended rate in the spring before planting.

- Iron + (12-0-0) at 4/5 pound per 100 square feet
- Nitrate of Soda (16-0-0) at 3/4 pound per 100 square feet
- Ammonium sulfate (21-0-0) at ½ pound per 100 square feet
- Urea (46-0-0) at 1/4 pound per 100 square feet.

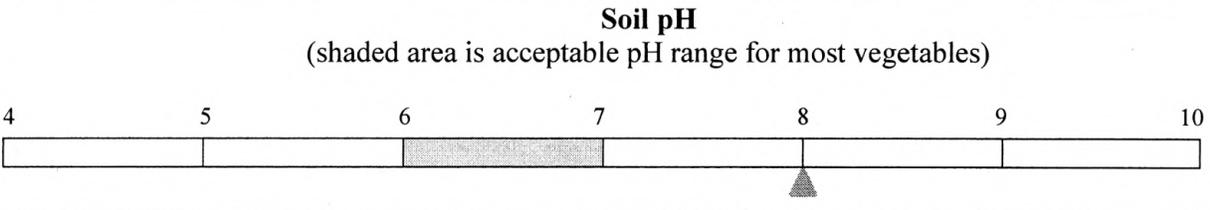
If you are unable to locate one of the above, you may use a lawn fertilizer such as a 30-3-3, 25-4-4 or something similar as long as the fertilizer does not contain a weed preventer or weed killer. Apply at the rate suggested on the bag. The fertilizer should be mixed into the soil before planting. I have enclosed an additional sheet on sidedressing.

Recommendations by: Ward Upham

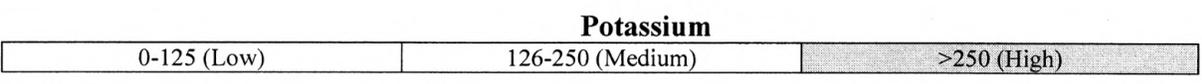
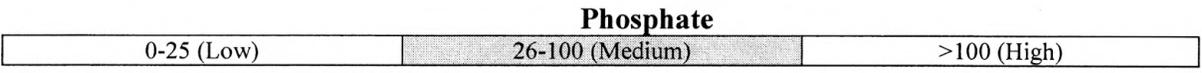
<i>Knowledge forLife</i>	Soil Test Report Vegetables	 K-STATE Research and Extension
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Submitted by: Sophia Ford 418 Poyntz Avenue Manhattan, KS 66502	Grower: Sophia Ford	Lab Number: 14,915 Sample ID: 1
	Date Received: 5/16/2013 Date Reported: 5/16/2013	County: Riley

Your Results	pH: 8.0	Phosphate: 58	Potash: 472
Other:	Nitrate Nitrogen: 3	Organic Matter: 2.3%	



Shaded area below represents the level of nutrients in the area tested.



Recommendations

pH: The pH is high for many vegetables. Do not add wood ashes as this will further raise the pH. Mix 2.5 pounds of sulfur per 100 square feet into the soil in the fall or before planting in the spring to lower the pH. Pelletized sulfur is easier to work with than the dust though either will work.

Organic Matter: The organic matter content of your soil is good.

Fertilizer: The level of nitrate is low but that is expected unless the area has been fertilized recently. The level of phosphorus in your soil is medium and potassium is high. Use **one** of the following fertilizers at the recommended rate.

- | | |
|--|---|
| 8-10-8 at 1 1/4 pounds per 100 square feet | 12-22-6 at 3/4 pound per 100 square feet |
| 9-13-7 at 1 pound per 100 square feet | 20-27-5 at 1/2 pound per 100 square feet. |

The fertilizer should be worked into the soil before planting. I have enclosed an additional sheet on sidedressing.

Recommendations by: Wad Upham

<i>Knowledge forLife</i>	Soil Test Report Vegetables	 K-STATE Research and Extension
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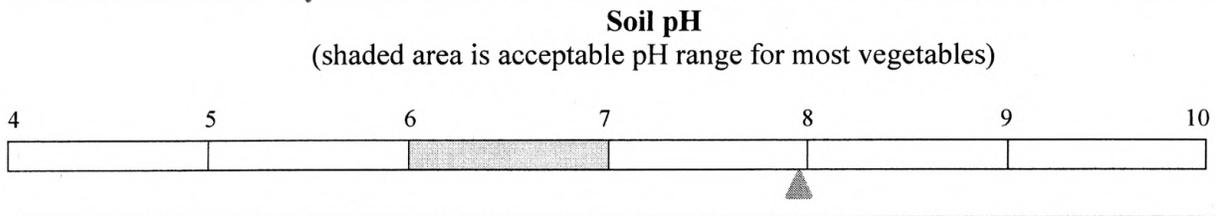
Submitted by:
Sophia Ford
418 Poyntz Avenue
Manhattan, KS 66502

