

# COMPUTER-VERIFIED TRAINING TUTORIALS FOR URBAN PEST CONTROL TRAINING

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**Abstract**—Participation at approved training seminars incurs costs and limits work availability for urban pest control company owners, supervisors, and service technicians. However, the continued need for training to properly control pests, and to acquire or renew a license forces pest control operators to commit resources to training seminars.

The National Pest Control Association (NPCA) provided the authors with funding to develop computer-verified tutorials on termites, fleas, and cockroaches. In addition, the authors developed software tutorials on many aspects of urban pest management which the University of Florida licensed to a pest control training company to distribute on a national and international basis.

These programs make extensive use of graphics and VGA color photographs to teach the biology, ecology, and control of the urban pests, and pesticide labels. Pest control operators and other individuals interested in obtaining verification of training can also use test verification options built into the programs. These options provide the name of the test, the name of the student, the date the test was taken, and whether the student passed or failed.

The state of Florida now allows pest control operators to earn Certified Education Units (CEUs) for recertification using some of these programs. The NPCA hopes that their programs will be the beginning of a set of nationally accepted computer-verified tutorials that state and federal agencies will accept as proof for training and recertification.

These programs may be used individually or in a classroom setting. Pest control operators can use the program as a simple tutorial and as a method to earn CEUs. Final scores can be displayed, printed out, or saved to a computer file.

These programs have also demonstrated their worth in basic entomology courses taught at the University of Florida. Students receiving a portion of their training through these interactive programs have provided favorable feedback to instructors. These programs are made available to students on individual and networked PCs across campus, and on the World Wide Web.

## INTRODUCTION

Due to a high rate of personnel turnover, the urban pest control industry needs continuous professional training. The fact that this industry also applies regulated materials in home, schools, restaurants, stores, and other human and animal living areas just increases the need for training.

Most training is accomplished through seminars given by company or university personnel. While such training can be highly professional, it is not consistent even at state, let alone at national, levels.

Self-study manuals and videos are convenient to PCOs. The use of these training materials can be scheduled during work or at home. However, there is often little incentive to apply the self-discipline necessary to retain even short-term mastery of concepts and techniques taught using home study manuals or videos. In addition, these training programs often fail to provide the required verification for state and national regulatory agencies.

A consistent, professional training mechanism across all levels of the urban pest control industry is required to satisfy government regulations and public concerns about pesticide applications.

## COOPERATION WITH SERVICE PROVIDERS

The National Pest Control Association (NPCA) provided the authors with funding to develop computer-verified tutorials on termites, fleas, and cockroaches. These tutorials were developed with the cooperation of national experts in each area. In addition, the authors are cooperating with a pest control training company to distribute tutorials on many aspects of urban pest management.

NPCA computer-verified training programs, *Termites*, *Fleas*, and *Roaches*, make extensive use of graphics and VGA color photographs to teach the biology, ecology and control of the three major groups of termites, and several species of fleas and roaches. Each section of the tutorials can be

used without taking a formal test. However, each section requires the user to display short-term mastery of concepts in order to continue through the program.

Pest control operators and other individuals interested in obtaining verification of training can use a testing option built into the program. This option provides the name of the test, the name of the student, the date the test was taken, and whether the student passed or failed. This optional examination, located at the end of each tutorial, requires the user to demonstrate long-term mastery.

All three NPCA programs each take less than 5 MB of hard disk space. In addition, they can be run on any PC-compatible system, even an XT, as long as it has VGA graphics capability. Each program comes complete with a self-install utility and graphics printing capability. The NPCA hopes that these programs will be the beginning of a set of nationally accepted computer-verified tutorials that state agencies will accept as proof for CEUs. The NPCA is working with these agencies and state associations to develop verification requirements.

The authors, through the University of Florida, also licensed a private pest control training company to distribute a program called *PCSTrain*. This program, developed at the University of Florida, consists of individual diskettes, which can be purchased separately or by subscription. Each disk covers a major urban pest or pest group. Each disk is accompanied by a university extension publication containing information on the pests as well as color photographs.

*PCSTrain* may be used individually or in a classroom setting. Pest control operators can use the program as a simple tutorial and, in Florida, as a method to earn CEUs in the General Household Pest category. Each *PCSTrain* disk asks fifty questions based on material taken from the university publication. As users advance through the program their scores are displayed in the upper right-hand corner. Final scores can also be displayed, printed out, or saved to a computer file. Florida allows 1.0 CEUs per diskette to PCOs who file a certification form and a printout of test results. Up to four technicians are allowed to earn CEUs on each diskette. State regulators are more concerned with improved training than verification, but reserve the right to test PCOs on the material. The *PCSTrain* program has been expanded to cover pesticide labels and Florida now allows certified operators to earn CEUs in the CORE area.

The University of Florida Energy Extension Office provided the senior author and several other UF faculty with funding for a database and tutorial on mole crickets. This major southeast United States turfgrass pest group causes an annual loss of \$72 million in damage, including control costs, in Florida alone. In addition, approximately 75% of all insecticides used on golf courses are used to control this pest group, and Florida has over 1,200 such courses. This insect has recently emerged as an introduced pest in various areas of the world.

The software program, called MCRICKET, contains information and a graphical identification key for all ten species of mole crickets found in North America, including Hawaii, Puerto Rico and the Virgin Islands. The program provides detailed information on mole cricket damage and biological, cultural, and chemical control techniques. Users can even play the songs of two major pest species.

MCRICKET contains three tutorials that instruct turfgrass managers and homeowners on the proper use of chemicals, correct calibration of equipment and spray mixtures, and detailed information on successful biological control alternatives for chemicals. University of Florida publications on turfgrass calibration formulas, home irrigation calibration, and hand sprayer use are available on-line or can be printed off.

## SUMMARY

The pest control industry has lagged behind other areas of the economy in developing extensive software training and reference programs, especially for small PCO concerns. Increasing government regulation requires that the urban pest control industry standardize its training. The best way to do this is through interactive computer presentations.

The state of Florida is moving from registering just its certified operators to voluntary, and eventually mandatory, certification of all pesticide technicians. The authors are cooperating with Florida's regulatory agency to develop computerized testing procedures to handle the greatly increased testing requirements.

Additional information on these and other insect related software programs can be obtained from the senior author by sending request to his e-mail address: [fasulo@gnv.ifas.ufl.edu](mailto:fasulo@gnv.ifas.ufl.edu). A WWW site at <http://gnv.ifas.ufl.edu/~ent1/software/fasulo.htm> contains detailed information and links to demos and, in some cases, complete software programs.

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