Jennifer short (left) Luke Short (center) and Gene Short (right) with their tree row.

GENE SHORT/ WINDBREAK AWARD

Gene Short plants windbreak trees

BY RYAN CARLSON

Gene Short won the 2017 Wind Break Award from the Natural Resource Conservation District.

Short's windbreak consists of 14 hackberries, 45 arborvitae and 32 ponderosa pine trees. Short decided to install the tree barrier after the original windbreak trees began getting old and dying off. "I wanted to get another windbreak going so that when they died I would hopefully have something else to replace them," said Short.

Short acquired the ground on which he planted the trees in 1999, and he began his new windbreak around 2001. The trees he received were bare rooted from K-State Research and Extension through a program by the National Forestry Service. He afterwards planted them via a post hole digger.

So far the windbreak has survived well. A few trees have had to be replanted, however nearly 17 years later he has already seen a difference from the new trees. His advise to others planning a tree row is to check with the soil conservation district. The district will help form a plan and finance the trees. "They'll give great advice on what to plant," said Short.

Irrigation scheduling has become extremely crucial as water supplies continue to be depleted across the state.

(photo by Ryan Carlson)

Not all waterways are created equal

BY WILLIAM SCHROTER

Although all waterways may look the same, each waterway has its own individual design. The two main factors in a field that determine the size of the waterway include: the amount of water that will be flowing through and the slope of the land.

First, look at how the land around the waterway will be affected by the size of the waterway. Most field waterways are designed using the 10-year, 24-hour storm. In Ellis County, Kansas, this is 3.94 inches. This does not mean a four inch rain will only occur once every ten years. This means there is a 10 percent chance of this happening each year. In comparison, the 100 year storm in Ellis County is 6.28 inches meaning there is a one percent chance that this will happen each year.

Second, consider the soil and cover type of the drainage area. A sandy soil is going to infiltrate water better than a hard clay soil, which in turn means less water running off the field. The plant species growing on this soil also plays a part in how much runoff will occur. A Conservation Reserve Program (CRP) field is going to contribute less run off water than a clean tilled field.

The last two factors involved are the shape and slope of the drainage area. A steep field will shed water more quickly than a flat field. The shape of the drainage area, such as a long narrow drainage area will need a smaller waterway than a round one with all other factors being equal. Runoff from the round drainage area will concentrate sooner at the waterway, increasing the flow rate that the waterway needs to handle. Now that it's been determined how much and how fast all this water will get to the waterway, we need to make sure it won't wash away. It's important to focus on the actual waterway construction area— the slope of the waterway, and the soil type. The steeper the slope of the waterway, the more erosive the water will be on the soil. Some soils can resist erosion better. A hard clay soil will hold together better than a sandy soil, which is more prone to erosion. If a waterway is on steep or erosive ground, the waterway needs to be widened to allow the water to spread out and flow at a more shallow depth.

A waterway in a field belonging to Wilbur Neaderhiser east of Lyons off of K56.

Another aspect to consider is the type of vegetation that will be planted in the waterway once it has been built. A short (or mowed) fine-stemmed grass will allow water to move through more quickly than a tall, bigger-stemmed grass. This can be advantageous if you have a good hard soil which will not erode, as it will allow water to get through faster, making your waterway shallower. A tall grass can slow the water down and cause it to flow deeper, but this will also help in keeping the erosion to a minimum. More factors are involved in the design process of a waterway, but these are the main factors to consider when designing the project.

If you are in need of a waterway, or would like to know what one would look like in your field, stop by your local Natural Resources Conservation Service (NRCS) office to discuss developing a design to meet your specific field/waterway needs.

Please contact your local NRCS office or conservation district office located at your local county U.S. Department of Agriculture (USDA) Service Center (listed in the telephone book under United States Government or on the internet at offices.usda.gov) for assistance. More information is also available on the Kansas Web site at www.ks.nrcs.usda.gov.

Organic farming: a growing field

BY MARK A JANZEN

Organic farming is one of the fastest growing segments in agriculture. In order to be "certified organic," producers must follow regulations outlined by the USDA National Organic Program (NOP). Managed by USDA's Agricultural Marketing Service, the NOP develops, implements, and administers national organic production, handling, and labeling standards.