Grower: Sophia Ford
Date Received: 5/16/2013
Date Reported: 5/16/2013

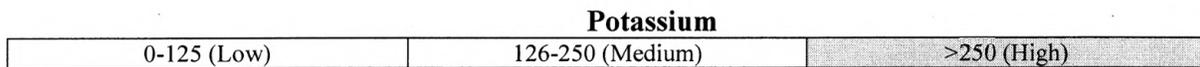
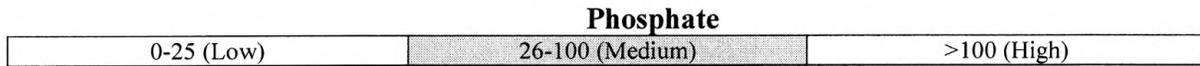
Lab Number: 14,916
Sample ID: 2
County: Riley

Your Results **pH:** 7.9 **Phosphate:** 71 **Potash:** 577

Other: **Nitrate Nitrogen:** 3 **Organic Matter:** 3.1%



Shaded area below represents the level of nutrients in the area tested.



Recommendations

pH: The pH is high for many vegetables. Do not add wood ashes as this will further raise the pH. Mix 2.5 pounds of sulfur per 100 square feet into the soil in the fall or before planting in the spring to lower the pH. Pelletized sulfur is easier to work with than the dust though either will work.

Organic Matter: The organic matter content of your soil is very good.

Fertilizer: The level of nitrate is low but that is expected unless the area has been fertilized recently. The level of phosphorus in your soil is medium and potassium is high. Use **one** of the following fertilizers at the recommended rate.

- | | |
|--|---|
| 8-10-8 at 1 1/4 pounds per 100 square feet | 12-22-6 at 3/4 pound per 100 square feet |
| 9-13-7 at 1 pound per 100 square feet | 20-27-5 at 1/2 pound per 100 square feet. |

The fertilizer should be worked into the soil before planting. I have enclosed an additional sheet on sidedressing.

Recommendations by: Ward Upham

Crop	Pounds per 100 ft. row ¹ (use only one of the fertilizers mentioned below)		Time of application (Sprinkle the nitrogen fertilizer in the row middles and water in if rain not likely)
	16-0-0 (Nitrate of Soda)	27-3-3, 30-3-4, 29-5-4 or something similar. ²	
Annual flowers	2	1	Four to six weeks after planting
Asparagus	4	2	Before growth begins in spring and again after harvest
Cabbage, Cauliflower, Broccoli	2	1	Three weeks after field transplanting
Cucumber, Cantaloupe	2	1	1. One week after blossoming begins 2. Three weeks later
Onions (mature)	2	1	One to two weeks after bulb formation starts
Peas and Beans	2	1	After heavy bloom and set of pods
Peppers, Eggplants	2	1	After first fruit sets
Potato	3	1.5	After tuber formation starts
Pumpkin	2	1	When vines start to run
Spinach, Kale, Mustard, Lettuce and Turnip greens	2	1	When plants about one-third grown
Sweet Corn	2	1	1. When plants are 8-10 inches tall 2. One week after tassels appear
Sweet potatoes, Watermelons, Carrots, Beets and Parsnips	None	None	Excessive amounts of nitrogen will reduce yields or lower quality or both. Side dressings of nitrogen not needed.
Tomato	2	1	1. One to two weeks before first tomato ripens 2. Two weeks after picking first ripe tomato 3. One month later.

¹When only a few plants are grown, use 2 tablespoons of 16-0-0 or 1 tablespoon of a 27-3-3, 30-3-4 or something similar per plant.

²Many of these fertilizers are lawn fertilizers but each will work well as long as there are no weed killers or weed preventers.

Note: One pint of fertilizer weighs approximately one pound.

