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## GOOD PRACTICE IN VERTEBRATE PEST CONTROL

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Good practice in pest control is a responsibility of several elements in our democratic, free-enterprise society. Most notably, these are: (1) the general public, (2) responsible government agencies and (3) industry. Before I comment about the responsibilities of each of these three groups, let me tell you about the work of structural pest control operators and their interests in vertebrate pest control.

The pest control industry which I discussed in detail at the Second Vertebrate Pest Control Conference (1) continues to grow and expand its fields of activity. At the present time, it is our estimate (2) that 26,700 persons are employed as pest control servicemen by the more than 5,000 firms which provide such service on a contract basis. The revenues produced by this work are now estimated at nearly 500 million dollars per year.

Ninety-five percent of the members of the National Pest Control Association (NPCA) engage in what we call "General Pest Control." It involves the control of commensal rodents and a number of household insects. According to a survey conducted among NPCA members in 1965 (3), the house mouse and the Norway rat are number two and number three respectively in importance among the pests encountered by our industry and are exceeded in importance only by the German cockroach.

Bird control continues to gain in importance among the industry's sources of business and nearly half of our members provide such service. Among all pests, the feral pigeon ranked 16th in the 1965 survey and the English sparrow was 24th. Starlings and bats were tied in 39th place.

Much of our industry's work in bird control is concerned with the protection of structures--homes, churches and industrial plants--from roosting birds. Bird control work at food processing and warehousing plants has been stimulated by actions under Food and Drug Laws. The control of pest birds at feed lots for cattle, pigs and poultry is rapidly expanding. PCO's also receive requests for assistance from members of the public plagued by woodpeckers or gulls or even migratory song birds which injure buds or fruit or seeds of crops and ornamental or specimen plants.

The concern about rabies in bats and skunks plus the conflicts which arise when humans and wild animals attempt to use the same habitat are the basis for many additional requests to our industry to provide a variety of services quite different from those expected of old-time exterminators.

At any rate, control of commensal rodents, pest birds and other animals which adversely affect the public health and well being is an expanding and essential part of the work of the commercial pest control industry.

## PUBLIC RESPONSIBILITY

The general public, now predominantly urban, has little knowledge and even less interest in meeting their vertebrate pest problems. Those of us attending this meeting would seem to have a special responsibility to help the public to a better understanding of Nature in general and of the pest vertebrates in particular, I believe there is an urgent need for our schools to deal with those aspects of biology that are both familiar and important in everyday life. Recently I witnessed a program designed to interest youth in the study of entomology. Most of the program dealt with cecropia moth. Now the cecropia is a beautiful moth and one that is big and easy to photograph. But in a highly urbanized state like New York--or California, young people cannot "identify with" a cecropia moth any more than they can with the Himalayan Snowman. But millions of school children in this country live with cockroaches in their homes. Similarly, there are commensal birds and rodents in most urban and suburban neighborhoods. They can serve as practical teaching tools that can be exceedingly helpful in permitting the public through the young people to understand the habits, needs, prevention and control of several pest vertebrates.

## SUPPORT BY OFFICIAL AGENCIES

At the Annual Convention of the National Pest Control Association, held in this city in 1963, we had an invitational address from Dick Peters, Chief, Bureau of Vector Control, California State Health Department (5). He left us with many thoughts among which was the challenge that PCO's should increase their emphasis on "preventive vector control consultation expressed as environmental management" instead of the "present almost exclusive reliance upon chemical technology with minimal emphasis on environmental measures." We see this as a "goal devoutly to be desired" but one that is not within reach to any significant degree. Before that star is reached, we shall need much help from government in the areas of research, inspection, enforcement and education.

A scheme which Dick suggested at the same time and which seems to have a good chance to succeed in meeting some current needs is that there be "a kind of partnership in detection and correction, with the health department fulfilling the role of detective and the industry performing the role of contractor to accomplish the corrective technology indicated." We commend the efforts being made, especially here in California, to reach these goals through the joint efforts of Industry and Health Officers.

The development of standards or codes is an appropriate activity for industry alone or jointly with official agencies. Industry can then use such standards as guides to help the public attain compliance. The pest control industry cannot be expected to provide inspection reports as the basis for official regulatory action.

