



Successful tree planting isn't intricate, but much work is involved. Two of the many tasks involved include pruning and watering.

Successfully planting trees

Successful tree plantings are the result of proper planning, preparation of the site and maintenance of the planting.

Kansas is a state with extreme variations in the climate. Annual precipitation can vary from 15 to 45 inches depending on the area. The type of follow up care for trees will vary depending on the site in which it is planted. The following should be considered as part of your tree care plan.

Grass and Weed Control

Keep a minimum 3-foot radius around each tree free of grass and weeds for the first 3 years of the planting. This can be done with cultivation, herbicides, weed barrier or organic mulches. Choosing the best option will depend on the site conditions and the time and money you can invest in your planting. Mowing removes cover for the tree damaging wildlife and reduces fuel for wildfires. However, mowing by itself will not provide adequate control of the grass and weeds. The grass

and weeds will compete for moisture and nutrients in the new plantings.

Ground Cover

One of the most common mistakes in tree plantings is to allow brome or fescue to grow between the tree rows. These grasses provide competition to tree growth and slow the growth. In addition, secondary problems with insects or disease can occur.

If you must have ground cover between your rows and your tree planting is located in the western half of our state, choose Buffalograss, blue grama or sideoats grama because their roots are deep and are less competitive with young trees.

Replace Dead Seedlings

It is important to replace dead seedlings the first two years after planting and for windbreaks to avoid creating gaps and the loss of wind protection.

Protection

Protect all tree plantings from wildlife, livestock, wildfire and herbicide damage. Protection can be accomplished

with fencing, tree shelters, firebreaks, and making the neighbors aware of the location and importance of your tree planting.

Watering

Supplemental watering on dry sites during extended dry periods (every 5-7 days on sandy soil and every 7 – 10 days on clay soils) may be required. Watering in the fall before cold weather will keep the roots in good condition throughout the winter and will limit damage due to cold temperatures.

Pruning

Dead, broken or diseased branches may be pruned at any time. Otherwise, pruning should be avoided in young tree plantings. In general, windbreaks should not be pruned as pruning can reduce wind protection.

Trees are a valuable asset to any property in Kansas. They require a lot of dedication to get them started. They are both a financial and physical responsibility. However, the benefits far outweigh the time, labor and cost of caring for the trees.

Why cover crops are important

By **ROBERT C. SCHIFFNER,**
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Soil should always be covered by growing plants, their residues, or a combination of the two. Healthy soils are full of microorganisms living in the soil that have the same needs as other living creatures. They need food and cover to survive. The healthiest soils are those with a diversity and abundance of life.

When you have a vegetative cover on the soil, especially in living cover, you offer those microbes both food and shelter. Some feed on dead organic matter and some eat other microbes. As a group, they cycle nutrients and build the soil and give it structure.

The tiny fraction of soil composed of anything and everything that once lived—organic

matter—is more than an indicator of healthy soil. The carbon in organic matter is the main source of energy for all-important soil microbes and is the key for making nutrients available to plants. Organic matter supplies, stores, and retains such nutrients as nitrogen, phosphorous, and sulfur. Soil properties influenced by organic matter can increase water infiltration rates and increase the ability to store water, soil structure, and soil organisms. One percent of organic matter in the top six inches of the soil can hold approximately 27,000 gallons of water per acre. Organic matter can also help reduce soil erosion.

Cover crops, green manure crops, and perennial forage crops add organic matter, as do compost and manure. Soil organic matter can be increased by minimizing

tillage, planting as many different species as possible in your rotations, and planting diverse mixtures of cover crops that keep the soil covered with residue year round.

In other words, if you are trying to make your soil healthier, you should not see the surface very often. Consider keeping your soil covered.

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



Diversions are earthen embankments that reduce erosion and improve water quality.

Diversion vs. terraces

By **JOHN VAVROCH,**
NRCS CIVIL ENGINEERING TECHNICIAN

When the decision is made to install structural practices, this question often comes up. “Should I terrace the field or could I install a diversion?” Every field is different, but all fields need the foreign drainage controlled and work must begin at the top of the field.

Terraces are designed to handle the runoff only from the terrace above. Usually, a terrace height of 1.5 to 1.7 feet is adequate. Diversions are designed to handle the total drainage area above the diversion. Like terraces, diversions can be level which store water; or gradient, which runs water to a suitable outlet. Storage is the critical factor in level diversions. The storage area can be long and shallow or short and deep. Cost is a big factor. Diversions are paid for by the cubic yard while terraces are paid by the linear foot. Huge diversions quickly become expensive and

are not cost effective.