Organic farming does not allow the use of synthetic chemicals, many of which can be found in the pesticides and fertilizers used in conventional farming. In the 1970s, organic farming began to develop as an industry. Initially, organically grown products could only be found in small health food stores. Because demand has risen over the years, most organically grown products are sold in supermarkets today. State or private inspectors now certify organic crops, thus guaranteeing that "organic" food is grown according to the principles of organic farming. Some of these principles include biodiversity, natural plant nutrition (no synthetic chemicals), and natural pest management.. Organic farming is an ecologically-based system that relies on preventative practices for weed, insect, and disease problems, and uses non-toxic methods to manage problems, if they arise.

There are nearly 20,000 certified organic operations in the U.S. and growth continues, as more producers enter the organic market. Currently, Kansas has 104 organic crop/produce farms and

54 handling facilities that are certified organic. Each year, Kansas organic operation numbers increase.

If you have an interest in becoming an organic producer, several steps are needed for certification:

-A transitioning period of 3 years immediately preceding the harvest of a crop, in which no prohibited substances are applied to the field.

-Complete an organic application and an organic system plan, and submit these to an organic certifier for review.

-An organic system inspector completes a farm inspection and forwards the findings to your certifier.

-The certifier makes the organic certification decision.

Following the organic certification, annual updates of the organic system plan (along with an in-field inspection) is required for re-certification.

Please remember, as both a producer and a consumer, that the "Organic" label may only be used if the product has been certified as organic. If there is a question, ask the producer for their organic certificate.

For additional information about organic certification, please contact the Natural Resources Conservation Service (NRCS) located in your county USDA Service Center (listed in the telephone book under United States Government or on the internet at offices.usda.gov).

Additional information can also be found on the Web at: https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/organic/

How to indicate how healthy your soil is

BY STEVEN GRABER

Soil health, also called soil quality, is a concept that has really gained steam in the United States, and locally, over the past several years. Soil health is complex, but the soil performs functions that are essential to crop growth and to the betterment of society and the environment. This is not solely limited to agriculture, but most work and evaluation has occurred on agricultural lands.

In order to evaluate soil health, a set of numerous indicators are used. These indicators may be qualitative or quantitative. These indicators should integrate physical, chemical, and biological properties, and be accessible to all users. They must be responsive to different management operations, and must adapt to differing climates.

Most producers are comfortable and knowledgeable of the chemical aspects of this equation, as many of them use soil tests for fertility. The physical and biological aspects are much more elusive and not as easily understood. Examples of the physical indicators could be available water capacity, bulk density, or infiltration. These three indicators can be grouped together into one example problem. When intensive tillage has occurred in the past, nearly every acre of cropland has developed a hardpan or tillage pan. These indicators are influenced by the following, through prolonged use of sweep plows operating at a depth of

4 to 5-inches, intense pressure has been exerted on the soil at and below this depth. A severe degree of compaction has occurred in generally a 4- to 6-inch layer, increasing the bulk density of the soil in this zone. The higher the bulk density in grams per cubic centimeter, the greater the density of the soil. When soil has an increase in bulk density in the hardpan layer, water infiltration is severely limited. If rainfall is unable to penetrate into the soil, it runs off. The more rainfall that runs off, the less available water there is for plant use. Although this is a simplistic example, it is a basic representation of the problem that exists on most farm ground. Another problem caused by high bulk density is the inability of plant roots to penetrate the compacted zone. This is evident in many failing crop fields where moisture is available below the hardpan, but the crops are unable to penetrate through the roots.

Another important indicator of soil health is the biological indicator. Soil organisms are responsible for the decomposition of organic matter, and cycling of nutrients. An easily recognizable biological indicator is the root worm activity in the soil. If soil is healthy, there are many earthworms. Earthworms play a key role in modifying the physical structure of soils by producing new aggregates and pores, which improves soil tilth, aeration, infiltration, and drainage. They improve soil porosity by burrowing and mixing soil, and roots often follow earthworm burrows and use available nutrients associated with the worm casts.

Determining the basic soil health of one's field does not involve a great investment in equipment or tests. The simplest tools to evaluate soil health in a farming operation is a sharpshooter and your own eyes. Dig a shallow hole, 12 inches deep will usually do, and observe what the soil looks like. Can you recognize surface crusting and the hardpan? Are the crop roots affected by the hardpan? Are there earthworms? If you do this, a whole new subterranean world may be opened up to you.

For assistance, please contact your local Natural Resources Conservation Service (NRCS) office or conservation district office located at your local county U.S. Department of Agriculture (USDA) Service Center (listed in the telephone book under U. S. Government or on the internet at offices.usda.gov). More information is also available on the Kansas NRCS Web site at www.ks.nrcs.usda.gov. Follow us on Twitter @NRCS_Kansas. USDA is an equal opportunity provider, employer, and lender.