

**Certified Crop Adviser
Continuing Education Standards**

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Standards Document for Continuing Education

Educational Areas

Foreward

To become a Certified Crop Adviser (CCA), one must pass an International exam and a local board exam, have 2 to 4 years of advising experience with farmer/grower clients, be supported by letters of recommendation, and sign a code of ethics.

The minimum competency exams stress knowledge and skills in: Nutrient Management, Soil and Water Management, Pest Management, and Crop Management. The Performance Objectives documents outline competencies and objectives for these subject matter areas. After demonstrating minimum competence by passing the exams the Certified Crop Adviser maintains certification status by attaining a minimum number of Continuing Education Units (CEUs) during each two-year certification cycle.

This document has been developed to 1) provide standards for continuing education program development and 2) to allow CCAs to be more involved by defining continuing education direction. This document achieves the former by defining the **educational areas**, their **scope** and **subject matter** for course development by vendors producing continuing education programs. This document achieves the latter by engaging the entire CCA structure and CCAs in particular to define subject matter that best represent new knowledge and learning needs among CCAs.

The Performance Objectives documents defined the minimum skills and knowledge necessary to become a CCA. This Continuing Education document defines the subject matter and "cutting edge" learning needs of agricultural professionals. These are the additional educational areas that CCAs will find useful in building on their competencies demonstrated when they passed the certification exams. This document will guide educators in program development, and CCAs in deciding which programs are appropriate for their continuing education needs. The document will also be used to determine if continuing education programs are appropriate for awarding CEUs.

Every educational program or self-study course submitted for CEU credit- should use this document to reference the **educational area**, **subject matter**, and, when available, the **area of expertise** that best defines the scope of the continuing education program.

Introduction:

The continuing education program of the Certified Crop Adviser program provides learning opportunities for CCAs to improve their knowledge and skills as crop advisers. Educational programs can be offered by individuals with appropriate credentials, and may be submitted for CEU review and course assignment to either local or the International CCA boards.

In order to maintain certification status, a CCA, must complete at least 40 CEUs in a two-year cycle with a minimum of 5 CEUs in each of the 4 categories of Nutrient Management, Soil and Water Management, Pest Management, and Crop Management. In addition, up to 5 CEUs of the 40 CEU total maybe attained in the Professional Development category although this category has no minimum credit requirement.

A CCA is bound by the CCA Code of Ethics. The Code of Ethics follows this page as a point of information.

CODE OF ETHICS

All individuals certified under the ICCA program must subscribe to the ICCA Code of Ethics. The ICCA Standards & Ethics Committee periodically reviews the current Code of Ethics.

Article I. Preamble

1. The privilege of professional practice imposes obligations of responsibility as well as professional knowledge. The ICCA program certifies the credentials of individuals through state/provincial certification boards.
2. The ICCA program will award the title of Certified to individuals who meet the experience, testing requirements and the continuing education requirements of the International Certified Crop Adviser (ICCA) Program. The ICCA program does not require college level education. A college education will substitute for part of the ICCA work experience requirement as provided for in the ICCA guidelines.
3. Certified Crop Advisers (hereafter called Registrants), at the request of a client or employer, must disclose the information used to gain certification. Registrants who knowingly misrepresent their credentials will face disciplinary action.

Article II. Relation of Professional to the Public

1. An Applicant shall avoid and discourage sensational, exaggerated, or unwarranted statements that might induce participation in unsound enterprises.
2. An Applicant shall not give professional opinion, or make recommendation, without being as thoroughly informed as might reasonably be expected considering the purpose for which the opinion or recommendation is desired; and the degree of completeness of information upon which it is based should be clear.
3. An Applicant shall not issue a false statement or false information even if directed to do so by employer or client.

Article III. Relation of Professional to Employer and Client

1. An Applicant shall protect, to the fullest extent possible, the interest of the employer or client insofar as such interest is consistent with the law and professional obligations and ethics.
2. An Applicant who finds that obligations to the employer or client conflict with their professional obligation or ethics should work to have such objectionable conditions corrected.
3. An Applicant shall not use, directly or indirectly, employer or client's information in any way that would violate their confidentiality.
4. An Applicant shall not divulge information given in confidence.
5. An Applicant retained by one client shall not accept with the client's written consent, an engagement by another if the interests of the two are in any matter conflicting.
6. An Applicant who has made an investigation for any employer or client shall not seek to profit economically from the information gained, unless written permission to do so is granted, or until it is clear that there can no longer be a conflict of interest with the original employer or client.
7. An Applicant shall engage, or advise employer or client to engage and cooperate with other experts and specialists.
8. An Applicant protects the interest of a client by recommending only products or services that are in the best interest of the client and public.
9. An Applicant protects his/her credibility by disclosing to clients how he/she will be compensated for providing recommendations to the client.

Article IV. Relation of Professionals to Each Other

1. An Applicant shall not falsely or maliciously attempt to injure the reputation of another.
2. An Applicant shall freely give credit for work done by others, to who the credit is due, and shall refrain from plagiarism of oral and written communications and shall not knowingly accept credit rightfully due another person.
3. An Applicant shall not use the advantage of public employment (e.g. university, government) to compete unfairly with other certified professions.
4. An Applicant shall endeavor to cooperate with others in the profession and encourage the ethical dissemination of technical knowledge.