Diversions should not be installed in lieu of terraces. If a diversion is installed too far down the slope in the field, it may become overloaded with sediment and become a maintenance problem. A good rule of thumb—if the diversion channel has any gullies or evidence of concentrated flow above it, it is too far down the slope.

In some instances, the amount of foreign drainage is just too much. The drain is carrying a large sediment load, and erosion is severe. A grassed waterway might be the best way to convey this water safely from point A to point B.

Waterways are also designed for the amount of acres that run through them. Referred to as drainage area, this is a big factor in the design width and depth of the waterway. A 200-acre drain that is plump or round has a shorter time of concentration than a 200-acre drainage area that is long and skinny. The long and skinny area

would have a longer time of concentration. The quicker the peak flow gets to the structure, the wider and deeper the waterway needs to be.

Velocity or the speed in which the water flows through the structure also affects the width and depth of the waterway. The peak flow in the waterway can be designed to run narrow, deep, and fast. Or it can be designed shallow, wide, and slow. The type of soil is the determining factor for allowable velocities in grassed waterways.

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Kansas NRCS conducting studys on Kansas soil health

By Karri Honaker

The 68th session of the United Nations announced 2015 to be the “International Year of Soils.” The topic of soil importance has been gaining momentum for several years now and it doesn’t look like it will be slowing down anytime soon. So why all the fuss? Everyone eats don’t they? Take a moment to contemplate how agriculture touches your life. Without the soil, there would be no agriculture and that means, no you! It doesn’t take long to figure out that soil is the basis of everything we do, especially here in Kansas with agriculture

being one of the top industries in the state. Now that everyone is becoming more familiar with soils and why they are so important, the Natural Resources Conservation Service (NRCS) would like to focus more specifically on soil health.

The Kansas NRCS has launched a soil health campaign to bring this message home. In order to fully support the soil health campaign, NRCS employees throughout Kansas have jumped on board and have carried out several soil health strategies to enhance the soil health message. One of those strategies is looking at soil health

indicators in soil tests. The four soil health tests include aggregate stability, active carbon, CO2 burst method, and the solvita SLAN (Soil Labile Amino Nitrogen) tests. The aggregate stability test runs the soil through a series of tests that will determine the extent to which soil aggregates resist falling apart when moistened. Active carbon tests determine what fraction of the soil organic matter is readily available as an energy source. Microbial activity in the soil gives off carbon dioxide which is measured after drying and rewetting the soil in the CO2 burst method test. The SLAN test measures the available organic nitrogen. Sample depths range from 0-2 inches and 2-6 inches and are a composite of 5-15 sub samples per acre.

In order to completely interpret the tests, information such as cropping history for the previous two years is needed, along with soil maps of the property and global positioning system (GPS) points of where the samples were taken. These specific tests will allow us to gain knowledge on just how healthy the soils in Kansas are and what we can do to continue to improve soil health throughout the state.

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Practice Design

By **MARTIN GUGELMAN**
NCRS ENGINEER

Conservation practices can greatly increase the value of your property. In some cases they can help you maintain the value that your land already has. There are many types of conservation practices that can help you address your specific resource concern. All of which will need to have a design prepared before installation. Some typical examples of conservation practices may include terraces, diversions, waterways, ponds, livestock wells, livestock pipeline, and irrigation wells.

Each conservation practice comes with its own questions and concerns that need to be addressed prior to installation. Some of those questions might be: How many do I need? How big should it be? Where should it be located? What materials should it be made of? How do I take care of it once it is installed? Just to name a few. These questions and concerns

are addressed in the design process of your conservation practices.

Conservation practice designs can vary from a few pages to an extremely large and complex document covering numerous practices needed to address resource concerns. Practice designs will conform to the conservation standards set forth for each practice and will be installed as directed in the appropriate practice specification. The operation and maintenance portion of the design will explain the activities that are needed to keep the practices operating as designed for their anticipated lifespan. A good quality design is a very important part of installing conservation practices on your property.

Your local Natural Resources Conservation Service (NRCS) office personnel can assist you with the development of a quality design for conservation practices needed to address your resource needs.

Congratulations to all of the
Rice County Soil
Conservation Award Winners
and Thanks to all Rice County
farmers who practice good soil
stewardship.

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