



1996 Report to AAPCO - Spring Meeting

March 11, 1996

"Farming is a most senseless pursuit, a mere laboring in a circle. You sow that you may reap, and then you reap that you may sow. Nothing ever comes of it." Johannes StobaeusFlorilegium Pt. xxxviii, l. 30

(Stobaeus was a Greek Classical Compiler fl. 5th Century. He also said "How vain is learning unless intelligence go with it.")

I, and all the members of AAPSE, thank you for asking me to report on our activities and to share some thoughts and concerns with you. We also appreciate being included in your program planning sessions and in the SFIREG meetings.

Our stationery states very succinctly "who" we are:

AAPSE is an association of environmental and pesticide safety educators providing science-based educational programs to the public through Cooperative Extension and the Land-Grant University System.

The Preamble of our Constitution states that:

"The Cooperative Extension Service has contributed immeasurably to modern pest management by serving as a bridge between the world of academic research and the world of agricultural practice. Among the most important pest management practices has been the use of pesticides to control insects, weeds and plant diseases. Safe and effective use of pesticides requires an understanding not only of their many benefits but also of their potential effects on the applicator, his or her fellow workers, the public and the environment. The Association is committed to the establishment of the highest standards in pesticide safety education, the promotion of sensible pesticide education policies, and the implementation of safe and effective use practices."

The purpose of AAPSE as stated in Article I, Section 2 of the Constitution is: "to represent the interests of land-grant college & university pesticide educators; to develop & promote effective, high quality pesticide education programs; to encourage & sponsor the adoption of the most effective methods of pesticide safety training; to provide facilities & opportunities for exchange of information, discussion & cooperative study of problems confronting members of the Association; and to cooperate with others dedicated to development & promotion of safe & effective pesticide use policies & education programs." [Note: the emphasis is on Pesticide Education, not just Pesticide Applicator Training.]

The key words here may well be ".....to cooperate with others dedicated to development & promotion of safe & effective pesticide use policies & education programs." On the national level we cooperate with the Environmental Protection Agency, the US Department of Agriculture and, of course with you -- AAPCO. And, we certainly appreciate your assistance and support. We will probably be needing your support even more in the not too distant future!

On the State level we cooperate with all of the trade, professional and commodity associations. We also cooperate with other State Agencies such as the Environmental Protection agencies, Natural Resources, Wildlife & Fisheries, Health & Hospitals, Public Safety, County, & Municipal governments and the local schools. And, YES, we cooperate with the agri-chemical industry. Perhaps our closest cooperation is, or should be, with your state members --- the SLAs.

Without this cooperation we would not be able to deliver our product --- education --- to our traditional clientele: the agricultural community. We now deliver programs about the safe use of pesticides to homeowners and other pesticide users as well as some non-users. For that is the bottom line: to serve the production agriculture community; i.e., the farmer and the support industries. Our program has, however, expanded well beyond the agricultural community and we will deliver our program to those who need it. Whereas a large number of our programs are driven from the bottom up, some, e.g., PAT, is or was originally driven from the top down. The CFR (40CFR Part 171) spells out in some detail the topics that a pesticide applicator should be competent in; therefore, these are topics which should be covered in any educational program. The CFR lists 8 major topics or areas in which the applicator must demonstrate competency:

1. Labels & Labeling Comprehension

- The general format & terminology of pesticide labels and labeling;
- The understanding of instructions, warnings, terms, symbols, and other information commonly appearing on pesticide labels;
- Classification of the product, general or restricted; and
- Necessity for use consistent with the label.

2. Safety (Our program includes but is not limited to:)

- Pesticide toxicity & hazard to man and common exposure routes;
- Common types and causes of pesticide accidents;
- Precautions necessary to guard against injury to applicators and other individuals in or near treated areas;
- Need for and use of protective clothing and equipment;
- Symptoms of pesticide poisoning;
- First aid and other procedures to be followed in case of a pesticide accident; and
- Proper identification, storage, transport, handling, mixing procedures and disposal methods for pesticide containers, including precautions to be taken to prevent children from having access to pesticides and pesticide containers.

3. Environment (The potential environmental consequences of the use and misuse of pesticides as may be influenced by such factors as:)

- Weather and other climatic conditions;
- Types of terrain, soil or other substrate;
- Presence of fish, wildlife and other non-target organisms; and
- Drainage patterns.

4. Pests

- Common features of pest organisms and characteristics of damage needed for pest recognition;
- Recognition of relevant pests; and
- Pest development and biology as it may be relevant to problem identification and control.

