

ROCKY MOUNTAIN CCA SELF-STUDY EXAMINATION

DIRECTIONS

1. Clearly mark an "X" in the brackets next to the best answer to each question. Complete evaluation form and registration form.
2. Tear out this page and place in envelope along with a \$15 check (processing fee) payable to the American Society of Agronomy (or fill out credit card information). Payment in U.S. currency only.
3. Mail self-study exam and fee to: ASA c/o CCA Self-Study Exam, 677 S. Segoe Road, Madison, WI 53711.

A passing exam score (70%) is worth 1.5 Rocky Mountain CEU's in soil and water management.

QUESTIONS

1. Saline seeps most often occur where
 a. Water tables are underlain by an impermeable layer
 b. Water tables are underlain by a permeable layer
 c. Fertilizers accumulate
 d. CBM wells are located
2. Saline soils can be reclaimed by
 a. Adding a Ca^{2+} amendment
 b. Adding a Na^+ amendment
 c. Providing adequate drainage and leaching salts with excess water
 d. Adding a Ca^{2+} amendment and then leaching salts with excess water
3. Of the following crops, which is most tolerant to saline conditions?
 a. Potatoes
 b. Triticale
 c. Lentils
 d. Corn
4. Why isn't lime (CaCO_3) a very good amendment choice for the treatment of sodic soils in many parts of Montana and Wyoming?
 a. Lime is sparse in Montana and Wyoming and it would cost too much
 b. Amendments containing Ca^{2+} are not effective in the reclamation of sodic soils
 c. Many Montana and Wyoming soils are calcareous and already contain high levels of lime
 d. Sodic soils do not occur in Montana and Wyoming
5. The chemistry of CBM water is dominated by
 a. Gypsum (CaSO_4)
 b. Sodium (Na^+) and bicarbonate (HCO_3^-)
 c. Lime (CaCO_3)
 d. Sulfate (SO_4^{2-})
6. Plant growth in saline soils is primarily inhibited by
 a. Poor water uptake due to osmotic stress
 b. Poor soil structure
 c. pH less than 8.5
 d. Na^+ toxicity
7. The EC of a water sample is 3,400 $\mu\text{mhos/cm}$. What is the estimated TDS value of this sample?
 a. 3.4 mg/L
 b. 2,176,000 mg/L
 c. 5,313 mg/L
 d. 2,176 mg/L
8. Which of the following is not a characteristic of sodic soils?
 a. Soil columns with rounded caps
 b. Poor infiltration
 c. Enhanced clay flocculation
 d. Water ponding
9. What would the SAR be for a soil with 45 meq Na^+/L , 32 meq Ca^{2+}/L , and 18 meq Mg^{2+}/L ?
 a. 5
 b. 9
 c. 11
 d. 15

10. What would one expect the effect of applying irrigation water with an SAR of 12 and an EC of 1.2 mmhos/cm be on water infiltration rates?
 a. Slight to moderate increase c. Large increase
 b. Slight to moderate reduction d. Severe reduction
11. If 2 feet of irrigation water is applied via flooding, approximately what percentage of initial salts is removed from the top foot of soil?
 a. 30 c. 70
 b. 50 d. 90
12. If ET = 20 inches and leaching requirement = 0.2, what is the water requirement?
 a. 20 c. 25
 b. 22.5 d. 30
13. A soil has an EC of 5.0 mmhos/cm and a SAR of 15. What would this soil be classified as?
 a. Coarse-textured c. Sodic
 b. Saline d. Saline-sodic
14. What is the approximate EC of a water sample with a TDS of 8,000 mg/L?
 a. 8 mmhos/cm c. 12.5 mmhos/cm
 b. 10.5 mmhos/cm d. 16 mmhos/cm
15. Based on a Montana study, which of the following forages is most likely to produce the greatest yield at EC = 20 mmhos/cm?
 a. 'Jose' tall wheatgrass c. 'Pryor' slender wheatgrass
 b. 'Prairieland' Altai wildrye d. 'Shoshone' beardless wildrye

SELF-STUDY EVALUATION FORM

SOIL AND WATER MODULE #2

		STRONGLY DISAGREE	←————→		STRONGLY AGREE
Information presented will be useful in my daily crop advising activities	1	2		3	4 5
Information was organized and logical	1	2		3	4 5
Graphics/tables were appropriate and enhanced my learning	1	2		3	4 5
I was stimulated to think how to use and apply the information presented.	1	2		3	4 5
The article addressed the stated competency area and performance objective(s)	1	2		3	4 5

What suggestions (general and specific) do you have to improve future modules?

Topics you would like to see addressed in future self-study materials:

SELF-STUDY EXAM REGISTRATION FORM—

FOR ROCKY MOUNTAIN CCA CREDIT

Name: _____

Address: _____

City, State, Zip: _____

CCA Certification #: _____ Credit Card Type and # _____

Expiration Date: _____ Name on Card: _____

A \$2.00 Processing Fee will be added to all credit card charges.

I certify that I alone completed this self-study course and recognize that an ethics violation may revoke my CCA status.

Signature of registrant as it appears on Code of Ethics

Date