design for sign



Use 4" x 4"s

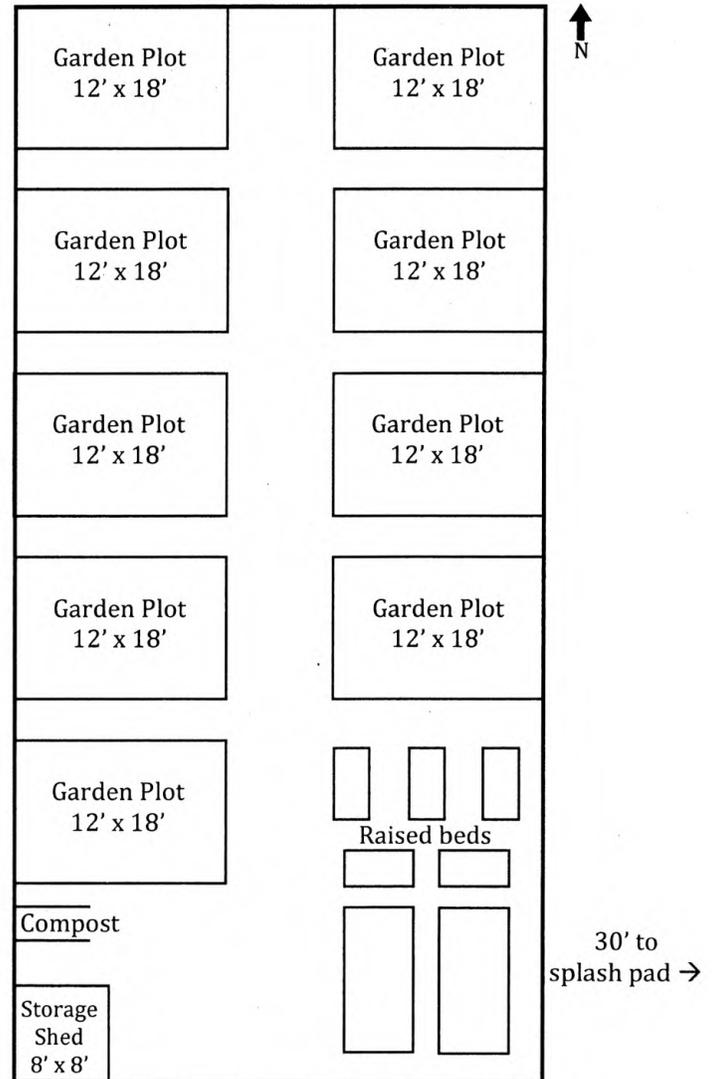
ground surface

Cement 3' in ground

WILSON COMMUNITY GARDEN

The Wilson Community Garden is a combination of a communal and allotment garden. The garden is located within the PRIDE Park, just south of the Methodist Education Building. Two plots will be devoted for educational purposes for the Summer Lunch Program, and the remaining available to rent.

Individuals with a plot must be willing to commit 5% of their harvest to assist either the summer lunch program, backpack program, Wilson Food Bank, Wilson Senior Center or the Bob Box food program for senior citizens. For more information on cost and availability, visit the City Hall or e-mail wilsonks.pride@gmail.com.



**Plots are available for the 2014 growing season.
Reserve yours today!**

Wilson Community Garden Contract

Introduction

The Wilson High School FFA Organization is the highest governing authority at the Wilson Community Garden.

Breaking any rules, terms, and conditions is cause for exclusion from the garden and loss of your plot. Everyone is asked to attend the April Work Day and an October Clean Up day since many hands make light the work. As a community gardener I understand the importance of helping with garden upkeep and improvement.

1. You will receive one verbal warning from the garden manager.
2. If no response or correction has been made, you will receive written notice two weeks later.
3. In another two weeks, if no response or correction has been made, you will receive written final notification that you have forfeited your gardening privileges and plot.
4. You will be allowed to reapply for another garden plot only after one year, and only at the discretion of the garden manager.

Rules, Terms, and Conditions for Participation

If accepted as a gardener, I will abide by the following rules, terms, and conditions:

1. I use this garden at the sole discretion of Wilson Community Garden. I agree to abide by its policies and practices.
2. There is no fee for the garden; however, you are asked to maintain your plot and attend work days as set out by the garden manager.
3. Once I have been assigned a plot, I will cultivate and plant it within two weeks. I will garden year round. My plot cannot be left fallow or unused for any period of three weeks or longer, more than one time a year.
4. My plot is (12x18) feet. I will not expand my plot beyond this measurement or into paths or other plots. I will keep all my plants within the limits of my garden plot and will not allow any plants to grow more than six feet high. I must keep my plot free of weeds, pests and diseases.
5. I will keep my plot, paths, and surrounding areas clean and neat. I will completely separate my trash into three groups: 1) dead plants, leaves, and other green waste plant parts; 2) rocks, stones, and asphalt; and 3) paper, plastic, cardboard, wood, metal, etc. I will put each type of trash only in the areas designated specifically for each. Anything I bring from my home I will take back home. I will not bring household trash and leave it at the Wilson Community Garden.
6. If I now have more than one plot, I will give up my additional plots by the end of this gardening year (December 31).

7. I will not plant any illegal plant. I will not smoke, drink alcoholic beverages, use illegal drugs, or gamble in the garden. I will not come to the garden while under the influence of alcohol or illegal drugs. I will not bring weapons or pets or other animals to the garden.
8. Guests and visitors, including children, may enter the garden only if I accompany them. They must follow all rules, terms, and conditions stated here. I will supervise my children at all times when they are in the garden. I am solely responsible for the behavior of my guests.
9. The garden manager will assign me general garden maintenance tasks each month, and I must complete them by the end of the month that I am assigned them.
10. I will not take food or plants from other gardeners' plots. I will not take anything from the garden that is not rightfully mine.
11. I will work to keep the garden a happy, secure, and enjoyable place where all participants can garden and socialize peacefully in a neighborly manner.
12. I agree to contribute 5% of my harvest to assist either the summer lunch program, Wilson Food bank, Wilson Senior Center or the Bob Box food program for senior citizens.
13. I forfeit my right to sue the owner of the property. The Wilson Community Garden is not responsible for personal injury or property damage incurred by any plot renter, or for theft, loss, or destruction of any property owned by any plot renter.

