****

**Agricultural Irrigation Tools**
Fill in the blanks with the correct answer; then locate the words in the word search.

**Questions:**

1. This tool can be used to estimate crop water use. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. These tools monitor soil moisture and aid in determining when to trigger the first and last irrigations. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Three variables in addition to air temperature that aid in the determination of crop water use. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. An ETgauge reading provides a change (in inches) on a weekly basis. This reading is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ET and should be multiplied by the crop \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in order to determine the accurate crop water use determined by crop stage of growth.
5. Once the net irrigation requirements are determined, producers should take into account the gross irrigation requirement based on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the irrigation system.
6. The Kc or crop coefficient of soybeans at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ node is .40.
7. Corn crop coefficients are 1.10 during these three reproductive stages. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Irrigation \_\_\_\_\_\_\_\_\_\_\_\_\_\_ requires knowledge of when and how much water to apply to optimize crop production.
9. Soil water content is an indication of the amount of water present in the soil \_\_\_\_\_\_\_\_\_.
10. When soil water is extracted by plants the most readily \_\_\_\_\_\_\_\_\_\_\_\_\_\_ water is removed first.
11. Soil types & \_\_\_\_\_\_\_\_\_\_\_\_will determine how to manage watermark sensors.
12. Watermark sensors should be installed in locations with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ soil and crop conditions.
13. Watermark sensors should be installed in the \_\_\_\_\_\_\_\_ of the crops.
14. A 7/8 inch diameter soil \_\_\_\_\_\_\_\_\_\_\_\_is the best to make a sensor access hole to the depths desired.
15. Three sensors are usually installed at the 1, 2, and 3 \_\_\_\_\_\_\_\_ depth.
16. Before installing sensors, they should be \_\_\_\_\_\_\_\_\_ in a bucket of water and went through a wetting and drying cycle.
17. Most silty clay loam soils have a water holding \_\_\_\_\_\_\_\_\_\_\_ of 2.20 in/ft.
18. The suggested irrigation trigger point (kPa) for a silty clay loam soil is between \_\_\_\_\_\_\_ and 110.

****

Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the Counties and the United States Department of Agriculture.

Nebraska Extension educational programs abide with the nondiscrimination policies of the University of Nebraska–Lincoln and the United States Department of Agriculture.

**Agricultural Irrigation Tools**

**Word Search**

****

**Agricultural Irrigation Tools**
Fill in the blanks with the correct answer; then locate the words in the word search.

ANSWER KEY

**Questions:**

1. This tool can be used to estimate crop water use. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *ETgauge or Atmometer*
2. These tools monitor soil moisture and aid in determining when to trigger the first and last irrigations. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *Watermark Sensors*
3. Three variables in addition to air temperature that aid in the determination of crop water use. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. *Solar Radiation, Wind, Humidity*
4. An ETgauge reading provides a change (in inches) on a weekly basis. This reading is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ET and should be multiplied by the crop \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in order to determine the accurate crop water use determined by crop stage of growth. *Reference, coefficient*
5. Once the net irrigation requirements are determined, producers should take into account the gross irrigation requirement based on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the irrigation system. *Efficiency*
6. The Kc or crop coefficient of soybeans at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ node is .40. *Second*
7. Corn crop coefficients are 1.10 during these three reproductive stages. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *Silking, Blister, Dough*
8. Irrigation \_\_\_\_\_\_\_\_\_\_\_\_\_\_ requires knowledge of when and how much water to apply to optimize crop production. *Management*
9. Soil water content is an indication of the amount of water present in the soil \_\_\_\_\_\_\_\_\_. *Profile*
10. When soil water is extracted by plants the most readily \_\_\_\_\_\_\_\_\_\_\_\_\_\_ water is removed first. *Available*
11. Soil types & \_\_\_\_\_\_\_\_\_\_\_\_will determine how to manage watermark sensors. *Textures*
12. Watermark sensors should be installed in locations with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ soil and crop conditions. *Representative*
13. Watermark sensors should be installed in the \_\_\_\_\_\_\_\_ of the crops. *Row*
14. A 7/8 inch diameter soil \_\_\_\_\_\_\_\_\_\_\_\_is the best to make a sensor access hole to the depths desired. *Probe*
15. Three sensors are usually installed at the 1, 2, and 3 \_\_\_\_\_\_\_\_ depth. *Foot*
16. Before installing sensors, they should be \_\_\_\_\_\_\_\_\_ in a bucket of water and went through a wetting and drying cycle. *Soaked*
17. Most silty clay loam soils have a water holding \_\_\_\_\_\_\_\_\_\_\_ of 2.20 in/ft. *Capacity*
18. The suggested irrigation trigger point (kPa) for a silty clay loam soil is between \_\_\_\_\_\_\_ and 110. *Ninety*

 