5. Pesticides

- Types of pesticides;
- Types of formulations;
- Compatibility, synergism, persistence and animal and plant toxicity of formulations;
- Hazards and residues associated with use;

- Factors which influence effectiveness or lead to such problems as resistance to pesticides; and
 - Dilution procedures.
6. Equipment
 - Types of equipment and advantages and limitations of each type; and
 - Uses, maintenance and calibration
 7. Application techniques
 - Methods of procedure used to apply various formulations of pesticides, solutions, and gases together with a knowledge of which technique of application to use in a given situation;
 - Relationship of discharge and placement of pesticides to proper use, unnecessary use, and misuse; and
 - Prevention of drift and pesticide loss into the environment.
 8. Laws and Regulations (Applicable State and Federal laws and regulations.)

And then, of course, there are standards of competency for each category of commercial applicator. The standards for certification of private applicators are not quite as stringent or covered with the same depth as commercial applicators, but are still a rather extensive and impressive list.

We, as Pesticide Safety Educators, do our very best to develop and implement an educational program to do justice to these noble standards!!! However, if we covered all of these topics in the detail they merit we would be able to give each certified applicator at least 3 semester hours of university credit.

But, were we as educators satisfied?! Oh, no, we had to torture ourselves further in 1988 by developing a "Model Minimum Curriculum Requirements for Training" -- the Ideal! Instead of 8 categories of topics to be covered by EPA there are 14 (almost doubled), and the 8 EPA categories have more subcategories, i.e., the educational program is greatly expanded in the model minimum curriculum. The additional categories include: *Pesticide Record Keeping* (the need for records and how to keep them); *People, Pesticides, and Public Relations* (applicator responsibilities; community concerns; individual concerns); *Special Concerns* (Right-to-Know laws; Endangered Species; pest resistance [local problems]; fumigation/chemigation-irrigation; ground and surface water contamination); and *Integrated Pest Management* (definition & philosophy; scouting [economic thresholds for pests]; application of IPM techniques; and a discussion of what IPM is and what it is not). None of these topics are PAT topics and are much more than is required by PAT, but we feel in order to be a good, responsible applicator, the individual should be knowledgeable in these areas.

The section on Environmental Consideration was especially expanded and includes:

1. General
 - Soil
 - Water
 - Air
 - Plants
 - Beneficial insects - specific examples
 - Wildlife - specific examples
2. Pesticide persistence
3. Pesticide accumulation
4. Alternatives to pesticides
5. What pesticide applicators can do to protect the environment
6. Drift to non-target sites

7. Environmental fate of pesticides (degradation)
8. Non-point source pollution (explain, as most people don't know what it means.)

"Discussion should include ground water problems and ways that ground water receives pollution from pesticides. The wildlife discussion should also include information on the Endangered Species Act and the implication of the use of pesticides in certain areas where endangered species have been identified. Students should be introduced to IPM techniques wherever they are appropriate."

Indeed there is a great emphasis on "the environment", in its broad definition. Also, almost all of the other categories of competency have some type of impact on the environment - some impact cannot be avoided. In an effort to really understand "the environment", in spite of the ecology and other biology course I have taken as a student and taught as a Professor, I checked the derivation of the word. The word *environment* was coined by the Scottish writer, Thomas Carlye (1795-1881) in the 19th century. (He also coined the word decadence!) It comes from French and Old English - environ = to form a circle or ring around; surround; envelop. Carlye may have used it to mean --- entrap. Carlye also contended that might and right are the same, that a few people are superior to others, that democracy is absurd, that the rights of individuals should be denied and that government should be in the hands of one hero or dictator!

The environment is the sum total of all of our surroundings - physical, chemical, and biological. This includes climate, soil, water, air, and all species of living organisms. We, as well as all species of plants and animals, are never free or devoid of the various forces or requirements of the environment. Our future is dependent upon the wisdom and foresight with which we utilize our renewable as well as our non-renewable resources. That is, our future is dependent upon the quality of our environmental stewardship - the stewardship which we display now, in the present. We see our role as Pesticide Safety Educators to educate our clientele so that they can make informed decisions. We cannot afford the luxury of making judgments or practicing the art of agricultural production or using pesticides based on inadequate or incorrect information. Alexis Charles Henri Clerel de Tocqueville, French statesman and political philosopher (1805-1859), author of *Democracy in America*, was a monarchist who believed our experiment in participatory (republican) democracy was doomed to failure because of the "tyranny of public opinion." As an educator, what frightens me is the "tyranny of an uninformed or misinformed public opinion". Therefore we spend our entire careers trying to make sure everyone, especially pesticide applicators, are well informed.

