

Module 10: Commercial Fertilizers and Amendments

SELF-STUDY EXAMINATION—ROCKY MOUNTAIN CCA

4449-10 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 \$25 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 2.5 Rocky Mountain CEU in **nutrient management**.

QUESTIONS

1. A 150-pound bag of 6-24-24 contains how many pounds of K_2O ?
 a. 12 pounds b. 18 pounds c. 24 pounds d. 36 pounds
2. Of the following fertilizers, which provides the highest analysis for N?
 a. UAN b. Ammonium nitrate c. Urea d. MAP
3. What is the approximate percentage of elemental P (not P_2O_5) in 18-46-0?
 a. 20 b. 46 c. 92 d. 105
4. Ammonium phosphate-sulfate is a carrier of
 a. N, P, and K b. P, K, and S c. S, N, and Zn d. N, P, and S
5. The primary product of N fixation via the Haber-Bosch process is
 a. NH_4^+ b. NO_3^- c. $NH_{3(g)}$ d. $N_{2(g)}$
6. Monoammonium phosphate (MAP) is a
 a. Single-nutrient fertilizer c. Heterogeneous blend
 b. Multiple-nutrient fertilizer d. Sodic soil amendment
7. Compared to larger fertilizer particles, finer particles will generally
 a. React more slowly in the soil c. Provide more nutrient content
 b. React more quickly in the soil d. Provide less nutrient content
8. By which process does Na^+ worsen soil structure and permeability?
 a. Leaching b. Dissolution c. Flocculation d. Dispersion
9. Organic amendments improve the permeability of sodic soils through the process of
 a. Soil aggregation c. Dispersion
 b. Chelation d. Na^+ fixation
10. Which of the following fertilizers is least likely to cause salt burn?
 a. KCl c. MAP
 b. Urea d. AA
11. The application of NH_4^+ -based fertilizers can cause soil pH to
 a. Increase c. Remain the same
 b. Decrease d. Initially increase, then decrease
12. Total P solubility is measured as
 a. Water-soluble P plus citrate-soluble P c. Water-soluble P
 b. Phosphoric acid solubility d. Citrate-soluble P

13. If a liquid fertilizer contains 20% K_2O , it is most likely a
 a. Solution fertilizer c. Low K solubility fertilizer
 b. Suspension fertilizer d. Coated fertilizer
14. Which of the following fertilizers has the highest equivalent acidity?
 a. MAP c. Potassium chloride
 b. Ammonium nitrate d. Urea
15. AA retention is greatest in
 a. Sandy soils b. Dry soils c. Clay soils d. Low pH soils
16. Ammonia volatilization after application of urea can be minimized by
 a. Applying urea with DAP c. Incorporating urea into the soil
 b. Broadcasting urea d. Applying urea on dry, windy days
17. Fertilizer P availability may be increased when applied with a source of
 a. S b. NO_3^- c. K d. NH_4^+
18. Which of the following fertilizer materials typically contain the highest heavy metal concentrations?
 a. K fertilizers b. P fertilizers c. N fertilizers d. S fertilizers
19. Under ARM 4.12.620, what is the maximum allowable As concentration for 18-46-0 fertilizer?
 a. 180 ppm b. 234 ppm c. 460 ppm d. 598 ppm
20. Urease activity is greatest
 a. Below 50° F c. Under dry soil conditions
 b. Between 50° F and 100° F d. Below pH 6.5
21. From information given in the text, should a farmer expect dust control coatings on granular fertilizers to decrease nutrient availability and why?
 a. Yes, nutrients are unable to diffuse through the coating, making them less available
 b. No, nutrients are able to diffuse through the coating, making them available
 c. Yes, a function of dust control coatings is to limit nutrient availability over an extended period
 d. No, dust control coatings are not used on granular fertilizers
22. Salt-affected soils are most often found in areas with
 a. High precipitation (humid) c. Excessive fertilizer use
 b. Low precipitation (arid) d. No-till systems
23. For effective use, it is recommended that micronutrient fertilizers contain at least ___% micronutrient solubility.
 a. 20% b. 50% c. 70% d. 90%
24. RP is treated with acid or heat to improve its
 a. P content solubility c. Granular size
 b. Rate of P volatilization d. Alkalinity effect
25. Agronomically, at the same nutrient rate, placement and timing, crop response to liquid fertilizers compared to solid fertilizers is generally
 a. Greater c. Equal
 b. Less d. Variable

SELF STUDY EVALUATION FORM: Nutrient Management Module 10

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

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

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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