

## Pilot Outcome Program Assessment for Entomological Training Master Gardening Volunteer Trainees

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Background information. “Outcome program efforts” for Extension Entomologists have become a major focus in the Texas AgriLife Extension Service. Outcomes are measures of adoption, change, savings or improvements by clientele/customers of the agency. The idea is to generate documentation that explains the “so what” impact of the educational outreach program efforts conducted by Extension personnel, (including County Extension agents, Extension Program Specialists and Extension Specialists). In contrast, “outputs” are attendance, information taught, and resources developed and/or used in education. Certainly, “outputs” attributed to Extension personnel, such as unique technical or outreach educational program contributions (including enhanced teaching methods such as use of video clips), must be produced first, before these elements can be adopted and claimed to be direct “outcomes” from this Agency’s efforts.

Existing evaluation instruments for various programs can be found at: <http://extensionanr.tamu.edu/2007educationalcontent.htm>. Four levels of outcome evaluations are: 1) Satisfaction; 2) Short-term - Prior knowledge and knowledge gained; 3) Medium-term – Behavioral change; and 4) Long-term – impact on the industry.

Model outcome programs, such as the Earth Kind program developed by the Department of Horticultural Sciences, are used by County Extension Agents and the assessment data counts towards their successful outcome program documentation, specifically using a Scantron Program Evaluation form. Information for the Earthkind Program is available on-line to County Extension Agents and Drees was provided access to log into information for the Agent's Only section of Aggie Horticulture (Note: To access the Agent's only section, go to <http://aggie-horticulture.tamu.edu>, click on Extension, then scroll to the last item, which is the link to the Agent's only section) by Martin Anderson, Web Administrator, Texas AgriLife Extension Service. The complete description of this outcome program effort can be found there, including evaluation instructions.

For the Entomology Project Group, one model outcome program report has been provided: “2007 School IPM Outcome Program Report” (J. Hurley, M. Merchant, and D. Renchie). This report describes a multi-year and multi-faceted series of trainings followed by the results of a retrospective post evaluation questionnaire focusing on changes in levels of knowledge and participant satisfaction.

Master Gardening and Master Naturalist program efforts within the Texas AgriLife Extension Service are successful and established programs. Coordinated at the state-wide level and organized at the county level, most volunteer training programs offer weekly sessions utilizing the services of disciplinary specialist staff and faculty. Discipline specialists, such as Drees and other AgriLife Extension personnel (Extension Specialists and Extension Program Specialists), provide training upon agent request but are not directly involved in Outcome Program Evaluation efforts nor are they often receiving credit the volunteer training they provide to the larger effort. Thus, participating personnel (invited speakers, discipline specialists) are unable to claim this often substantial time and effort

commitment as at least a part of an Outcome Program and volunteer training effort formally reported at the county level.

Currently, measures for documenting Master Gardening Outcome Program seem to be lacking, non-uniform, or not widely known/available. According to Tom LeRoy, Montgomery County Extension Agent – Horticulture, “The 2009 Master Gardener Class is my Outcome Program this year and I would love to get something that could be of value to (Specialists) Bart, and other (Extension personnel) Scott, Reggie and me. We are doing the Customer Satisfaction Surveys for each of the speaker but I had also planned on a retrospective post survey on reducing pesticide use, saving money through better management, IPM adoption, water conservation, etc.” Reggie Lepley, County Extension Agent - Agriculture, Walker County noted, “I too would like some help with standardizing our evaluation process. It is extremely time consuming to develop new evaluation documents for each and every program done here on the county level and then interpret the data. Our local evaluation efforts tend to be hit or miss based on subject matter at hand at the point of evaluation -something I'm not real happy about either. We do individual class evaluations; however, I find them more useful in evaluating the speaker rather than the information learned. I have reached the point where I am not satisfied with my year end evaluation tool. This is not a complaint, but I have always wondered why we do not have a standardized Master Gardening program evaluation – realizing that training topics vary from program to program, but basics are basics everywhere. I would be happy to help work on developing some type of a standardized evaluation tool that could be utilized.” Jayla Fry, Master Gardening Coordinator, mentioned use of the EarthKind Master Gardening Evaluation form.

Other examples of outcome evaluations available (per. Com. P. Pope, Feb. 16, 2009) include: 4-H Online Evaluation – Junior Master Gardening (JMG) Curriculum Knowledge – Pre and Post; 4-H Online Eval – JMG Curriculum Knowledge Key; EarthKind Environmental Stewardship – Program Evaluation and Farm Pond Management (pers. Com. P. Pope, Feb. 16, 2009). These instruments assess technical information gained and behavioral changes undergone by students/clientele receiving technical training. However, they do not assess the ability of recipients to assess their development as volunteers of the Agency or the contribution of particular disciplinary instructors involved overall training program series such as those provided to Master Gardening or Master Naturalist volunteer trainees.

