What's Growing In Kansas?

Agriculture's Vital Resources

Part six of a seven-part series on Kansas Agriculture

Two of our most important natural resources are soil and water. Without them we could not survive. We all know that humans and animals need water to drink and water is also necessary for growing our food supply. But we often don't think about the importance of soil. Soil is the substance in which most of our food is grown or raised. It also provides space for our buildings and communities and acts as a filter for our groundwater.

Soil, which is formed over millions of years, is produced from broken down rocks, organic matter (decayed animal and plant life), water and air. There are nearly 21,000 soil types in the United States – over 300 in Kansas. All soils are made from varying amounts of silt, sand and clay. Each soil type is suited for different use. Some soils can support the massive weight of buildings and airports, while other are best for crops or rangeland.

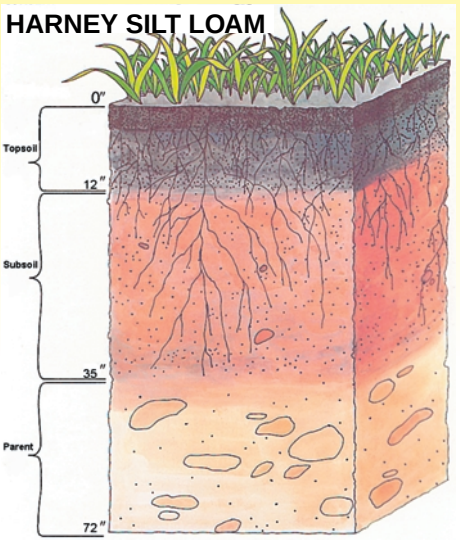
Soil is normally found in layers. Soil layers are distinguished by different colors. The adjacent soil profile is Kansas' state soil, Harney silt loam. Harney silt loam is the most extensive soil in the state covering 3,976,000 acres in westcentral Kansas. It is an ideal prairie soil that is good for growing wheat and grain sorghum.

Even though Kansas is blessed with abundantly rich soils, soil erosion by wind and water continues to eat away at our food and fiber production base.

THE WATER CYCLE

Did you know that the water you drank this morning might have been the same water a dinosaur drank millions of years ago? There is the same amount of water on Earth today as there has always been. The water keeps moving around in an endless cycle called **the water cycle**.

Water itself is the only substance that exists in liquid, gas and solid form - the keys to the water cycle. In the water cycle, water evaporates from oceans, rivers and lakes (water in its liquid form) and rises into the atmosphere (water in its gas form) where it condenses to form clouds. Precipitation then falls to the earth in the form of rain (water in its liquid form) or snow (water in its solid form) where it flows into oceans, rivers and lakes and the process begins again.



Of all the water on Earth, over 99 percent (oceans, seas, ice, and atmosphere) is not available for our use. The remaining 0.3 percent, produces much of the world's food supply.

When needed, Kansas farmers use irrigation systems to deliver water to their crops. On average, irrigation uses 3,714.39 million gallons each day of Kansas' water supply. That water is turned into millions of bushels of grain and feed consumed by people and livestock; or byproducts from soy and corn that can be manufactured into items like plastics, converted to fuels or burned for heat. Irrigation is a practical and economical tool to enhance crop growth. Without irrigation, many Kansas farmers would not be able to grow crops, especially in the drought-like conditions we have been experiencing for the past years. Prudent farmers adopt water conservation practices that prevent the over use of the water supply and lower the cost of raising crops and livestock.

Activities

1. Go to the USGS Website (http://ga2.er.usgs.gov/kswater/wateruseks.cfm) and research your county's fresh water use. What is the largest user of fresh water in your county? Choose two other Kansas counties and compare the results.
2. Look through the newspaper to see if you can find articles that deal with how the weather is affecting this year's crops. (You can also use your reporting skills and interview a farmer.) Write a paragraph about information you obtained and state whether or not you think that this year's crops will have a high yield.
3. The average American uses 50 gallons of water each day for drinking, bathing, cooking, etc. What is the average use per person for the following activities: (circle the correct answer)
   a. Brushing your teeth – (1.) 2 to 5 gallons (2.) 1gallon (3.)1/2 gallon
   b. Washing a car – (1.) 10 gallons (2.) 25 gallons (3.) 50 gallons
   c. Flushing the toilet – (1.) 1/2 gallon (2.) 1 1/2 to 4 gallons (3.) 6 to 8 gallons
   d. Taking a shower or bath – (1.) 5 gallons (2.) 10 to 12 gallons (3.) 17 to 24 gallons
4. List five ways that you can conserve water.

3.(a.) 1. 2 to 5 gallons; (b.) 3. 50 gallons; (c.) 2. 1 1/2 to 4 gallons; (d.) 3. 17 to 24 gallons

Resources:
United States Geological Survey (www.usgs.gov), The Groundwater Foundation (www.groundwater.org), The Water Education Foundation (www.water-ed.org) and the USDA Natural Resource Conservation Service Kansas state office