In our view, there is urgent need for regulatory action to enforce the sanitary codes we now have. It is a common complaint of PCO's that they can't do an effective job of pest control in a variety of conditions where there is a failure to enforce existing sanitary regulations or standards. The enforcement of reasonable sanitary codes is a responsibility of government without which it is not possible to attain good practice in pest control.

Consider the quality of pest control which is achieved in industries coming under the scrutiny of the U. S. Food and Drug Administration. The management of establishments in the food and drug trade is expected to meet rigid standards of sanitation and pest control. Their products are subject to seizure if they are adulterated by toxicants or filth or if prepared, packed or held whereby they may have been contaminated. The food industry, with the stimulation of enforcement by FDA, operates so as to obtain a very high degree of "good practice in vertebrate pest control." Pests are excluded. Sanitation avoids attraction of breeding places. Only a minimum of pesticides need be used to supplement these more basic procedures. Pest control work of this sort is challenging. It is rewarding professionally as well as financially. And it is possible mainly because of effective enforcement by a highly motivated official agency.

### ACTIVITIES OF THE PEST CONTROL INDUSTRY IN THE AREA OF GOOD PRACTICES IN VERTEBRATE PEST CONTROL

Sanitation and other bioenvironmental control techniques are recognized as the first step to efficient pest control. Many PCO's are eager to have the public utilize our industry's capability to inspect and describe measures which are consistent with the above-mentioned recommendation.

Sanitation is good housekeeping--keeping food cleaned up or covered up, avoiding unnecessary moisture and removing as much shelter as possible. Ordinary servicemen are well equipped to observe failures in sanitation and to stress their importance in relation to pest control.

Exclusion, too, is an essential in vertebrate pest control. It is especially important where structures and their contents are being protected. Without exclusions bird and rodent problems usually persist despite any other control measures that may be taken. Pest control operators are in an excellent position to provide and maintain barriers to vertebrate pests. Many perform simple rodent stoppage as a part of their job--but complete screening or rodent proofing is the responsibility of the property owner. Industry can do such work if the owner wishes to pay for it. Again, the degree to which these measures are practiced by pest control operators is directly related to the enforcement activity by the responsible government agency.

## NON-CHEMICAL MEANS OF CONTROL

Due to risk to public, pets or non-pest species, non-chemical means of control must often be used. PCO's must consider such methods when good practice indicates that the use of a toxicant may impose undue risks on non-target species. In fact, many PCO's consider such non-chemical methods as trapping a standard good practice procedure for commensal rodent control in food plants and warehouses.

When pests are trapped, their capacity to contaminate ends; trapped animals do not die in inaccessible places and cause objectionable odors.

When pet animals or protected species are caught in live traps, they may be released unharmed.

The use of distress calls, air streams and ultrasonic barriers also have some special applications on vertebrate pest control.

Except in federally inspected food plants most vertebrate pest control done by our industry is accomplished through the use of pesticides. That so much can be accomplished by the use of chemicals alone is comment in itself about the value of the pesticides we have and the skill with which they are used. This does not mean, however, that we are unmindful of recommendation A12 of the Environmental Pollution Panel of the President's Science Advisory Committee that "The control of pest populations should increasingly depend on an integrated combination of pesticide use with a wide variety of bioenvironmental techniques" nor that we ignore recommendation A13 that "Unnecessary use of pesticides should be avoided wherever possible." (4)

Most of the managers in our industry realize well enough that environmental control is sound procedure, particularly for the long run. They are also practical men whose livelihood, as well as that of their employees, is made by pest control accomplished today. So long as Society as a whole, or as represented by elected and appointed officials, is willing to accept the deposition and accumulation of pest-attracting food and shelter in residential environments, along highways, railroads and waterways or in unsanitary community dumps, and so long as it is unnecessary for property owners to pay for clean up and exclusion, our industry has little choice but to do the best it can with pesticides.

## GENERAL GUIDES TO SAFE USE OF PESTICIDES

Pest control operators have a number of guidelines to the safe and effective use of pesticides. The product label registered by the United States Government is the first and the most important of these. It gives the manufacturer's recommendation for the product's use. The overwhelming majority of pesticide manufacturers are ethical businesses concerned about their public image as well as their products' liabilities. Manufacturers provide information so the user can make safe and effective use of their products. This is necessary if there is to be the continuation of business through repeat orders that will justify the considerable investment made before any pesticide reaches the market.