Objectives. An a potential Outcome Program Evaluation form was developed and evaluated for Master Gardening volunteer trainees taught by an Entomology Specialist. Questions were designed to assess the instructor’s success in training recipients in their satisfaction of the program, competence in their role as Extension agency volunteer, grasp of entomological and toxicological concepts (Level of Understanding), and their intentions to adopt practices in their volunteer role. The concept is to develop an evaluation instrument that could be modified by other instructors within the AgriLife Extension Service and use it to develop Outcome Program documentation attributable to their professional titles or level within the agency.

## Methods and Materials

A Word version of the EarthKind Evaluation form developed by Dr. Don C. Wilkerson, Professor and Extension Specialist with the Department of Horticultural Sciences was obtained from Paul E. Pope, Extension Program Specialist II – Evaluation, Organizational Development with the Texas AgriLife Extension Service. The questions on the form were modified to reflect Drees' teaching objectives as an Entomologist guest lecturer training Master Gardener volunteer trainees. These trainees generally receive about 4 hrs. PowerPoint presentations covering: 1) General Entomology and volunteer expectations; 2) Diagnosing arthropod problems on plants; and 3) Integrated Pest Management Concepts. However, as important as technical information provided, trainees are subjected to expectations and directions volunteers will be expected to enact upon graduation. Stressed are their actions, particularly in regard to providing current science-based AgriLife Extension entomological information and the strategy for suggesting (and discussing pros and cons) of clients' selection of management options such as use of insecticides and miticides.

The evaluation form was given to the Master Gardening volunteer trainees in Huntsville, Walker Co., TX on March 26, 2009. Twelve survey forms were returned from the class of 25 trainees. Results were tabulated and analyzed using an Excel spreadsheet to calculate percent responses and average rankings to questions.

## Results

The retrospective post evaluation questionnaire below was modified to incorporate analyzed responses. Overall satisfaction with aspects of the program (Question I) was high, averaging from 4.17 (Mostly) to 5 (Completely). Most respondents were likely to recommend use of the Texas AgriLife Extension Service to others (8.3 responding to 8 and 9, and 83.3% responding to 10 or "Likely").

Question III compared trainees' Level of Understanding on technical questions and where to obtain sources of current science-based technical information. The percent change in average rankings increased over 50% for all concepts and question items (range: 54.1 to 77.2), from ratings of 1.6 ("Poor") through 2.7 ("Fair") to ratings of 2.9 ("Fair") through 3.8 ("Good").

The likelihood of adopting practices stressed in the training (Question 4) resulted in most respondents reporting that the "Probably Will" (8.3% to 25.0%) or "Definitely Will" (58.3% to 83.0%). The item (4), "Not make any non-labeled insecticide use recommendations", was evidently difficult to understand because of the double negative and should have been re-written more clearly, i.e., "Will only make insecticide recommendations according to label directions".

Question V was asked to assess impact of the educational experience on the trainees personal abilities to practice better management decisions in their garden and landscape situations and 100% responded "yes".

Numerous comments were provided, reflecting again the success of concepts stressed to volunteer trainees during the lectures (A), and suggestions for improvement (B) for future presentations. The last part of this question provided information about the speaker. None of these responses could be quantified. However, all comments were useful and generally

supportive.

Suggestions for future revisions of this Outcome Program Evaluation (pers. comm. C. Sansone, Feb. 18, 2009) include:

- Re-working learning objectives (concerning Definitely will, Probably not, etc.)
- Focus more on learning objectives (technical information)

The hope is that this pilot project will stimulate further discussion among Entomology project group members, other discipline specialists, Master Gardening and Master Naturalist coordinators (statewide and county), and Extension Program Evaluation/Organizational Development personnel to allow assessments that will benefit not only the agency, but improve accountability for all levels of Extension faculty and staff involved in these programs.

## Master Gardening Entomology – Outcome Program Evaluation

*Your views on the quality and effectiveness of Extension programs are extremely important. Please take a few minutes to tell us about your experience with this meeting. Your answers to the following questions will help us better meet your needs in the future. Thank you!*

Overall, how satisfied were you with the program?

1- Not at all    2- Slightly    3- Somewhat    4- Mostly    5- Completely

If not “completely satisfied,” please tell us what we could have done better in order for you to have been “completely satisfied?”  
Four hours including considerable new material almost overload. See comments.

