

Module 15: Sustainable Agriculture

ROCKY MOUNTAIN CCA SELF-STUDY EXAMINATION

4449-15 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 \$15 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 1.5 Rocky Mountain CEU in **nutrient management**.

QUESTIONS

1. A soil quality indicator is
 - a. A soil property that is resistant to changes in management and climate
 - b. A soil property that is sensitive to changes in management and climate
 - c. Usually a physical soil property, such as texture
 - d. Useful for deciding which soil test laboratory to use
2. Once certified organic, certification needs to be continued on a(n)
 - a. Annual basis
 - b. Two year basis
 - c. Five year basis
 - d. Ten year basis
3. To maximize the benefits of a green manure while maintaining adequate soil moisture, it is recommended to
 - a. Plow down prior to full bloom
 - b. Plow down after full bloom
 - c. Plow down just before planting the next crop
 - d. Plant a green manure that fixes a lot of N
4. Which of the following is a potential disadvantage of an organic nutrient source compared to a synthetic source?
 - a. Organic sources provide a slower, more continuous release of nutrients
 - b. NO_3^- from an organic source is not as effective as NO_3^- from a fertilizer
 - c. It can be more difficult to determine a nutrient budget with organic sources
 - d. Organic sources are finite and much more costly than synthetic sources
5. According to a Saskatchewan, Canada study, approximately how much fertilizer N needed to be applied to the 3-year fields to obtain a similar spring wheat grain protein than no fertilizer applied to the 25 year fields?
 - a. 60 lb N/ac
 - b. 75 lb N/ac
 - c. 90 lb N/ac
 - d. 105 lb N/ac
6. Which of the following legumes fixes the most N?
 - a. Field pea
 - b. Dry bean
 - c. Lentil
 - d. Faba bean
7. Which of the following practices is not allowed in certified organic livestock production?
 - a. Use of synthetic medications when the animal requires medical attention
 - b. Use of organic feed additives and supplements
 - c. Labeling and selling milk from a cow that has been under organic management for 6 months
 - d. Labeling and selling poultry as organic that has been under organic management since hatching
8. Is RP an effective source of P for organic annual crops in the northern Great Plains?
 - a. Yes, it has high solubility and releases P quickly
 - b. Yes, but only during drought periods
 - c. No, it has low solubility and releases P slowly
 - d. No, it is not considered an organic source of P
9. Nutrient cycling in grazed lands can be improved by
 - a. Grazing animals extensively in one area for an extended period of time
 - b. Allowing only one or two forage species to dominate
 - c. Incorporating diverse forage, including legumes, into the system
 - d. Allowing weeds to enter the system
10. Deep-rooted crops can be beneficial in diverse crop rotations because
 - a. Most deep-rooted crops are legumes and they will contribute N to the soil
 - b. They are able to access nutrient and water resources not accessible to more shallow-rooted crops
 - c. They don't utilize much water
 - d. Residue from deep-rooted crops decomposes quickly

11. To avoid a P deficiency in organic systems, one possible practice may be to
 a. Use a legume-only based system c. Add gypsum
 b. Incorporate a manure source into the soil d. Move towards monoculture cropping
12. Compared to non-legume residues, legume residues typically breakdown more quickly because of their
 a. Higher K content c. Higher P content
 b. Higher N content d. Higher micronutrient content
13. Upon converting to no-till, one should expect soil N levels to
 a. Increase the first 5 years, and then decrease
 b. Decrease the first 5 years, and then increase
 c. Decrease indefinitely
 d. Remain similar to soil N levels under conventional tillage
14. Of the following, which is allowed for use in organic agriculture?
 a. Irradiation c. Biosolids (sewage sludge)
 b. Non-synthetic gypsum d. Urea
15. Chemically, the term "organic" refers to
 a. Compounds containing C c. Compounds that have high C:N ratios
 b. Compounds containing N d. Compounds that have been genetically modified

SELF STUDY EVALUATION FORM: Nutrient Management Module 15

Rating Scale: 1 = Strongly Disagree 5 = Strongly Agree

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|---|---|---|---|---|---|
| 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