Agricultural Water Conservation Practices Worksheet

Answer Key

Farmers make water conservation a priority and find the best practices that work for their farm. Knowing more about water conservation technologies is key to understanding the work farmers put into monitoring their water usage.

Watch the Farmer Bill videos, "How Farmers Converse Water" and "Irrigation Technology." Use these videos and the provided additional resources to expand your knowledge about water conservation practices.

Irrigation Scheduling

Additional resource: https://bit.ly/3dKCfbE

1. How would you describe irrigation scheduling?
   Student answers may vary.

2. If your soil has a lot of moisture when checked, what would be your irrigation schedule?
   Student answers may vary, but should be something similar to not watering the field until the soil shows lack of moisture needed to grow a healthy plant.

Drought Tolerant Crops

1. What is a drought tolerant crop?
   Genetically engineered crop that allows the crop to grow in areas that receive limited water.

2. What are two advantages of growing drought tolerant crops?
   Student answers will vary.

Cover Crops

Additional resource: https://bit.ly/3ILH2b0

1. When are cover crops planted?
   After the cash crop has been harvested to protect the bare soil.

2. Name 3 benefits of cover crops for soil. Student answers may vary.

Management and Conservation Tillage

Additional resource: https://bit.ly/3ypVPmR

1. What percentage of soil must be covered in crop residue for it to be considered conservation tillage?
   30 percent

2. Water and nutrient infiltration will improve as what increases?
   By building up organic matter due to limited tillage

3. Of all the conservation tillage benefits, which do you think is most important today?
   Student answers will vary.

4. What is the difference between no till and mulch till?
   No till is the best at soil conservation because the soil is left undisturbed after harvest and the new crop is planted into the ground only creating a small row where the soil was disturbed. Mulch till disturbs the residue on the entire field prior to planting but still leave 30% of the soil surface covered in residue. The rest of the residue is buried in the ground.

Irrigation Technology

Describe each of the following irrigation technology and how it is used to conserve water:

1. Soil Moisture Probe: A tool that is put in the ground to determine how much moisture is in the soil. With this information the farmer will only water the crops when water is needed.

2. Aerial Imaging: A drone or satellite takes images of the earth such as ariel thermal image to determine what parts of the field are cooler and warmer to determine which parts of the field need water. This helps the farmer only water parts of the field where water is needed.

3. Variable Rate Technology: This technology allows the farmer to apply different amounts of water on the field instead of applying the same amount of water across the entire field. Being able to apply water at a variable rate conserves water by not applying water where it is not needed.

4. Pivot Monitoring: Using their phone a farmer can control their irrigation system. This allows them to shut off the pivot or turn on when needed without being in the field.