

Certified Crop Science Consultant (CCSC) Continuing Education Standards

Standards Document for Continuing Education Units (CEUs)

Introduction

To become a Certified Crop Science Consultant (CCSC), participants in the program must review and understand the contents of ten (10) study modules, complete and successfully pass three (3) assignments and one (1) case study and sign a code of ethics. The areas of study include the following;

- Pesticides and their Regulation
- Product Labels and Use
- Integrated Pest Management
- Application Technology
- Human Health
- Pesticides and the Environment
- Safety and Emergency Response
- Biotechnology
- Pest Management in Urban Areas
- Stewardship and Sustainability

Initial certification is valid for a two year period, at which time the Certified Crop Science Consultant would begin the CCSC Continuing Education process. During this time participants must accumulate 40 Continuing Education Units (CEUs) with a minimum of five (5) CEUs from five (5) educational areas. The CEUs can be obtained through a variety of learning programs, but the subject matter area must fall under one of the twelve (12) educational areas outlined below and must be approved by the CCSC Continuing Education Program Committee in order to qualify.

- Pesticides and their Regulation
- Product Labels and Use
- Integrated Pest Management
- Application Technology
- Human Health
- Pesticides and the Environment
- Safety and Emergency Response
- Biotechnology
- Pest Management in Urban Areas
- Stewardship and Sustainability
- Professional Development
- Crop Management - Agronomy

This document has been developed to provide the standards for continuing education units by defining the relevant **subject matter areas** within each of twelve (12) **educational areas**. This document will guide educators in program development, and CCSC's 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 and subject matter areas**.

Organizers of qualifying events and activities can apply for CEU's through the department of Continuing and Distance Education (CCDE), University of Saskatchewan. CCSC confirmed attendees of qualifying events are then automatically credited for those CEU's. CCSC's can view their progress through an interactive online CEU tracking database.

The Continuing Education program provides learning opportunities for CCSC's to improve their skills and knowledge in order to keep up to date with the latest information and technology thereby allowing them to perform their job more effectively. Educational programs can be offered by individuals or organizations with appropriate credentials, and must be submitted for CEU review by the CCSC Continuing Education Program Committee.

Educational Areas

Educational Area 1: Pesticides and their Regulation

Pesticides and their Regulation Subject Matter Areas

- Risks and benefits of pesticides
- Pesticide classification
- Formulations
- Adjuvants
- Pest Control Products Act
- PMRA
- Data requirements
- Programs including special reviews, re-evaluation, minor use, research permits
- Other federal and provincial acts

Educational Area 2: Product Labels and Use

Product Labels and Use Subject Matter Areas

- The product label
- Hazards and warning symbols
- Other labels including supplemental, emergency use, research permit
- Allowable label claims and statements
- Tank mixtures and sequential applications
- Buffer zones
- MSDS

Educational Area 3: Integrated Pest Management

Integrated Pest Management Subject Matter Areas

- Definition, objectives and components of IPM
- Pest management options
- Pest identification and monitoring
- Field scouting
- Pest biology and life cycles
- Factors affecting survival, reproduction and spread of pests
- Losses due to pests and economic thresholds
- Factors affecting pesticide efficacy
- Pesticide resistance

Educational Area 4: Application Technology

Application Technology Subject Matter Areas

- Seed treatments
- Spraying methods
- Spray equipment components
- Nozzles
- Maximizing spray efficacy
- Calibration
- Adjuvants
- Spray drift
- Tank cleanout

Educational Areas (continued)

Educational Area 5: Human Health

Human Health Subject Matter Areas

- The concept of risk
- Pesticide exposure
- Toxicity
- Dose response
- Pesticide poisoning
- Pesticide metabolism
- Pesticide residues, establishing maximum residue limits
- Maximum pesticide residue limits in Canada and globally
- Factors affecting pesticide residues
- Human health issues
- Food Quality Protection Act
- Mandatory incident reporting

Educational Area 6: Pesticides and the Environment

Pesticides and the Environment Subject Matter Areas

- Environmental risk
- Pesticides in the environment
- Pesticides in soil, water and air
- Degradation of pesticides
- Bioconcentration and biomagnification
- Non-target effects of pesticides
- Pesticide impact prediction models
- Mandatory incident reporting
- Species at Risk

Educational Area 7: Safety and Emergency Response

Safety and Emergency Response Subject Matter Areas

- Health and safety on the job
- Protective clothing and equipment
- Special use precautions
- Pesticide transportation and storage
- Emergency response/procedures
- Pesticide spills, pesticide fires
- First aid treatment

Educational Area 8: Biotechnology

Biotechnology Subject Matter Areas

- Methods for developing plants with novel traits (PNTs)
- Benefits and risks of PNTs for pest management
- PNT regulations including labeling requirements
- Adventitious presence
- Future applications of biotechnology

Educational Area 9: Pest Management in Urban Areas

Pest Management in Urban Subject Matter Areas

- Life cycle stewardship approach to urban pest management
- Components of urban pest management
- IPM in the urban environment
- Regulation of urban pest management products
- Invasive species in urban environments
- Benefits of urban pest management

Educational Area 10: Stewardship and Sustainability

Stewardship and Sustainability Subject Matter Areas

- Defining stewardship
- Manufacturing, warehousing and marketing code standards
- Training and certification
- Container recycling, obsolete product management
- Sustainability
- Best management practices
- Integrated crop and pest management
- CropLife sanctioned events i.e. obsolete pesticide collection, public presentations
- Other stewardship events

Educational Area 11: Professional Development

Professional Development Subject Matter Areas

- Interpersonal skills (leadership, selling, communication, presentation, organizational, time management, consensus building)
- Business skills (selling, marketing, markets, financial, negotiation)

Note: The following CCA approved Educational Area falls under the CCSC Professional Development area.

Educational Area: Professional Development

Professional Development Subject Matter:

1. Applications of ethics to crop advising
2. Crop advising business and legal issues
3. Technology applications to crop advising
4. Business applications
5. Economic issues in agriculture
6. Communications/leadership/interpersonal skills

Educational Areas (continued)

Educational Area 12: Crop Management - Agronomy

Crop Management – Agronomy Subject Matter Areas

Note: The following CCA approved Educational Areas fall under the CCSC Crop Management – Agronomy educational area.

Educational Area: Nutrient Management

Nutrient Management Subject Matter Areas

1. Soil fertility
2. Plant nutrition
3. Integrating nutrient management between crop and animal systems
4. Compliance with government regulations and programs
5. Economic considerations for nutrient management planning
6. Security and safety in sales, storage and handling of nutrients and pesticides
7. Nutrient sources
8. Nutrient application and placement systems
9. Nutrient management in organic production

Educational Area: Soil and Water Management

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
3. Characterization of soils and landscapes
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
8. Soil degradation causes and remedies

Educational Area: Crop Management

Crop Management Subject Matter Areas:

1. Crop biology, biotechnology, physiology, and morphology
2. Innovative and emerging crop management tools
3. Crop management decision-making skills
4. Alternative cropping systems
5. Crop production equipment and use
6. Economic considerations