Waiver and Release

By signing this contract, I assume full responsibility for my garden plot.

I have read the foregoing contract, waiver and release of liability and voluntarily executed this with full knowledge of its content and intending to be legally bound.

Signed: _____ Date: _____
 Gardener

Approved: _____ Date: _____
 Garden Manager

08/13

Please Print:

Primary Gardener _____

Address _____

Phone _____

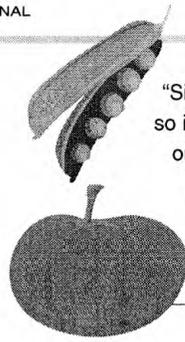
Email _____

Back up contact and / or gardening partner:

Name _____

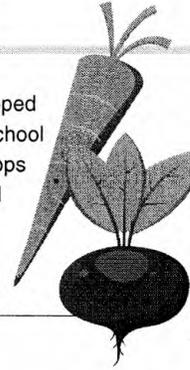
Address _____

Phone _____



"Since it's the first year, I'm trying to get it developed so it can sustain itself. I am working to get high school organizations involved, and there to be workshops showing different recipes, gardening tips and lessons on environmental quality."

SOPHIA FORD,
recipient of community service project scholarship



A fresh approach

NEW PROGRAM TO ENCOURAGE HEALTHIER EATING BY GROWING PRODUCE

By JENA SAUBER
Salina Journal

WILSON — With all eyes focused on the delicate plant, Sophia Ford parts the leaves to expose two large peppers. "This is what grows from the little flowers, remember those?" Ford asks the group of children gathered.

Her question is met with a flood of inquiries about how plants grow and why the homegrown peppers look different from those in a grocery store. She patiently answers each question.

"A lot of kids have never seen homegrown produce or don't understand how the process works," Ford said. "Now they can."

Ford's garden tour is a part of her Know it & Grow it program designed to educate Wilson youth about science and nutrition through gardening.

"It is so important to understand where your food comes from. Growing your own food allows you to have a healthier diet, curbs climate change because you aren't having to import produce and it's also a lot more cost effective than buying from stores," Ford said. "It makes sense."

Ford, a 2008 graduate of Wilson High School, graduated in the spring from Kansas State University with a degree in geology and a secondary degree in natural resources and environmental science.

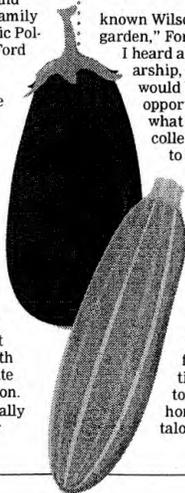
The money for the Know it & Grow it program came from the Marjorie J. and Richard L.D. Morse Family and Community Public Policy Scholarship that Ford received this spring. The \$3,000 scholarship, sponsored by the K-State Libraries, is for an undergraduate student with a community service project that has the potential to affect public policy.

Her program dovetails with the Wilson Community Garden, which is under construction. The garden is funded through a \$5,000 grant from the Kansas Health Foundation and K-State Research and Extension.

"I thought it was really cool because I'd never



EMILY DeSHAZER / Salina Journal
Alexis McCarter (from left), 5, Cara Criswell, 8, Leah Criswell, 5, Kristina Heinrich and Sophia Ford pick two green peppers from their community garden in Wilson on July 8. The peppers were the first vegetables harvested from the garden which also will provide tomatoes, cantaloupe and honeydew.



known Wilson to have a garden," Ford said. "Then I heard about the scholarship, so I thought it would be a really great opportunity to take what I've learned in college and give back to my hometown."

Until the community garden is ready next spring, Ford has utilized two raised beds at the Methodist Education Building, across the street from the garden's future location. She planted tomato, pepper, honeydew, and cantaloupe plants.

The harvest

During the week, Ford shares her garden with summer lunch program participants. The lunch program, held at the Methodist Education Building, serves between 45 and 60 youth daily Monday through Thursday.

"I talk to the kids about the garden, and show them things like how the fruit evolves into what we see in the grocery stores," Ford said. "There seems to be a negative connotation associated with fruits and vegetables. I hope to remove the association and encourage them to eat healthier."

Perils of processed food

Kids are sometimes cautious about trying the fresh produce because they are

more accustomed to processed food, Ford said.

"It's frustrating that the up-front cost of processed foods are more affordable than healthier options. In the long run, the processed foods cause health issues, and that is something I'm trying to emphasize with this garden," Ford said. "That's why we need gardens in rural America, so community members have something that is fresh and healthier."

Her program is simple but effective, Ford said.

"I'm showing them, 'This is a flower. Soon it will be a pepper.' It's really basic, but a lot of them have never seen their food growing, so it's really cool to engage them in that process," she said.

