

# Module 9: Plant Nutrient Functions and Deficiency and Toxicity Symptoms

## ROCKY MOUNTAIN CCA SELF-STUDY EXAMINATION

4449-9 Quiz

### 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. 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's in nutrient management.

### QUESTIONS

1. A pseudo deficiency
  - a. Follows a nutrient deficiency
  - b. Is more than one deficiency occurring at one time
  - c. Is a deficiency of one nutrient caused by the toxicity of another
  - d. Can be caused by a variety of factors and appears similar to a nutrient deficiency
2. Chlorosis occurs due to a lack of
  - a. Anthocyanin
  - b. Water
  - c. Chlorophyll
  - d. Herbicides
3. A common deficiency symptom of most metal micronutrients is
  - a. Generalized chlorosis
  - b. Death of growing point
  - c. Interveinal chlorosis
  - d. Plants turning dark green
4. Mobile nutrient deficiency symptoms will first appear in
  - a. Plant roots
  - b. Older, lower leaves
  - c. Young, upper leaves
  - d. Flowers
5. Zinc deficiency symptoms typically first appear in
  - a. Older, lower leaves
  - b. Flowers
  - c. Roots
  - d. Middle leaves
6. Using the given key, what element is most likely deficient in a plant with the following symptoms: no death of growing point, interveinal chlorosis on younger leaves, and a sharp distinction between veins and chlorotic tissue?
  - a. Mg
  - b. Mn
  - c. Fe
  - d. Ni
7. Using the given key, what element is most likely deficient in a plant with the following symptoms: older leaves with leaf margins burned, marked chlorotic spotting on leaves, and no interveinal chlorosis?
  - a. Cu
  - b. K
  - c. Fe
  - d. Cl
8. One symptom of P deficiency is
  - a. Purple discoloration
  - b. Interveinal chlorosis
  - c. Water stress
  - d. Mottled, chlorotic spotting
9. A N deficiency commonly results in
  - a. Interveinal chlorosis
  - b. Purplish discoloration
  - c. Generalized chlorosis
  - d. Necrotic spotting
10. White streak in wheat and grey speck in oats are common in crops deficient of
  - a. Mn
  - b. P
  - c. Ca
  - d. Ni
11. Tissue analysis of a plant displaying signs of N deficiency has adequate N levels. Of the following, what other factor may be causing symptoms to occur?
  - a. Hidden hunger
  - b. Disease (pseudo deficiency)
  - c. Excess Mg
  - d. Excess sunlight

12. Which of the following nutrients would you least expect to be deficient in most Montana and Wyoming soils?  
 a. N                                       b. Fe                                       c. Cl                                       d. Ca
13. Macronutrient toxicity in Montana and Wyoming is most often caused by  
 a. Excessive watering                                       c. Over-application  
 b. Abnormally high concentrations in subsoil                                       d. Mine tailings
14. Nitrogen toxicity is characterized by  
 a. Short, stunted plants                                       c. Accelerated maturity  
 b. Dark green leaves                                       d. Interveinal chlorosis
15. Deficiencies of Fe, Mn, and Zn may be induced by an excess of  
 a. N                                       b. P                                       c. Mo                                       d. K

## SELF STUDY EVALUATION FORM: Nutrient Management Module 9

**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

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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