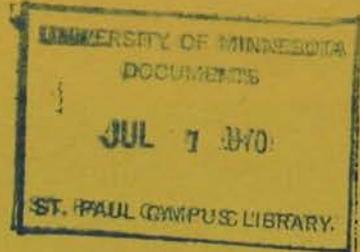
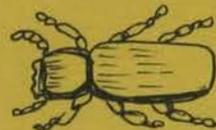
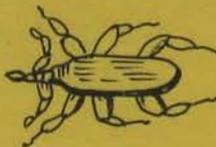


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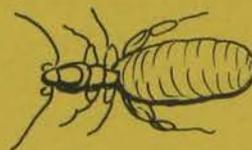
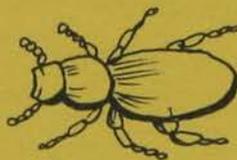
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3 PEST CONTROL
OPERATOR'S CONFERENCE



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General Lecture Classroom No. 495
Entomology, Fisheries, and Wildlife Building
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TABLE OF CONTENTS

		Page
Bats: Their Habits and Control	Harry H. Goehring	1
The House Mouse in Stored Grain	David M. Noetzel	3
Minnesota Structural Pest Control Law and Proposed Regulation	C. D. Floyd	4
Problems Faced by PCOs	Francis J. Humphreys	13
Public Relations	Gary H. VandeLinde	14
Nuisance Bees and Wasps	Basil Furgala	15

BATS: THEIR HABITS AND CONTROL

Dr. Harry H. Goehring
St. Cloud State College

There are 7 different species of bats found in Minnesota. Big Brown, Little Brown, Long-eared Little Brown, Pipistrel, Silver-haired, Red, and Hoary bats. All of these are insect eaters and helpful to man in controlling the night flying insects. Only the first two are likely to be found in houses in such numbers as to call for control; the others would be found in trees, caves or other protected places.

The Big Brown bat, about 12 inch wing spread, generally are found in small numbers (2-6) in the attic, basement, or other cool place of a house in winter as well as summer. During hibernation during winter they generally awaken about every 2 weeks, fly around possibly in search of moisture (frost), and then go to sleep again in a cold but not freezing spot, such as around the chimney, under boards, boxes, cardboard, or junk on the attic floor, or between the studding of the outside walls. During this hibernating period their heartbeat and breathing is so slow that fumigants have little effect on them, especially if they are in some very remote place.

The Little Brown Bat, about 8 inch wing spread, in this part of the country may be found in numbers up to 3-400 in the attic only in the summer. These migrate south during the middle of September and return about May 1. The females congregate in "mother colonies" in attics to bear their young during June-July. Generally, they do not inhabit the same attics as the Big Brown bats, and they return to the same attics in which bats lived the previous year. We may assume that the odor left by urine and droppings guides them to their "previous home."

A U.S.D.A. bulletin on getting rid of bats suggests the use of moth crystals or moth flakes to repel them. While this may work in some cases, one large home in St. Cloud, a 2-story building, had 25 pounds of crystals spread around in the attic and while some bats may have left, others just moved to the basement and other floors of "their home".

Another way suggested to rid the place of bats has been that of fumigation. This was tried at the Paramount Theatre in St. Cloud. While it may have killed some bats, other bats were in such far away places that they were not killed. Even if all were killed in the fumigation process, other bats would soon come to this previously occupied place to relieve the crowded bat housing problem.

The only sure way to get rid of bats, a permanent way, is to block every opening through which they may enter the building. Older homes, through shrinking of boards, and general expansion and contraction of nails leave spaces or cracks about one-half inch wide through which they may enter. The most common spots for entrance or exit are around the chimney flashing, the ridge pole, where the dormer meets the roof, the lower end of a roof valley, and along the eaves of the roof. Very seldom do they enter the chimney proper, but they have been known to come down a seldom used fireplace chimney in which there is little ash residue. Since the bats leave the building at dusk to go out to feed, a close watch of

the above spots may reveal the stream of bats coming out of their normal exit. This opening can then be stopped and other exits watched for the next night.

