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Does the University of Missouri Extension Educational Program for Aspiring Certified Pesticide Applicators Assist Them in Passing the General Standards Exam?

Fred Fishel

University of Florida, weeddr@ifas.ufl.edu



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Does the University of Missouri Extension Educational Program for Aspiring Certified Pesticide Applicators Assist Them in Passing the General Standards Exam?

Abstract

A survey was administered in 2002 to determine if the University of Missouri Extension's educational program for pesticide applicators provided an advantage for those attempting the state certification exam for the first time. The survey compares the success rate of applicators who attend the program to those who elect to only self-study. Following the program, the Missouri Department of Agriculture conducted the survey prior to administering certification exams. The survey demonstrates such a program provides benefit and is a relatively simple method for Extension professionals to show accountability for such an effort.

Fred Fishel

Associate Professor
University of Florida
Gainesville, Florida
weeddr@ifas.ufl.edu

Introduction

During the mid-1970's, the Federal Insecticide, Fungicide, and Rodenticide Act (USEPA, FIFRA, 2005) was amended to authorize each state to enact a certification/licensing program for applicators of restricted use pesticides. The regulating agency for this program in Missouri is the Missouri Department of Agriculture (MDA, 2007). Restricted use pesticides are those that are classified as such by the EPA, and sometimes state, because they pose a significant risk to humans or to the environment, even when used according to label directions.

Missouri law requires that commercial applicators of any types of pesticides be certified and licensed. Also, those applicators who seek either a non-commercial or public applicator license must be licensed for using pesticides classified as "restricted." Those who seek any of these three types of licenses are required to pass (70%) closed-book exams that are administered by the MDA. One exam that all applicators are required to pass is the General Standards exam. It consists of 50 multiple-choice questions; each question containing four possible responses, but only one correct answer.

For some, employment is at stake if they don't pass the exams. Traditionally, Extension has targeted largely rural agricultural audiences; however, the largest percentage of Missouri's commercial applicators is employed in urban environments where they engage in the lawn/ornamental plant care and household pest control industries. Because the overall mission is to assist clientele in enhancing their lives, this audience is a viable opportunity for University of Missouri Extension (UME) and Extension in other states with similar requirements.

Preparing for the Certification Exams

The General Standards exam is based upon the content of a study manual that was developed cooperatively by the EPA, USDA, and Extension. Attendance at an educational program for exam preparation is strictly voluntary. Surveys have shown that the majority of states do not require commercial applicators to attend programs before taking certification exams; however, the majority of states require passing a mandatory, closed book exam (Certification & Training Assessment Group, 2002).

Those who are preparing to take the General Standards exam have several options for exam preparation assistance. Most land-grant university Extension Services offer some type of program. UME provides an annual 1-day educational program designed for adults (minimum of 18 years of age) who wish to become certified commercial, non-commercial, and public pesticide applicators. Five events are held throughout the state. At each event, the morning session is designated to focus on review of much of the material covered by the General Standards exam. Besides Extension offering programs, there are some private industry groups who target this audience, particularly those companies whose employees are required to meet the standard. At least in Missouri, many will choose self-study as their only means of preparation.

Although this program has been on-going for many years, no evaluation had been conducted to quantitatively determine if it actually benefited the success rate of first-time General Standards exam takers. Besides using such data as a program marketing tool, the lack of such an evaluation does not provide for:

- Definitively determining the success rate, and thus, usefulness to this target audience.
- Program success in accountability to UME and USDA Administrators.

The major objective of the survey reported here was to determine if the program provided an advantage to those first-time exam takers who attended compared to those exam takers who chose not to attend and relied only on self-study for the general standards exam.

Methods

A survey was developed in 2002 and facilitated on-site by MDA at exam locations prior to administering the General Standards exam. Because the UME program was held during January, the survey was administered for the 3-month period, February - April, 2002. Because the survey's objective attempted to ascertain results from first-time exam takers, those who had the exam more than once were deleted from analyses. Survey responses were compared to their exam results to compute success. Based on the criteria desired for participation in this survey, there was a pool of approximately 100 applicators. Although the one-page survey sought additional information, relevant questions include:

- Is this the first time that you have taken the general standards certification exam?
 Yes No
- Did you attend one of UME's one-day certification educational programs during January?
 Yes No
- If today is your first attempt taking the general standards exam, how many hours would you estimate that you spent studying the suggested study materials?
 0 0-5 5-10 10-15 15-20 More than 20

To follow the guidelines of the Institutional Review Board, analyses were conducted at a central location.

Results

Results are summarized (Table 1) comparing the:

- Overall success rate of exam takers for those who attended the program to those who did not.
- Hours of self-study by those who passed the exam comparing those who attended the program to those who did not.
- Hours of self-study by those who attended the program comparing the passing rate.

Table 1.
Summary of Survey Results

General Standards Exam Success Rate			
Attendance of UME Educational Program		Persons Achieving Passing Score (%)	
Yes		70	
No		62	
Time Studied by Those Passing the General Standards Exam			
Attended UME Educational Program		Did Not Attend UME Educational Program	
Hours	Number of Persons (%)	Hours	Number of Persons (%)
0 — 5	31	0 — 5	30

5 — 10	29	5 — 10	34
10 — 15	12	10 — 15	13
15 — 20	17	15 — 20	14
> 20	11	> 20	9
Time Studied by Those Attending the UME Educational Program			
Hours	Persons Achieving Passing Score (%)	Hours	Persons Not Achieving Passing Score (%)
0 — 5	53	0 — 5	47
5 — 10	67	5 — 10	33
10 — 15	69	10 — 15	31
15 — 20	71	15 — 20	29
> 20	83	> 20	17

Those first-time General Standards exam takers who attended the UME program had a passing rate of 70%, while the success rate was 62% for those who did not attend. This is an overall passing rate and does not account for the amount of time devoted to self-study. Regardless of attending the UME program or not, first-time exam takers spent no more than 10 hours in self-preparation, yet still passed. As expected, considering strictly the number of hours spent in self-study for those who did attend the UME program, the passing rate increased from 53 to 83% for those who studied no more than 5 hours to those who studied at least 20 hours, respectively.

Implications

The survey does not reveal several factors related to success: quality of self-study time and an applicator's previous working experience with handling pesticides. Although no guarantee of passing on the first attempt, those factors would likely have some effect. Simply attending this program provides no promise of passing for a first-time exam taker. Those applicators who wisely invested more than 5 hours into self-study and attended the program were most likely to be successful.

The survey shows the UME program to be a supplemental asset. It provides a comprehensive review of the material that is presented on the exam and stresses the importance of self-study. Although not a requirement in Missouri, some states require attendance of such a program prior to being permitted to attempt the licensing exams. Offering similar programs in other states provides an opportunity to Extension professionals, and a simple survey, such as the one reported here, demonstrates and justifies a successful program.

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