In-Service Training (IST#: 30688)

Strategies for Minimizing Salinity Problems and Optimizing Crop Production

Tuesday, March 26, 2013

Polycom from 595 E. St. Johns Avenue, Hastings to six host sites statewide

Street:_____City:_____Zip code:_____

Pretest

Name:_____(Use the same name or symbol for both pre- and post tests)

1. Salts can be introduced to agricultural systems primarily through which of the following ways (circle all that apply):
   A. Dissolution of parent rock material
   B. Atmospheric deposition
   C. Irrigation water
   D. Fertilizer
   E. Manure

2. Measurements for salinity can be conducted using which of the following methods (circle all that apply):
   A. Electrode probes
   B. Electromagnetic induction (EMI)
   C. Neutron probes
   D. Time domain reflectance (TDR)
   E. Soil paste extracts

3. How much saltwater will one foot of freshwater above average sea-level displace?
   A. 1 foot
   B. 10 feet
   C. 20 feet
   D. 40 feet
   E. 80 feet

4. A cone of depression-
   A. Is caused by groundwater pumping
   B. Can result in up-coning and entrainment of increased saltwater
   C. Can be reduced by lowering pumping volumes
   D. Is not as prominent when aquifer transmissivity is high
   E. All of the above
   F. None of the above rain

5. What are the effects of salts on plants?
   A. Depression of the external osmotic potential
   B. Reduction in plant water availability
   C. Reduction in plant growth
   D. Imbalance of nutrients
   E. All of the above

6. Crops grown under conditions with high salinity may show reduced growth. In this situation the addition of extra fertilizer:
   A. Will alleviate the growth inhibition by salinity
   B. Will not alleviate the growth inhibition by salinity
   C. Gypsum will alleviate the growth inhibition by salinity
   D. If applied at the right time, extra fertilizer will reduce the salinity

7. Frequent fertigation applications can reduce the detrimental effects of salinity of crops.
   A. False
   B. True

8. How much rain does it normally take to flush salts from root zones in sandy Florida soils where accumulated salts are a problem?
   A. 0.25 inches
   B. 0.5 inches
   C. 1.0 inches
   D. 3.0 inches

9. A grower has a field of strawberries and there is only one source of irrigation water. The salinity (ECw) of the irrigation water is 1.0 dS/m. If the grower were to irrigate strawberry and achieve a seasonal leaching fraction (LF) of 10%, what is the expected yield potential (%) assuming rainfall does not contribute to additional leaching? The 'threshold, a' and 'slope, b' values are 1.0 and 33, respectively.
   A. 47%
   B. 57%
   C. 67%
   D. 77%
   E. 87%

10. Assume soil samples were collected from the field and the soil salinity (ECe) values are reported in the table below.
    a) What yield potential would you expect for cucumber (a= 2.5 b= 13)?

Soil Depth	Pre-season samples (ECe, dS/m)	Post-season samples (ECe, dS/m)
0-1 ft	2.0	3.0
1-2 ft	3.0	4.0
2-3 ft	4.0	5.0

    A. 47%
    B. 57%
    C. 67%
    D. 77%
    E. 87%

11. Assume that the effective rooting depth is 3ft. b). If the irrigation water had a salinity (ECw) of 2.0 dS/m, what leaching fraction (LF)?
    A. Between 0 to 10%
    B. Between 10 to 20%
    C. Between 20 to 30%
    D. Between 30 to 40%