See FRESH, Page B5

Fresh / Learn about food

FROM PAGE B1

Community garden plot renters will be asked to donate 5 percent of their produce to community organizations such as the summer lunch program and the senior center. Two plots will be donated to the summer lunch program. All donated produce will be utilized, said program director Lynn Kasper.

"We will work it into the menu, and if we have extra, we will send it home with the kids," Kasper said. "If they donate produce, it will not go to waste."

On being responsible

Ford also hopes to teach the kids about responsible gardening practices.

"I want to involve them in environmental quality — like soil and water testing to ensure nutrient levels are sufficient and there is no contamination," Ford said.

Before beginning the garden, Ford tested the nutrient, lead and arsenic levels of the soil. All were satisfactory.

Ford and other community leaders hope to complete the 45- by 90-foot community garden by fall so it can be used starting next spring. It will be located in PRIDE Park, a central location in the community of

about 800 people. The park also has two sets of playground equipment, a shelter house and an in-progress spray park.

The finished garden will include nine 12- by 18-foot food plots and several raised beds.

"It will be a place where people can work side by side with other community members and enjoy gardening in an area where there will be other people," said David Criswell, the former Wilson mayor who applied for the grant. "It can be a lot of fun, and a community builder in terms of bringing people together."

Waiting for volunteers

Progress on the community garden is currently stalled, as they wait for enough volunteer workers, Criswell said.

"Ideally, it would have been nice if we could have right away gotten the garden built, but we don't have enough volunteers and summer kind of got away from us," Criswell said.

They plan to put in water lines, install a fence, till the ground, and install a compost unit and storage shed by the fall.

"I've already had people asking where they can sign up for a plot," Ford said. "That's encouraging."

The plots will be available for approximately \$5 a plot per season, Criswell estimated. Water will be provided for free through the city.

Ford will be leaving in the fall for an internship at the American Geosciences Institute in Washington, D.C., but hopes the program will continue.

"Since it's the first year, I'm trying to get it developed so it can sustain itself. I am working to get high school organizations involved, and there to be workshops showing different recipes, gardening tips and lessons on environmental quality," Ford said.

Important for Wilson

The garden and the education program are important for the community of Wilson, Criswell said.

"It is a really nice way to help people share in their community and enhance what the community has to offer," Criswell said. "It will be an opportunity for kids to get involved and learn about gardening, and to understand where food comes from — it's not just from the supermarket."

— Reporter Jena Sauber can be reached at 823-6464, ext. 139, or by email at jsauber@salina.com.

Randall / Small moments

FROM PAGE B1

- The light in Stretch's eyes as he vowed his love and the look his bride beamed in return, while Charlotte, their 2-year-old flower girl, rolled around on the ground at their feet.

- And the smiles on the faces of their family and friends who laughed and cried and wished them "happily ever after."

Life is remembered by

vacations.

But it is lived in the smallest of moments — as radiant and fleeting as sparks from a campfire or stars on a summer's night or the twinkling in the eyes of a child.

We record milestones with photos and videos, in the pages of the family Bible and postings on Facebook. It's harder to capture a moment. But that is all we have really this one pre-

flower girl a lifetime of precious moments — and lots of good times with their big blended family.

— Sharon Randall can be contacted at P.O. Box 777394, Henderson NV 89077, or at www.sharonrandall.com.

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Hearing Loss

Q. What are some warning signs of hearing loss?

A. Hearing loss usually occurs gradually. Some people experience ringing in the ears after exposure to loud noises, difficulty understanding speech in crowds, repeating themselves, difficulty on the phone (especially for women or children). Hearing loss affects the hearing system and the brain to code and decipher sounds. As the hearing loss progresses other symptoms include social isolation and inability to function in social settings. If your loved ones feel you have significant hearing loss, it is important to see an audiologist or your physician for evaluation.

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Salina Journal

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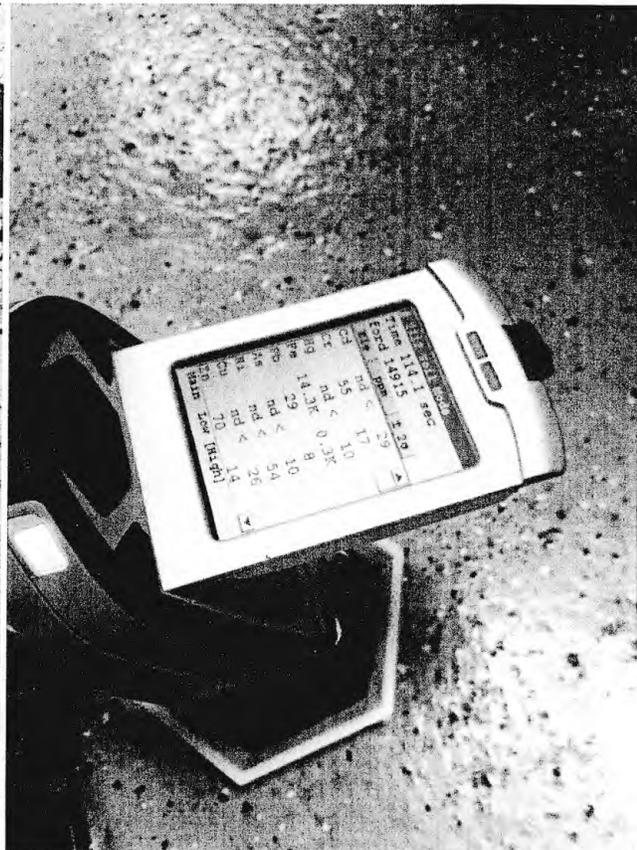
Decorative Crosses