Bat banders have caught bats by stretching a wire about 2 inches above a stream or water hole over which bats fly, dragging their lower jaw to skim up drinking water. The bat hits the wire and drops into the water, and while they try to get to shore they are captured. This may be an idea for setting up a large pan, say 2 by 3 feet and 6 inches deep in which a wire is fastened about 2 inches above the water, yet leaving the sides too high for the bat to reach the top and crawl out. Some resourceful individual may try this and see if it would work.

THE HOUSE MOUSE IN STORED GRAIN

David M. Noetzel
Assistant Extension Entomologist
University of Minnesota

A variety of reasons exist for rodent control. These range from direct rodent injury to man to the reservoiring of disease by the rat or mouse and from rodent damage to property to rodent contamination of foodstuffs. In farm stored grains the latter possibility dictates the problem. More than 50% of all farm bins have mice.

In temperate areas the general pattern of fall mouse movement toward buildings is well established. The need of the house mouse for winter shelter and for winter food are behind this movement.

There is a high "visibility" of the house mouse in buildings. A competent observer can pick out 90 to 95% of all facilities in which the grain will have rodent droppings by merely observing mouse signs. Similar observations of signs as an indicator of the presence of mice in all types of facilities is probably equally valid.

Whatever the general type of facility involved the general principle of control is to reduce the mouse population. Thus sanitation in every case is an absolute first essential. It may not be physically possible for a PCO to handle this, but he could be the consultant on such a clean-up. Also in some cases consultation in planning new buildings or remodeling old may provide preventive measures as part of the construction.

In farm storage as elsewhere, the desire of the owner is to reduce mouse numbers. In some cases the old snap trap is as adequate as any control measure in achieving this.

Where large numbers of mice are present (usually indicating sanitation problems on the farm) baits have to be employed. It should be kept in mind that where large numbers of mice are to be controlled rather large amounts of bait will initially be needed. A surplus of fresh bait should always be kept in the baiting sites.

Baiting around food, (binned grain) requires additional care so baits do not contaminate the grain. Early fall baiting so poisons can be kept a distance from the grain surface is a good idea. Baiting above the grain surface should be avoided.

Of the 2 classes of baits, anti-coagulants and acute poisons, the anti-coagulants should be employed in 99% of all storage situations. Excellent rodent control programs with anti-coagulants by private farmers and by PCO's have been observed.

The key to success in mouse control is a knowledge of the animal itself. The secret of success is a careful and safe, yet diligent, application of the control methods available.

Two good publications pertaining to mouse and rat control can be obtained from the U.S. Department of Health, Education and Welfare. These are:

BJORNSON, B. F. et al, 1968. Control of domestic rats and mice. PHS Publication 563. U.S.D.H.E.W., Public Health Service, Rockville, Maryland. 20852

BROWN, R. Z. 1969. Biological factors in domestic rodent control. U.S.D.H.E.W. Public Health Service, Rockville, Maryland. 20852.

PROPOSED

Rules and Regulations Relating to Structural Pest Control; Definitions; Public Policy; Financial Responsibility; License and Registration; Fumigator and Fumigation, Record Keeping and Economic Poisons Requirements; Amending Rules and Regulations of the Minnesota Department of Agriculture, Adopting Chapter 12, AGR 233-247.

Agr 233 Definitions

(a) The following words and terms shall have the same meanings given them in Minnesota Laws 1969, Chapter 1032: "structural pest control", "structure", "approved agency", "commissioner", and "person". In addition, the following words and terms shall be construed as follows:

(b) "Pest" means all arthropods, rodents (any animal of the order Rodentia), all pest animals, bacterium, thallophytes, or any other plant or animal life, including but not limited to, noxious weeds, insects, vermin, starlings, sparrows, grackles and common pigeons.

(c) "Registered approved uses" for the purposes of the Act shall mean use of only those economic poisons and devices accepted for registration and registered by the commissioner pursuant to applicable state laws, rules and regulations and used for the control of specific pests in the manner and utilizing the method of application stipulated or recommended on the label of said registered economic poison and device.