Article V. Duty to the Profession

1. An Applicant shall aid in exclusion from certification, those who have not followed this Code of Ethics or who do not have the required education and experience.
2. An Applicant shall uphold this Code of Ethics by precept and example and encourage, by counsel and advice, other Registrants to do the same.
3. An Applicant having positive knowledge of deviation from this Code by another Registrant shall bring such deviation to the attention of the Registrant's local board.

Approved by International CCA Board of Directors/ARCPACS/ASA
07/97

I have read the Certified Crop Adviser Code of Ethics and agree to adhere to this code.

Print Name _____

Signature _____ Date _____

Educational Area: Nutrient Management

Scope:

Nutrient management is an integral part of all crop production systems. It is important for the CCA to make recommendations that meet crop nutrient requirements, compliment the grower's management practices, and minimize adverse effects on the environment.

Nutrient Management Subject Matter Areas

1. Soil fertility

Areas of expertise

- a. Soil sampling procedures
- b. Soil testing components, uses, and applications to cropping systems
- c. Analysis, interpretation and uses of soil testing data
- d. Designing, conducting, and interpreting results of experimental trials
- e. Soil pH management in cropping systems
- f. Nutrient management in cropping systems
- g. Role and fate of nonessential elements in cropping systems

2. Plant nutrition

Areas of expertise

- a. Nutrient uptake from soil, air, and water
- b. Nutrient mobility within plants
- c. Evaluating crop nutrient status
- d. Nutrient deficiencies, sufficiency levels, luxury consumption, and toxicities
- e. Tissue sampling and testing
- f. Nutrient management planning
- g. Nutrient management for environmental concerns
- h. Using environmental assessment tools in nutrient management

3. Integrating nutrient management between crop and animal systems

4. Compliance with government regulations and programs

Areas of Expertise

- a. State-based water quality control regulations
- b. TMDL-mandated orders
- c. Environmental quality improvement program
- d. Biosolids pre-application monitoring reports
- e. Comprehensive nutrient management plans
- f. Conservation reserve program

5. Economic considerations for nutrient management planning

Areas of Expertise

- a. Use, testing, and availability of livestock manures

6. Security and safety in sales, storage and handling of nutrients and pesticides

7. Nutrient sources

Areas of Expertise

- a. Commercial products
- b. Organic materials, biosolids
- c. Industrial byproducts
- d. Calibration

8. Nutrient application and placement systems

Areas of Expertise

- a. Variable-rate technology
- b. Uniform-rate technology
- c. Field application methods
- d. Fertigation
- e. Advances in equipment technology and calibration methods

9. Nutrient management in organic production

Areas of Expertise

- a. Plant nutrient-pest interactions in organic systems
- b. Plant nutrient-pesticide interactions in organic systems

**Educational Area:
Soil and Water Management**

Scope:

Soil and water management is an integral part of nutrient management, pest management and crop management. Soil properties, site characteristics, and soil and water movement affect nutrients and pesticides in the environment. Also, they influence crop management and tillage practices needed for economic crop production and environmental protection. The CCA should be able to examine soils in the field, and with the aid of additional information, make effective crop management decisions. With the additional aid of laboratory tests, the CCA should be able to diagnose soil and water problems observed in the field.

Soil and Water Management Subject Matter Areas:

- 1. Effect of physical, chemical and biological properties of soils on management practices**
- 2. Maintaining soil and water quality in the environment**
Areas of Expertise
 - a. Soil biological considerations
 - b. Soil erosion control
 - c. Water, nutrient, and chemical movement off-site
 - d. Fate of potential pollutants
 - e. Effects of tillage on soil and water quality
 - f. Phosphorus site index
- 3. Characterization of soils and landscapes**
Areas of Expertise
 - a. Obtaining and using information sources to characterize soils and landscapes
 - b. Applications of soil and landscape information to management systems
- 4. State and federal air and water-quality standards and regulations**
- 5. Plant-water relations**
- 6. Land-use capability and soil productivity**
- 7. Water management**
Areas of Expertise
 - a. Aspects of irrigation management
 - b. Drainage types, construction, and installations
 - c. Seepage
 - d. Methods of moisture conservation
- 8. Soil degradation causes and remedies**

Educational Area: Pest Management

Scope:

Pest Management is an ever-evolving science. New pesticides and other pest management technologies are discovered, developed, and registered annually. New pests are imported to North America, requiring new control methods that are both cost effective and environmentally friendly. The CCA needs to stay current with emerging control measures or practices, new pesticide products, and current state and federal regulations for their proper use.