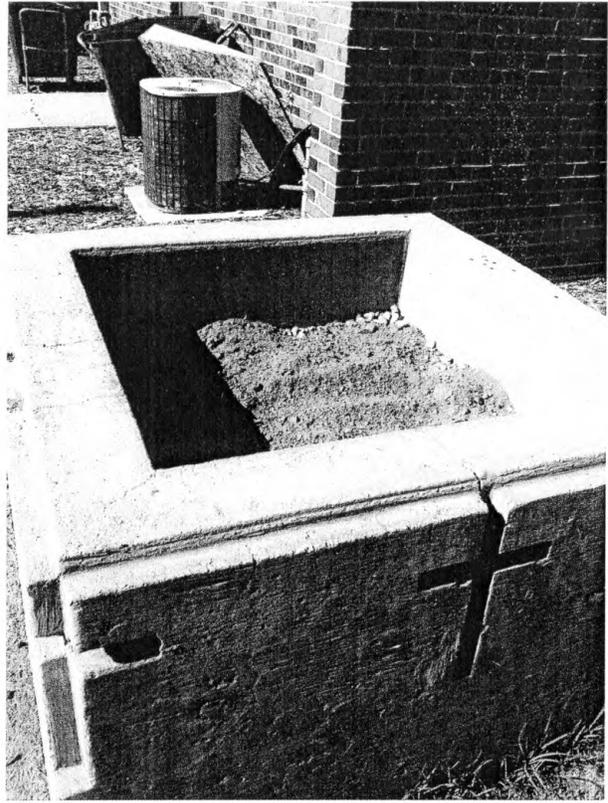
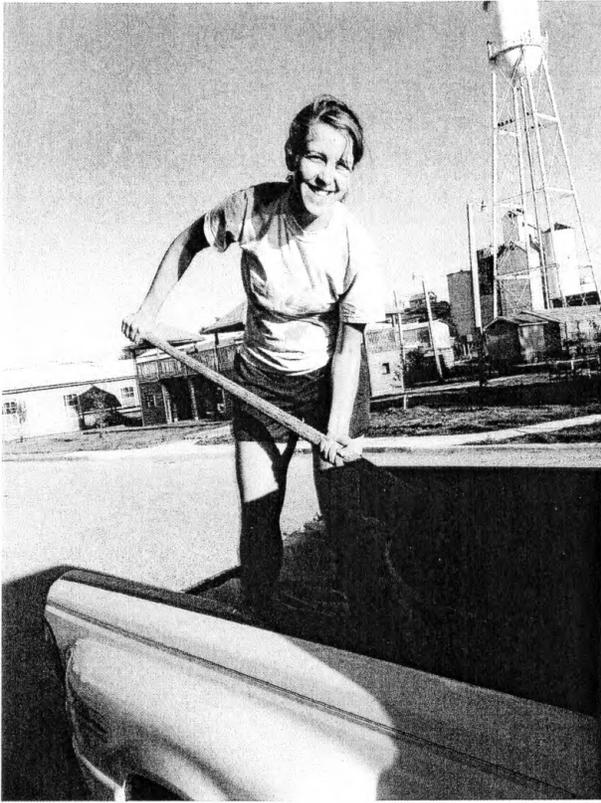
Future site of Wilson Community Garden taken May 2013.



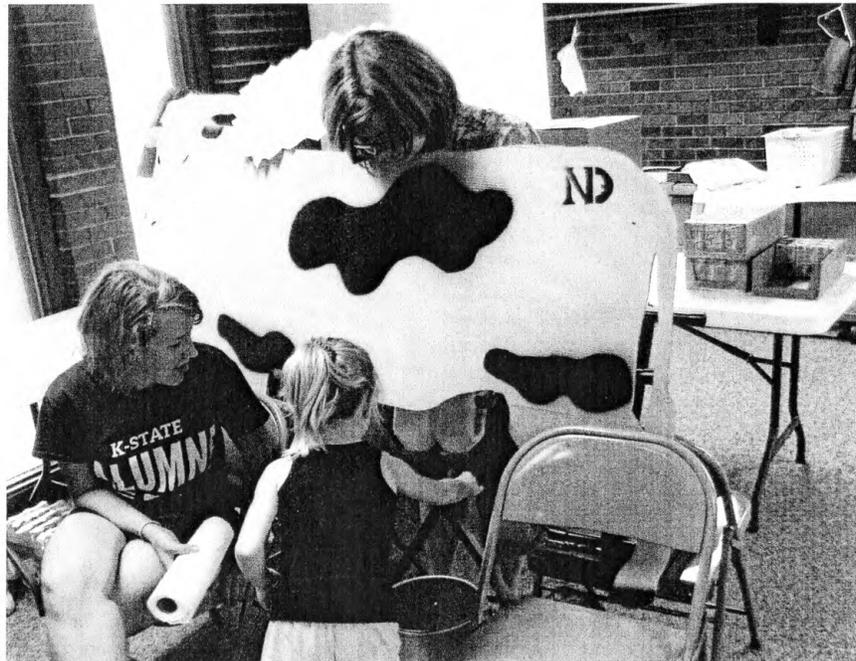
Using a soil probe to collect soil samples to be tested.