(d) "Act" means the Minnesota Structural Pest Control Law cited as Minnesota Laws 1969, Chapter 1032.

(e) "Master license or registration". A master is a license or registration issued to any person who has demonstrated to the commissioner by written and/or oral examination that he is knowledgeable in the selection and application, and is thoroughly familiar with the toxic effects on man and animals of economic poisons and devices available for use in structural pest control.

(f) "Journeyman license or registration". A journeyman license or registration is issued to any person who has demonstrated to the commissioner by written and/or oral examination that he has a workable knowledge of economic poisons and devices and their effect on man and animals used in structural pest control but who needs supervision and direction by a person possessing a master's license or registration.

(g) "Apprentice license or registration". Apprentice is a license or registration issued by the commissioner to a person who has not qualified as a master or journeyman and is required to be under constant supervision while engaged in structural pest control by either the holder of a master or journeyman structural pest control license or registration.

- (h) "Fumigation" means the use of a fumigant in structural pest control.
- (i) "Fumigated" refers to a structure, space or place that is being or has been treated with a fumigant.
- (j) "Fumigant" means any economic poison having a vapor pressure greater than 5 mm. of mercury at 25°C. which by itself or in combination with any other substance, emits or liberates a gas, fume or vapor, which is poisonous or dangerous to life, health or is of an explosive nature.
- (k) "Fumigator" is a "master" or "journeyman" in structural pest control who has complied with the special qualification requirements of the Commissioner and has received "license" or "registration" as a "fumigator" in addition to his license or registration as a "master" or "journeyman" in pest control. The Commissioner shall cause said fumigator's identification card to carry an appropriate statement identifying the said master or journeyman also as a "fumigator" in structural pest control.
- (l) "Fumigation vault" shall mean a room or space constructed or located in a building and designed to be used to treat food or other articles with a fumigant as part of a routine procedure by industry.
- (m) "Sodium Fluoroacetate", "compound 1080", or "1080" shall mean sodium fluoroacetate and any mixture, formulation, dilution or combination thereof.
- (n) "Thallium Sulphate" shall mean thallium sulphate and any mixture, formulation, dilution or combination thereof.
- (o) "Economic poison" shall mean (1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, nematodes, bacterium, fungi, thallophytes, weeds, and other forms of plant or animal life or viruses, except viruses on or in living man or other animals, which the commissioner has declared to be a pest, and (2) any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant.
- (p) "Device" shall mean any instrument or contrivance intended for trapping, destroying, repelling, or mitigating insects or rodents or destroying, repelling, or mitigating fungi, nematodes, or such other pests as designated by the commissioner but not including equipment used for the application of economic poisons when sold separately therefrom.

Agr 234 Public Policy

The purpose of this Act and the rules and regulations promulgated thereunder is to prevent damage or injury to persons, animals, pollinating insects, fish and other aquatic life, wildlife, agricultural products and foods. Therefore it must be recognized that economic poisons and devices should be used in conjunction with:

- (a) other effective management or sanitation methods which are readily available;

(b) other effective or safer methods which are readily available; and

(c) only when their use will not produce undue hazard to non-target organisms, food or the environment.