Because of our commitment to the Pesticide Education Program and in accordance with Section 23(c) FIFRA --- "the Administrator shall, in cooperation with the Secretary of Agriculture, use the services of the Cooperative State Extension Services to inform and educate pesticide users about accepted uses and other regulations made under this Act." --- we "attack" new items which surface, without funding but with grumbling (no doubt). These include Integrated Pest Management (Section 11(c) of FIFRA states that EPA may not require us to include IPM in our educational programs, but we do it anyway, for not to include it would be short changing our clientele), Water Quality, Endangered Species, Food Safety and the Worker Protection Standard. We also try to keep the applicators up-to-date on any new techniques, pests, rules, or problems which have arisen. We especially address the problem of pesticide resistance, for example, because how can you manage resistance without a basic understanding of how resistance develops? We try, especially, to address items or practices which have caused problems in the previous year, e.g., back-siphoning. As the English author Francis Bacon said, "He that will not apply new remedies must expect new evils; for time is the greatest innovator."

Pesticide Applicator Training may have begun as an EPA program, but it is no longer just an EPA program nor is it just applicator training in order to use RUPs. It has become an Extension program, and has evolved into a broad-based pesticide education program, involving homeowners and other consumers, i.e., the Master Gardener program and Urban Pest Control/Management Program. There

are a large number of non-agricultural categories of commercial applicator with which we are involved, viz., Right-of-Way Pest Control, Aquatic Pest Control, Public Health Pest Control, Ornamental & Turf Pest Control, as well as Structural Pest Control. We also deliver a pesticide education program to the public through, for example, Service Clubs.

It is our belief that this program - the Pesticide Education Program - reaches more adult individuals than any other single Extension program, either through workshops, conferences, etc. sponsored by the Extension Service for the purpose of certification or recertification or through the use of the educational materials developed and published by Extension. Without this program production agriculture and human & environmental health would suffer. We must continue the program to assure responsible pesticide use by production agriculture and others.

The Pesticide Education Program should and must be a joint effort by the Environmental Protection Agency, the U.S. Department of Agriculture, the State Lead Agencies, and the state Cooperative Extension Services. In spite of significant downsizing, the Cooperative Extension Service still reaches into every county in the United States.

We are first and foremost **educators**, therefore we believe that there is nothing so frightening as ignorance in action.

If a goal is defined as an idealistic or even a remote purpose, then the goals of AAPSE are to have every pesticide applicator to use pesticides judiciously, with no negative impacts on human or environmental health, and for the general public to understand the need for and the proper use of pesticides.

"Objectives" often implies that the end or the goal can be reached; therefore, we have stepwise objectives and we can measure how well we are doing, e.g. numbers of applicators certified/recertified; numbers of applicators adopting various safety practices: number of applicators adopting some of the components of IPM, etc. We are constantly trying to improve our system for measuring our performance.

"Intentions" simply signifies a course of action that we propose to follow, viz, the education of pesticide applicators (private & commercial), homeowners, consumers, and others about production agriculture and the various inputs, especially crop protection chemicals, so that the necessary food and fiber can be produced in order to feed, clothe, house our ever-expanding human population, and to protect human health from the ravages of various Arthropod borne diseases. Emphasis with the applicators will be on the proper, correct, and judicious use of crop protection chemicals.

(Definitions of goal, objective & intention from the American Heritage Dictionary.)

We do not tell people that we are from the government and are here to help you. We say we are from the land-grant university and are here to help you. Indeed, we frequently go into the fields and demonstrate, we don't always just talk. We look for the teachable moment"!

We need the help of the SLAs and AAPCO members. We, AAPSE, cannot carry out our intentions or objectives, or reach our goals, without your help --- financial and otherwise. We need the regulators also -- sort of a carrot and stick approach! Education is one of the best enforcement tools there is.

It is my sincere belief, and I think I speak for the members of AAPSE also, that all persons who work closely with the natural resources of this country, and this includes anyone in any aspect of production agriculture (I daresay everyone in this room) share an essential (absolute, awesome) wonder of the natural world and consider the conservation and preservation of this natural world a high priority . As one of our specialists at LSU is fond of saying, "We need to take good care of this planet, for good planets are hard to find!"

Production agriculture can not afford to behave like Nero but must behave more like Caesar's wife!
And, it is the role of the Pesticide Education Program of the Cooperative Extension Service to assist
agricultural producers and other pesticide users to become more like Caesar's wife.

*Report given at the Spring Meeting of the Association of American Pesticide Control Officials by Mary
L. Grodner, March 11, 1996*

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American Association of Pesticide Safety Educators (AAPSE)

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