Analyzing soil for trace elements using XRF.



Adding compost and soil to raised beds.



Milking "Princess" during dairy week.

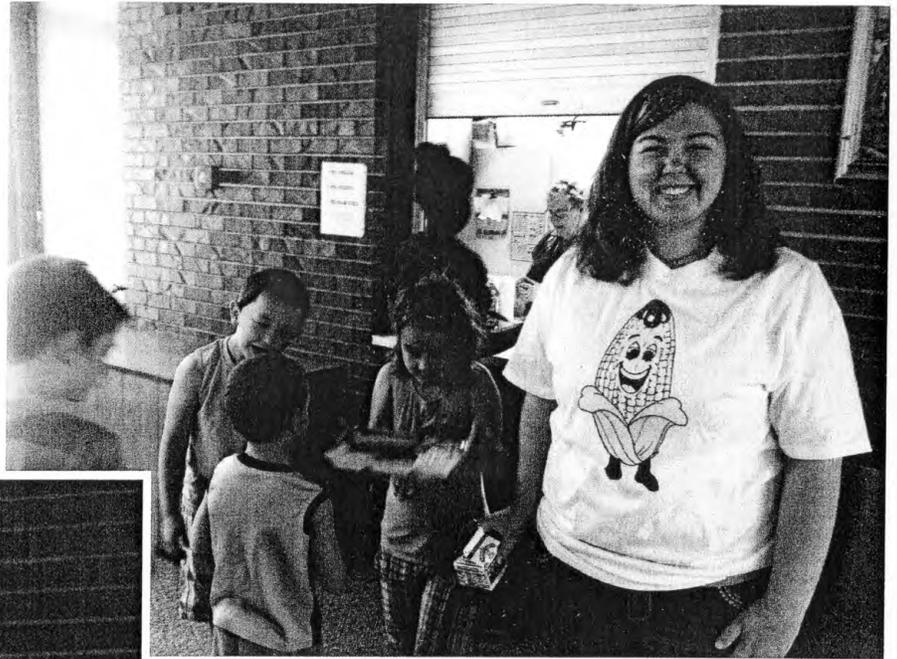


Youth help with watering and weeding following the lunch.



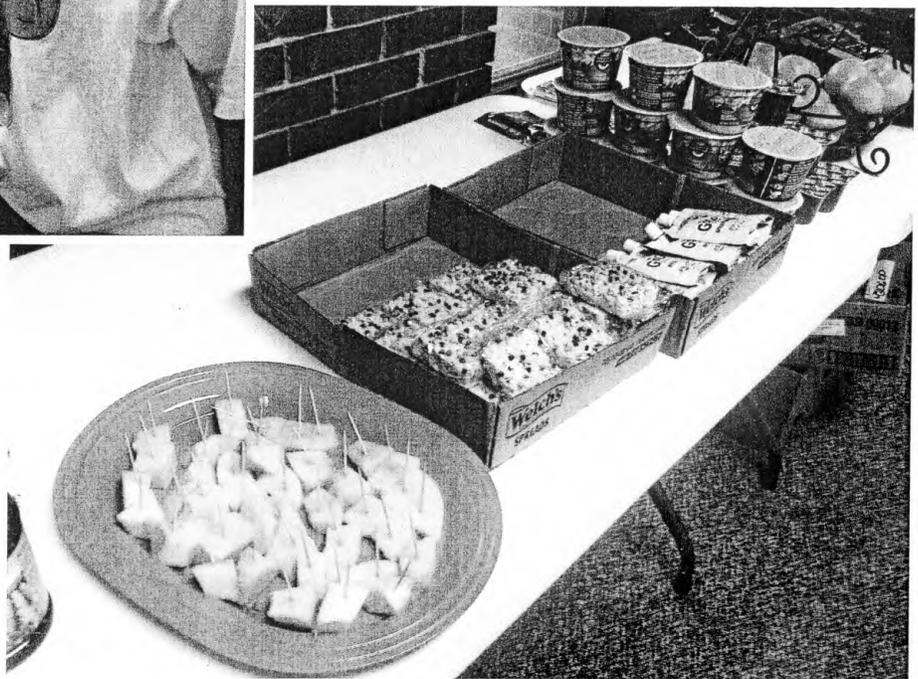
Leading lessons in the garden and picking the first pepper of the summer. (photo credit: Emily Deshazer)

Youth waiting in line for their lunch. Christina, a volunteer from 4-H, hands out milk and sports a goofy corn shirt to get kids talking and thinking about food.



