

Module 1: Soil Sampling and Laboratory Selection

SELF-STUDY EXAMINATION—ROCKY MOUNTAIN CCA

4449-1 QUIZ

DIRECTIONS

1. Clearly mark an “X” 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 \$10 check (processing fee) payable to the American Society of Agronomy (or fill out credit card information). Payment in U.S. funds 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 Rocky Mountain CEU in **nutrient management**.

QUESTIONS

1. In the example of nutrient variation within a field (Table 1), the soil sample with the highest nitrate-N concentration overestimated the average nitrate-N by approximately:
 a. 30%
 b. 80%
 c. a factor of 2
 d. a factor of 3
2. What is one negative consequence of using soil from only one location that has only 1 lb nitrate-N/ac, when the average nitrate-N amount was actually much higher?
 a. The yield won't be optimized
 b. Too little fertilizer will be applied
 c. Too much fertilizer will be applied
 d. Lab costs will be higher
3. Fields that appear heterogenous based on color, past sampling, and yields, should have _____ (more/less) samples collected than more homogenous fields.
4. List four topographic or soil characteristics that should be used to determine heterogeneity, and hence spacing between sampling points. _____
5. Why is nitrate often sampled up to 3 feet depth, whereas P and K are only sampled to 6 inches?
 a. More nitrate is taken up by crop than other nutrients
 b. There is generally no P or K below 6 inches
 c. Nitrate is more mobile and deep nitrate can therefore be accessed by roots throughout the profile, whereas P and K generally can't move very far.
 d. P and K are rarely, if ever, topdressed.
6. Sampling as close to fertilizer application as possible is highly recommended, yet not always practical. Which of the below is not a good reason to sample well before seeding and application?
 a. There can be significant lag times between submitting a soil to a laboratory and receiving fertilizer recommendations.
 b. The ground may be too wet prior to seeding.
 c. The ground may be frozen prior to seeding.
 d. Available nutrients in the fall are a better indicator of fertility than in the spring.
7. Why should soils collected for available nutrients NOT be oven dried above 120 degrees F?
 a. It will kill microorganisms.
 b. It will evaporate too much water.
 c. It may change the availability of some nutrients.
 d. It breaks down all of the organic matter.

8. If the producer has equipment capable of variable rate fertilizer application, why might you NOT want to composite soils on this producer's fields?
- a. It costs more.
 - b. To allow more fine tuning of application amounts
 - c. It takes too much time.
 - d. Because P and K are less mobile than N
9. Analytical results from the same soil sample submitted to various laboratories:
- a. Will be almost identical between laboratories
 - b. Will not vary with procedure
 - c. Can be highly dependent on the laboratory selected
 - d. Will lead to identical fertilizer recommendations
10. Obtaining Quality Assurance/Quality Control (QA/QC) protocols and results can help one select a good laboratory. What should a good QA/QC plan evaluate?
- a. Precision and accuracy of results
 - b. Laboratory personnel
 - c. Time to complete procedures
 - d. Relative costs of different fertilization philosophies

SELF STUDY EVALUATION FORM: Nutrient Management Module 1

Rating Scale: 1 = Strongly Disagree 5 = 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

Briefly explain any "1" ratings:

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

SELF-STUDY EXAM REGISTRATION FORM-FOR ROCKY MOUNTAIN CCA CREDIT

Name: _____

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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