



SEPTEMBER 2015

CCA EXAMINER EXAM

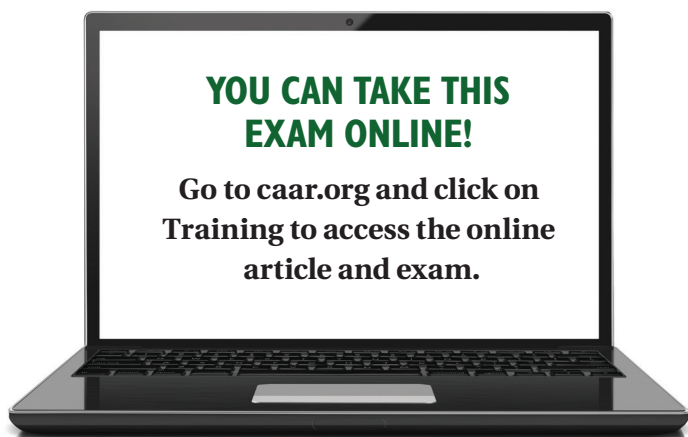
CERTIFIED CROP ADVISER – CONTINUING
EDUCATION SELF-STUDY EXAMINATION



Effects of liquid hog manure on soil available nitrogen status, nitrogen leaching losses and wheat yield on a sandy loam soil of Western Canada

DIRECTIONS

1. Read the self-study exam carefully.
2. Answer the questions to this self-study exam by circling the best answer for each question.
3. Complete the self-study exam registration form.
4. Enclose a payment for processing fees of \$14.95 (Cdn) for CAAR Members, and \$24.95 (Cdn) for non-members, plus GST or HST.
5. Mail your self-study exam and payment to:
The CCA Self-Study Exam
c/o Canadian Association of Agri-Retailers
628-70 Arthur St., Winnipeg, MB R3B 1G7



Click "View Module" to download and read the PDF article. Then take the 10 question test to become eligible for one Soil and Water Management Continuing Education Unit for the Certified Crop Advisor Program. A passing mark of 70% or higher will earn you one CEU in Soil and Water Management.

1. **How much manure is applied in Manitoba each year?**
 - a. 130,000 ha, corresponding to 2.75% of the crop land area
 - b. 120,000 ha, corresponding to 2.5% of the crop land area
 - c. 115,000 ha, corresponding to 2.75% of the crop land area
 - d. 120,000 ha, corresponding to 3.0% of the crop land area
2. **What was one of the objectives of this study?**
 - a. Assess the effects of land application of liquid hog manure on wheat yield and biomass production on coarse sandy soil
 - b. Assess the effects of land application of liquid hog manure on wheat yield and biomass production on clay loam soil
 - c. Assess the effects of land application of liquid hog manure on corn yield and biomass production on clay loam soil
 - d. Assess the effects of land application of liquid hog manure on corn yield and biomass production on coarse sandy soil
3. **Where was this experiment conducted?**
 - a. Selkirk, Man.
 - b. Redvers, Sask.
 - c. Carberry, Man.
 - d. Carman, Man.
4. **What rates of LHM nitrogen treatments were used in this study?**
 - a. 60, 120 and 180 kg N ha⁻¹ of total nitrogen
 - b. 64, 128 and 192 kg N ha⁻¹ of total nitrogen
 - c. 75, 150 and 225 kg N ha⁻¹ of total nitrogen
 - d. 50, 100 and 150 kg N ha⁻¹ of total nitrogen

CCA EXAMINER EXAM

CERTIFIED CROP ADVISER – CONTINUING EDUCATION SELF-STUDY EXAMINATION

5. In 2004 what was the percentage grain yield for each nitrogen rate?
- Grain yield was 22, 36 and 52% greater
 - Grain yield was 22, 32 and 52% greater
 - Grain yield was 22, 32 and 56% greater
 - Grain yield was 24, 32 and 54% greater
6. What are the essential plant nutrients that are found in manure that can contribute to the yield advantage found in the manure amended products?
- Inorganic N, Ca, P, K, Mg, Na, and S
 - Inorganic N, P, K, Mg, Na, and S
 - Inorganic N, P, K, Mg, Na
 - Inorganic N, P, K, Mg, Mn, Na
7. In addition to the amount of applied N, what factors may affect leaching losses of NO_3^- ?
- Soil type, crop species
 - Precipitation
 - Precipitation, soil type, crop species
 - Precipitation, soil type
8. What happened as the rate of manure N application increased with regard to soil NO_3^- -N concentration and residual N?
- The rate increased with the highest increase recorded in the high manure N rate plots
 - The rate decreased slightly
 - The rate increased with the highest increase recorded in the intermediate manure N rate plots
 - The rate increased with the highest increase recorded in the low manure N rate plots
9. When precipitation was below normal in this trial, what was the outcome for nitrogen leaching?
- No leachate and trace of leachate was collected from the lysimeters and water
 - Leachate was obtained from almost all lysimeters and water in the spring only
 - Leachate was obtained from almost all lysimeters and water in the spring and summer only
 - Leachate was obtained from almost all lysimeters and water in the spring, summer, and fall
10. According to the study, what types of crops are suggested to improve the nutrient retention capacity of coarse sandy soils?
- Annual crops
 - Perennial crops
 - Perennial crops and slow release fertilizers or compost
 - Slow release fertilizers

CCA EXAMINER EXAM

CERTIFIED CROP ADVISER – CONTINUING EDUCATION SELF-STUDY EXAMINATION

SELF STUDY EXAM REGISTRATION FORM:

(Please note: You must have your CCA Certification number on the form in order to be eligible for the CEU.)

CAAR Member Non-Member

Member Company: _____ Member Location (Town, Prov.): _____

Name: _____ Company: _____

Address: _____ City: _____ Province: _____ Postal Code: _____

CCA Certification #: _____

Payment Option: Cheque enclosed (Made payable to the Canadian Association of Agri-Retailers) VISA MasterCard

Credit Card #: _____ Expiration Date: _____

Name on Card: _____

I approve payment by credit card and certify that I alone completed this self-study course, recognizing that an ethics violation may revoke my CCA status.

Signature: _____

EXAM EVALUATION FORM (PLEASE TAKE A MOMENT TO PROVIDE US WITH SOME FEEDBACK ON THIS EXAM):

Rating Scale: 1 = Poor 5 = Excellent

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
This article addressed the stated competency area and performance objective(s).	1	2	3	4	5

Topics I would like to see addressed in future materials: _____