The fact that a label is reviewed prior to its registration by the Federal authorities, provides an additional and necessary assurance of the validity of the instructions and precautions on a registered label. The pest control operator who follows these label directions has powerful support for the correctness of his treatments. It has been our experience in the office of the National Pest Control Association, that one of the best defenses against unwarranted claims of misuse of pesticides, or injury therefrom, is a record that the pesticide was applied within the guidelines of a USDA registered label. Claims usually collapse when a complainant, or more often his lawyer, recognizes that such advice has been reviewed and accepted as adequate by experts of the Fish and Wildlife Service, the Public Health Service, the Food and Drug Administration, as well as the United States Department of Agriculture, and that these instructions have established a pattern of use that is widely followed throughout the country.

Members of the National Pest Control Association and others who read out Technical Releases know that there is much practical information available to supplement the limited information which cannot be placed on a pesticide label. Our Technical Releases are developed from information provided by manufacturers, independent research workers, and numerous Federal agencies. In the preparation of releases related to the control of vertebrate pests, we have long had the generous and valuable assistance of the personnel of the Bureau

of Sport Fisheries and Wildlife and especially its Division of Wildlife Services.

#### LABELING SERVICE CONTAINERS

Another element of good practice is the promotion of labeling for all service containers of sub-divided or diluted pesticides. Under interpretations of the Federal Act and of the labeling acts of most states, pesticides which are being transported in a company's vehicle or a PCO's kit for use in service work are exempt from formal labeling requirements. Such requirements would be impractical and probably unenforceable. Nevertheless, there is general agreement that containers of service materials should carry identifying labels. The use of identifying labels on all pesticide containers has been recognized by NPCA's Board of Directors as an Industry Good Practice. Application equipments such as sprayers are exempted.

Labels on service containers will help to:

1. Prevent accidental use of the wrong pesticide by the serviceman.
2. Prevent accidental use of a pesticide at a greater concentration than safe practice permits.
3. Prevent accidental use of a pesticide by any of the general public who did not recognize the material as a pesticide.
4. Provide identification for the guidance of first aid and medical treatment in case of an accident involving the pesticide.

A label on a service container does not require the detail which is appropriate for a general use label. Careful review led to the conclusion that seven items were required on the label.

1. Identification of the material for exterminating use.
2. Warning of the degree of hazard.
3. Name and concentration of active ingredients.
4. General precautions.
5. What to do in case of accident.
6. That the product was a PCO product for his use and not to be sold.
7. The name, address and telephone number of the firm responsible.

It has been found possible to incorporate these items in two separate labels--one for highly toxic formulations carrying the word poison and the skull and crossbones and the other for less toxic formulations requiring only the signal word warning.

Thus, the pest control industry as represented by the National Pest Control Association is provided with a number of useful guidelines for the safe use of pesticides through the registered label, labeling on service containers and the technical and educational material provided for the servicemen who must apply these good practices in his daily work.

It is well enough to have all the information concerning good practice down on paper, but it is also necessary to convey it into the minds of the users. Therefore, we have several campaigns to enhance safety consciousness at both management and serviceman levels.

#### SAFE USE OF PESTICIDES

In 1964, NPCA adopted the following policy concerning the safe use of pesticides:

"In all pest control procedures, safety must come foremost. This can only be accomplished by giving due consideration to the exposure of the public to the experience of the serviceman and to the characteristics of the pesticide. Whenever it is necessary for the sake of effectiveness to increase risks in one of these areas, then good practice requires that additional precautions be taken in others. Under all conditions, public interest demands that operations be conducted under conditions most conducive to safety."

- "1. Observe the fullest precautions in handling, storing, and distributing the rodenticide, entrusting it to only fully trained responsible men for storage and use.
2. Any continuous exposure of the rodenticide should be made only in a sturdily built bait box, locked or otherwise securely closed, in which the rodenticide is inaccessible to children.

3. Exposure in open unprotected containers should be limited to situations where the building is under complete control of the operator for the entire period of exposure.
4. No baits should be placed above floor level, nor should they be placed where there is any possibility of spillage on foods or feedstuffs.
5. No exposure should be made in any container that may be carried by a rat, or in any container which may permit leakage or which can be overturned readily by a rat."

As our population concentrates in urban and suburban environments, it appears that our commensal vertebrate pests will create increasingly severe problems. Their solution will require the cooperative efforts of the public, official agencies and the industry.

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