Soils Home Study Course

An Educational Program offered by University of Nebraska Cooperative Extension
with support from Nebraska Fertilizer & Ag-Chemical Institute, Inc.

TEN Soil Fertility CEUs for CCAs - Approved As: NE30158
This Home Study Course Counts As A CCA Course, Not Self-Study CEUs!

(Tests must be successfully passed for CCA CEU Credits)

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x The Soils Home Study Course will provide the information you need to:

- Better understand how soil fertility affects crop production.
- Take more accurate soil samples.
- Save money by applying nutrients when it's most cost effective & they are least apt to be lost.
- Understand why recommendations from different labs vary and how to select the best recommendation for your management plan.
- Select the best fertilizer suited for your needs.

x Meets the needs of farmers, crop consultants, fertilizer dealers, farm managers & other persons making management decisions regarding soils & fertilizer use.

x This course addresses nitrogen management, soil pH, phosphorus, potassium, micro-nutrients, soil testing, fertilizer materials, & fertilizer recommendations.

— Soils Home Study Course Order Form —

_____ # of Soils Home Study Courses @ $85.00 Each = $_____
Add Appropriate Sales Tax for Nebraska Residents (5.5% - 7%) $_____
Add $3.95 Postage = $_____
TOTAL AMOUNT ENCLOSED = $_____

NAME:_____ SSN:_____

COMPANY:_____

MAILING ADDRESS:_____

CITY, STATE, ZIP: _____ COUNTY: _____

PHONE: _____ FAX: _____

Make your check payable to: **NEBRASKA AGRI-BUSINESS ASSOCIATION, INC.**
1335 H St., Suite 100
Lincoln, NE 68508-3784
Phone: (402) 476-1528 ● Fax: (402) 476-1259
E-mail: info@na-ba.com ● Web: www.na-ba.com

PURPOSE OF THE COURSE

Soils Home Study Course is an introductory course designed to meet the needs of agricultural producers, crop consultants, fertilizer dealers, and other agribusiness people in making management decisions regarding soils and fertilizer. **The course can help prepare participants for the Certified Crop Advisor (CCA) examination, introduce basic soil science for those working with farms or land use, and benefit new fertilizer employees.**

Lessons in this course will address such areas as nitrogen management, soil pH, phosphorus and potassium, micro-nutrients, soil testing, and fertilization recommendation concepts. You will be able to participate in this educational program without a large commitment of time away from the office or home.

You must answer the questions on the ten lesson quizzes successfully to qualify for CCA CEU Credits.

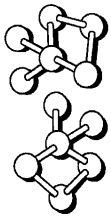
ENROLLMENT PROCEDURES

There are no prerequisites for enrollment in this course. Just complete the attached registration form & return it with your payment. The $85.00 fee will include the course booklet which includes ten lessons along with exercises for you to complete.

Just return the completed quizzes or exercises to the participating county extension office listed with the test. Each person completing the lessons & quizzes will receive a certificate of completion from the University of Nebraska.

LESSONS IN SOILS HOME STUDY COURSE

1. **The Origin and Development of Soils:** In this lesson, you will gain an understanding of the five soil forming factors and will be able to describe how each influences soil development. You will learn to identify common parent materials, determine the age of a soil, identify the types of native vegetation associated with different soils in Nebraska and define soil horizons.
2. **Physical Properties of Soil and Soil Water:** This lesson will help you understand the major components of the physical properties of soil. You will learn such terms as texture, aggregation, soil structure, bulk density, and porosity as it relates to soils. You will learn how soil holds and transmits water and cultural practices that enhance or degrade physical properties of the soil.
3. **Soil Organic Matter:** In this lesson, you will learn such terms as organic, soil organic matter, nutrient, decomposition, humus, compost, and soil structure. In addition, you will be able to predict the effect of land uses on soil organic matter including the effects of different types of vegetation.
4. **Soil pH:** Soil pH is defined and its implications for crop production are described in this lesson. How are soil pH and buffer pH determined? How are these assessments used in lime recommendations? The factors that influence pH variations in soils, the chemistry involved in changing the pH of a soil, and the benefits associated with liming acid soils will be discussed.
5. **Nitrogen as a Nutrient:** In this lesson, you will be able to describe the forms of nitrogen found in the soil. The nitrogen cycle and how nitrogen is lost in the environment will be thoroughly discussed. Forms of nitrogen utilized by the plant and the concept of nitrogen credits for such factors as legumes, manure, residual soil nitrogen, and irrigation water will be introduced.
6. **Phosphorus and Potassium in the Soil:** This lesson explains the importance of phosphorus fixation and describes methods for applying phosphorus and the advantages (and disadvantages) of each. It also describes the three forms of potassium and how form determines availability of potassium to plants.
7. **Soil and Plant Considerations for Calcium, Magnesium, Sulfur, Zinc, and other Micro-Nutrients:** The 16 essential elements for plant growth and the relative quantities of each needed by plants to grow normally will be discussed in this lesson. You will learn to identify the source of specific nutrients in the soil and how to identify specific fertilizer compounds needed in Nebraska.
8. **Characteristics of Fertilizer Materials:** The various characteristics of fertilizer materials being sold on the market today will be discussed. You will learn to identify some of the consequences of using each type of fertilizer material and how that material was developed and manufactured.



9. **Fundamentals of Soil Testing:** The major emphasis in this lesson is soil testing and understanding the procedures needed to take a representative soil sample. You will understand the term variability, how it affects soil tests, and how a soil test is developed.
10. **The Scientific Basis for Making Fertilizer Recommendations:** In this lesson, you will gain an understanding of the history of fertilizer use and the ideas behind fertilizer recommendations. Three major crop nutrition concepts will be discussed in terms of their benefits and disadvantages.