Christina and I with our food cartoon shirts, which were suggested to be worn by the local dietician.

On Thursdays, kids are given additional food to take home and eat over the weekend. Cantaloupe (right) from the garden was served on this day.



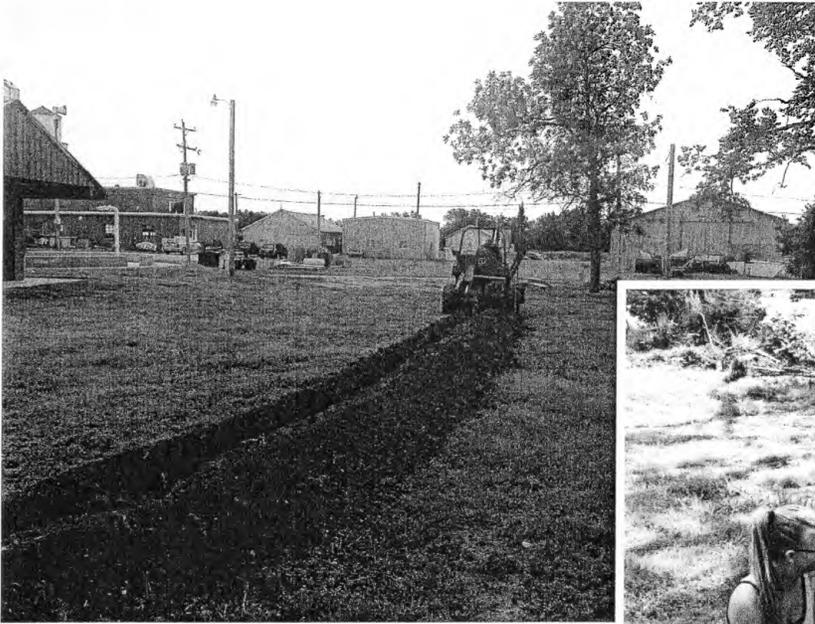


Peppers, tomatoes, cantaloupe and honeydew were used to start the education lessons at the Summer Lunch Program.



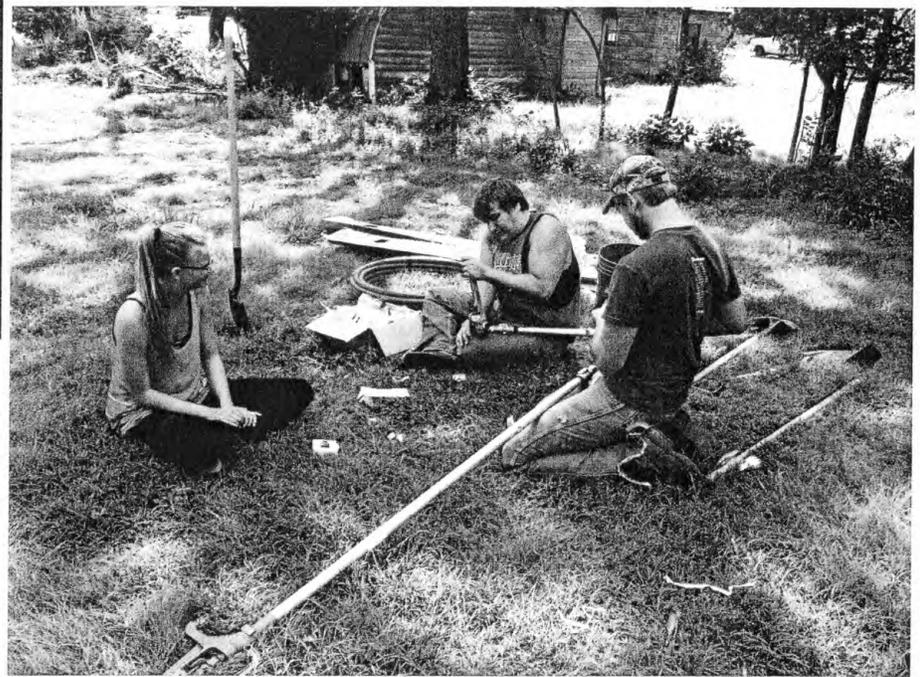
The plants flourished and all fruits and vegetables harvested were served at the lunches.





(left): Trench is dug for installation of water lines.

(below): Volunteers assemble spigots to be used for the garden.



(above): Volunteer tills the garden area before we install fencing.

(right): Setting the poles for a chain link fence.