I. How satisfied were you with the following aspects of the program . . .

	<u>Not at all</u>	<u>Slightly</u>	<u>Somewhat</u>	<u>Mostly</u>	<u>Completely</u>	<u>Average</u>
	1	2	3	4	5	1-5
<u>Quality</u> of course materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25.0%	75.0%	4.75
<u>Location</u> of the activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33.3	66.7	4.67
Information being <u>accurate</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100.0	5.00
Information being <u>new</u> to you	<input type="checkbox"/>	<input type="checkbox"/>	8.3	58.3	33.3	4.25
Information being <u>easy to understand</u>	<input type="checkbox"/>	8.3	8.3	33.3	50.0	4.25
<u>Range</u> of topics covered	8.3	<input type="checkbox"/>	8.3	16.7	66.7	4.33
<u>Completeness</u> of information given on each topic	<input type="checkbox"/>	8.3	8.3	41.7	41.7	4.17
<u>Timeliness</u> of information (in time to be useful)	<input type="checkbox"/>	<input type="checkbox"/>	8.3	16.7	75.0	4.67
<u>Helpfulness</u> of the information in decisions about your own situation	<input type="checkbox"/>	<input type="checkbox"/>	8.3	25.0	66.7	4.58
<u>Knowledge level</u> of presenters on the subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100.0	5.00
<u>Instructor responses</u> to student questions	<input type="checkbox"/>	<input type="checkbox"/>	8.3	8.3	83.3	4.75



IV. Please indicate your intentions to adopt the practice(s) discussed in each of the following areas, or indicate if you have already adopted the practice(s). Do not respond to topics not covered in the program.

Do you plan to:	Definitely Will Not	Probably Will Not	Undecided	Probably Will	Definitely Will	I have already adopted this practice
Seek proper identification of pests before providing any IPM suggestions	0.0%	0.0%	0.0%	25.0%	58.3%	16.7%
Consult with AgriLife Extension information sources for IPM first	0.0	8.3	8.3	25.0	50.0	8.3
Share AgriLife IPM suggestions with clientele before sharing personal views	0.0	0.0	15.4	15.4	69.2	0.0
Not make any non-labeled insecticide use recommendations	16.7	0.0	8.3	8.3	58.3	8.3
Present IPM alternatives from non-chemical options first to pesticides last	0.0	0.0	8.3	16.7	75.0	0.0
Encourage use of least-toxic, most environmentally sound IPM tactics	0.0	0.0	0.0	25.0	58.3	16.7
Use education as a way to help clientele make better IPM choices	0.0	0.0	0.0	16.7	75.0	8.3
Encourage use of target-specific IPM options to conserve natural enemies	0.0	0.0	0.0	16.7	83.0	0.0
Seek assistance from County Agents or Extension Specialists when needed	0.0	0.0	0.0	25.0	58.3	16.7
Continue to learn about the fascinating lives of insects	0.0	0.0	0.0	25.0	58.3	16.7

V. Do you feel like what you learned in the program provided you the ability to analyze your situation and make better gardening and landscaping management decisions?

YES  
(100%)

NO

UNSURE

## VI. COMMENTS:

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### A. What is the most significant thing you learned during the Program (feel free to list more than one)?

Diagnosis & differentiation between chewing & sucking insects.  
Often insecticide targeting must be implemented at a very specific stage or risk complete ineffectiveness.  
Identification benefits.  
How to read the evidence of insects & what/how they injure a plant.  
Role & type of natural agents for pest control.  
Identify pests before trying to eradicate them.  
How to diagnose.  
Diagnose problem first.  
Biological control before chemical control.  
Behavior patterns of various insects.

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### B. What other information do you need pertaining to these topics?

A book with different insects in it that has all of its stages in it.  
Perhaps a few practice diagnosis exercises would be beneficial.  
More extensive.  
Better pictures of pests.  
More specifics on pest damage assessment.  
What signs & symptoms go to a specific pest/plant.  
None.  
More information on diagnosis.  
Treatments are so limited that we need precise diagnosis to minimize incorrect application?

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### C. Provide any comments about the speaker and presentations made:

Very and knowledgeable speaker.  
Speaker fine with such an interesting, varied and colorful subject matter, I felt the slide presentation could be stronger.  
Knowledgeable, entertaining, easy to pay attention to.  
Speaker was relaxed in spite of GI distress – with the class comfortable with his level of expertise, engaging to the class.  
Good use of humor.  
Practical and useful information.  
Very professional and enjoyable class.  
Excellent speaker with superb presentation material.  
Great photography. Really would like to have a copy of the presentation.  
It would have been helpful to have a longer question and answer period after the class.  
Examples of the most asked questions to ext. agents.  
Not as in depth but more on specifics such as, fire ant control, termites, pine bark beetles, etc.  
Excellent training aids.

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