Module 3: Nítrogen Cycling, Testing, and Fertilizer Recommendations SELF-STUDY EXAMINATION—Rocky Mountain CCA 4449-3 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 \$20 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 2 Rocky Mountain CEU in nutrient management.

QUESTIONS

1.	Why might it be beneficial to a crop to have ammonium rather than nitrate as the major form of available N? [] a. Ammonium makes the leaves greener. [] c. Ammonium is more mobile. [] b. Ammonium is less likely to leach. [] d. Nitrate is toxic to the plant.
2.	How much N would you expect 3 t/ac of timothy to remove, based on Table 2?[] a. 28 lb/ac[] b. 56 lb/ac[] c. 108 lb/ac[] d. 112 lb/ac
3.	The conversion from ammonium to nitrate is known as
4.	The conversion of nitrate to nitrogen gas is known as[] a. N2 fixation[] b. desorption[] c. denitrification[] d. immobilization
5.	The conversion of nitrogen gas to plant available N is known as
6.	The conversion of organic N to available N is known as[] a. N2 fixation[] b. desorption[] c. mineralization[] d. immobilization
7.	The conversion of available N to organic N is known as
8.	Nitrification occurs fastest under which of the following conditions?[] a. Water logged soils, pH 8[] c. Water logged soils, pH 6[] b. Aerobic soils, pH 8[] d. Aerobic soils, pH 6
9.	Denitrification amounts are highest under which of the following conditions?[] a. Consistently aerobic[] c. Oscillating between aerobic, waterlogged[] b. Consistently waterlogged[] d. Semi-arid, tilled soils
10.	What conditions will minimize ammonia volatilization following a urea application?[] a. Warm soils, incorporated[] c. Warm soils, broadcast[] b. Cool soils, incorporated[] d. Cool soils, broadcast
11.	Why is ammonia volatilization generally believed to be low in Montana and Wyoming?[] a. well buffered soils/cool temperatures[] c. urea is generally incorporated[] b. high pH soils/cool temperatures[] d. MAP is main N source in MT and WY
12.	If the soil carbon was 2.0% and total soil nitrogen was 0.1%, how much additional N, at a minimum, would be needed to immediately have N available for plant uptake? [] a. 0.1% [] b. 0.05% [] c. 0.02% [] d. 0%
13.	What happens to available N after applying a high C:N (>30:1) organic material? [] a. It goes up and then down [] c. It drops quickly to near 0, and then increases [] b. It increases gradually [] d. No change
14.	Why might fertilizing legumes with more than approximately 40 lb N/ac not be advantageous?[] a. It inhibits P uptake[] c. It inhibits nitrification[] b. It results in excessive denitrification[] d. It inhibits biological N2 fixation

15.	N fertilization of an a	alfalfa-grass stand will gene	erally favor	(alfalfa or grass).		
16.	[] a. No till and sun	ystems may increase nitra nmer fallow tillage and summer fallow	[] c. Minimum	er's (1993) study? a till and manure application onal tillage and crop rotation		
17. How much NO ₃ -N (in lb/acre) is in a 3 foot soil profile that has 5 ppm NO ₃ -N in the top 6 inches, and 2 ppm NO ₃ from 6-36 inches?						
	[] a. 7	[] b. 20	[] c. 30	[] d. 40		
18.	Using Table 6, how much fertilizer N should be recommended for a soil containing 20 lb NO ₃ -N/acre if spring wheat is grown that has a yield potential of 60 bu/acre?					
	[] a. 120 lb/acre	[] b. 148 lb/acre	[] c. 178 lb/acre	[] d. 198 lb/acre		
19.		ıs ammonia (82-0-0) shoul [] b. 100 lb/acre		izer recommendation is 100 lb N/acre?		
20.	If the producer's goal is to produce 50 bu/acre of winter wheat with 14% protein, how much N should be applied assuming the soil has essentially no residual NO_3 -N?					
	[] a. 118 lb/acre	[] b. 146 lb/acre	[] c. 150 lb/acre	[] d. 160 lb/acre		

SELF STUDY EVALUATION FORM: Nutrient Management Module 3

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:					
Address:					
City, State, Zip:					
CCA Certification #:					
Credit Card #:	Type of Card: Visa Mastercard Discovery Am Express				
Expiration Date: Name	e 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.