Pest Management Subject Matter Areas:

1. Integrated pest management

Areas of Expertise

- a. Pesticide modes of action and pesticide interactions
- b. Proper use of crop protection products and label updates
- c. Emerging technologies for pest identification, survey, and damage estimates.
- d. Novel pest control agents and strategies
- e. Evaluating the reliability of pest management information sources, decision making tools, and internet resources
- f. Using crop, pesticide, and environmental information to make pesticide recommendations
- g. Biology of pests
- h. Economics of pest control strategies
- i. Managing pest resistance
- j. Refugia management for biotechnology crops
- k. Management of new and emerging pests or changes in pest biology
- l. Segregation of herbicide-tolerant or insect-resistant crops
- m. Trap crops

2. Pest management decision-making skills

Areas of Expertise

- a. Applying research and principles of modeling and forecasting to pest management
- b. Evaluating climate and management factors in pest control systems
- c. Evaluating non-traditional pest control methods
- d. In-field evaluations and management of cropping and pest management systems

3. Application technologies in pest management

Areas of Expertise

- a. Calibration, application, and advances in application technologies
- b. Precision agriculture technologies

4. Pest management in non-traditional crop advising

Areas of Expertise

- a. Using grazing and pasture/range management for pasture/range pest control
- b. Wildlife habitat management
- c. Home pesticide use
- d. Turf and ornamental IPM
- e. Pest management strategies and options to meet organic standards

5. Safety and environmental aspects of crop protectants

Areas of Expertise

- a. Environmental toxicology and signs and symptoms of exposure to toxins
- b. Pesticide use and food safety concerns
- c. Biosecurity in the agro-chemical industry
- d. Pesticide waste remediation
- e. Pesticide Safety, proper use, and label restrictions
- f. Effects of pesticide misuse on crops, wildlife and other non-target species or areas
- g. Wildlife as pests and methods of exclusion and control

Educational Area: Crop Management

Scope:

From new biotechnology applications to new organic standards, Crop Advisers have a significant opportunity to lead the industry in proper adoption of new products and production systems. CCAs need to have a thorough understanding of crops and cropping systems in order to provide sound management advice.

Crop Management Subject Matter Areas:

1. Crop biology, biotechnology, physiology, and morphology

Areas of Expertise

- a. Uses of genomics, biotechnology, and transgenic technology in crop improvement
- b. Crop physiology in relation to crop management decision making
- c. Climate effects on production agriculture
- d. Effects of plant stresses on crop management and productivity
- e. Weather effects on crop management

2. Innovative and emerging crop management tools

Areas of Expertise

- a. Innovations in cropping systems management
- b. New technologies in sustainable agriculture
- c. Techniques to enhance seed germination and emergence
- d. Management techniques for producing identity preserved crops
- e. Use of precision ag technology
- f. Advances in harvest and storage technology,
- g. Using chemicals to enhance crop growth, harvest, and storage conditions

3. Crop management decision-making skills

Areas of Expertise

- a. Integrating soil, climate, and crop data in crop management systems
- b. Evaluating new or novel cropping systems

4. Alternative cropping systems

Areas of Expertise

- a. Management techniques for row-crop, grain, forage, turf, organic, vegetable, and horticulture production systems
- b. Producing crops for energy, fiber, or specifically engineered uses
- c. Agro-forestry production techniques
- d. Management techniques for pasture or range management systems
- e. Greenhouse seedling and transplanting technology
- f. Emerging technologies in alternative production systems

5. Crop production equipment and use

Areas of Expertise

- a. Equipment innovations and modifications in crop production, harvesting, and storage
- b. Effects of tillage systems on soil erosion
- c. Precision ag equipment

6. Economic considerations

Areas of Expertise

- a. Government programs and their effects on cropping decisions
- b. Crop budgeting
- c. Crop insurance programs
- d. Crop marketing and contracting plans
- e. Managing production risk
- f. Post-harvest crop quality, including grain, feed, and forage analysis

**Educational Area:
Professional Development**

Scope:

The pace of change and innovation in agriculture today is unprecedented and the demands being placed on CCAs have expanded to meet these challenges. It is brought on, in part, by growing environmental concerns, consumer demands, international trade liberalizations, and the use of science and communication technologies that were unthinkable a decade ago. In recognition of the multifaceted services required by CCAs, professional development is an important component of being an effective professional CCA.

Professional Development Subject Matter:

- 1. Applications of ethics to crop advising**
- 2. Crop advising business and legal issues**
Areas of Expertise
 - a. Employment law
 - b. Errors and omissions insurance
 - c. Liability issues
- 3. Technology applications to crop advising**
Areas of Expertise
 - a. Applications of computer technology and programs to crop advising
 - b. Using expert systems
- 4. Business applications**
Areas of Expertise
 - a. Business planning, budgeting, and financial analysis
 - b. Land, labor, and capital management
 - c. Developing marketing plans for crop advising products and services
 - d. Time management
- 5. Economic issues in agriculture**
Areas of Expertise
 - a. Micro- and macro-economic topics
 - b. Global supply and demand forecasts
 - c. International trade policies
 - d. Commodity marketing and trade
- 6. Communications/leadership/interpersonal skills**
Areas of Expertise
 - a. Business and technical writing
 - b. Interpersonal skills and conflict resolution
 - c. Leadership skills, meeting facilitation
 - d. Diversity training
 - e. Presentation skills, learning styles, creative training techniques
 - f. Media training
 - g. Developing sales and marketing techniques