

APPLYING COMPUTER TECHNOLOGY IN WEED SCIENCE EXTENSION EDUCATION. Kelly J. Goedde, Thomas T. Bauman, and Merrill A. Ross, Graduate Research Assistant, Professor, and Professor, Department of Botany and Plant Pathology, Stephen C. Weller, Professor, Department of Horticulture and Landscape Architecture, Gregory L. Willoughby, Director of Crop Diagnostic Training and Research Center, Department of Agronomy, Purdue University, West Lafayette, IN 47906, and Case R. Medlin, Assistant Professor, Department of Plant and Soil Sciences, Oklahoma State University, Stillwater, OK 74078.

The American Society of Agronomy (ASA) with assistance from agribusiness retailers, dealers, manufacturers, and Cooperative Extension personnel created a qualification standard for professionals who serve as consultants to farmers and other agriculture clientele [i.e. the Certified Crop Advisor (CCA) program]. To become a CCA, agricultural professionals must first pass a rigorous exam testing their knowledge in four areas; soil fertility, soil and water management, integrated pest management (IPM), and crop management. The program also requires CCAs to maintain their qualification by earning Continuing Educational Units (CEUs) in one of four competency areas. In each of the four areas one must earn ten CEUs every two years in order to maintain certification.

Purdue is creating online modules to assist people in-training for the exam and for currently certified CCAs to earn CEUs. Much of the material will also be available online as reference material for the public. Offering online modules will help the CCA program achieve its mission of improving environmental stewardship within the agriculture sector. The weed science modules will include a seed database for identification based on distinguishing characteristics or morphology (size, color, shape, or special characteristics). Computer rendered drawings will illustrate seed anatomy and aid in the selecting the criteria needed to perform a search. By selecting criteria of a seed, one will narrow the database to a few records. On-line help images and selection criteria will assist in problem solving by narrowing response possibilities from over 200 weed species currently housed in database. The ultimate goal will be to simply narrow the search so the user will make the final diagnosis from the resulting possibilities.

Herbicide mode of action modules will be available as educational tools and informational resources for agricultural professionals studying for the exam. Technical and non-technical descriptions will be used to educate a wide range of readers about various herbicide families mode of action of the herbicide family. Non-technical descriptions will explain the symptomology of a mode of action and where is the herbicide's site of action. Technical descriptions of each mode of action will have more detailed explanations of the biochemical pathways affected and mechanisms that cause plant death. Symptomology images and time-lapse videos of each herbicide family will also illustrate details of each mode of action. Non-technical summaries will be available online for unrestricted use while certain technical information will be accessible only to CCAs wishing to earn CEUs.