Agr 235 Financial Responsibility

Prior to issuance or renewal of a registration or license, all applicants shall furnish proof of financial responsibility by means of a performance bond or insurance coverage for structural pest control activities performed within the state in a form approved by the Attorney General. Said bond or insurance shall be issued by a company authorized by the laws of the State of Minnesota to do business in the state and shall be not less than \$100,000 for any one person injured or killed in any one accident, and \$200,000 for any one accident for two or more persons injured or killed in any one accident, irrespective of the number of persons injured or killed, and not less than \$10,000 for damage to or destruction of property in any one accident, for the uses and purposes hereinafter set forth. Said insurance or bond shall provide for the payment of any judgment or judgments obtained against said applicant by any person or persons who shall or may suffer or sustain injuries by reason of any unlawful or negligent act or omission of the applicant, or his agents, servants or employees, in connection with any structural pest control done or effected by said applicant within the State of Minnesota, and for the payment of any judgment or judgments obtained against said applicant by the personal representative or personal representatives of any person or persons killed by reason of any unlawful or negligent act or omission of the applicant, or of his agents, servants or employees, in connection with any structural pest control done or effected by said applicant within the State of Minnesota. Said insurance or bond shall contain a condition that it cannot be cancelled after loss, and also a condition that it cannot be cancelled without ten days written notice transmitted by registered mail to the commissioner of agriculture, addressed to him at his office. In case of cancellation of said insurance or bond, the license or registration which may have been issued to the person whose insurance or bond shall be so cancelled, shall by virtue of such cancellation of said insurance or bond, become inoperative and void as of the date when such cancellation becomes effective, if the commissioner shall deem any such bond or insurance, as heretofore stated, to be unsatisfactory or insufficient, he may require said licensee or registrant to furnish substitute performance bond or insurance coverage of equal amount and similarly conditioned, within thirty days from the date of any order of the commissioner. Failure to comply with said order shall constitute adequate basis for revocation of license or registration issued hereunder.

Agr 236 License and Registration Requirements

The technical aspects of selection and application of all economic poisons and devices used by each person licensed or registered under the Act shall be the direct responsibility of the holder of a master license or registration.

To obtain a master structural pest control operator's license or registration without examination, a person must submit written affidavits stating that he is licensed by a city of the first class as a "master" in structural pest control or that he has performed structural pest control service as owner or manager in a structural pest control business operating in the State of Minnesota, for at least one year immediately prior to January 1, 1970 and applies prior to April 1, 1970.

To obtain a journeyman structural pest control operator's license or registration without examination, a person must show bona fide evidence that he is licensed by a city of the first class as a journeyman in structural pest control or that he has performed structural pest control service in the State of Minnesota for at least one year prior to January 1, 1970 and applies prior to April 1, 1970 attesting that he has a workable knowledge of economic poisons and devices and their effect on man and animals used in structural pest control.

Every person desiring to engage in or work in structural pest control business within the State of Minnesota who are not eligible for a license or registration without examination must submit to such examination as hereinafter described.

In case of revocation of a license or registration for cause the commissioner may require such licenses or registrant to pass an examination as a condition to reinstatement of such license or registration.

No structural pest control proprietorship, company, or corporation shall employ or retain as an employee any person to do structural pest control work who is not licensed or registered.

Licensed or registered persons shall carry the identification cards issued by the commissioner at all times during which they engage in structural pest control which shall properly identify the class and category said person has been licensed or registered under.

Agr 237 Fumigator Qualifications

Fumigator's license or registration requirements shall be met when a person has demonstrated to the commissioner by written, oral and/or demonstration examination that he is sufficiently knowledgeable to properly, effectively and safely use fumigants in structural pest control. Provided that any person who has used fumigants in structural pest control for at least one year immediately prior to January 1, 1970 and who applies to the commissioner, for licensure or registration as a fumigator and submits written affidavits attesting to his qualifications to properly, effectively and safely use fumigants in structural pest control and applies prior to April 1, 1970 shall be licensed or registered as a fumigator in structural pest control without examination. No person shall use fumigants in structural pest control unless he has complied with this paragraph. Nothing in this paragraph shall prohibit an apprentice in structural pest control from assisting a fumigator insofar as this is necessary to train an apprentice to prepare for the examinations required to become licensed or registered as a fumigator.

Agr 238 Requirements of Fumigation

(a) There shall be two persons, one of whom must be a competent and experienced master or journeyman fumigator present at the time of releasing the fumigant and during initial aeration of the premises. Additional pairs of licensed or registered persons, working only in pairs as in the "buddy system" may be used where necessary to perform the fumigation.

(b) Premises to be vacant. No building or enclosed space shall during the period of fumigation be occupied by human beings. The fumigator shall make a careful examination of all parts of such building or enclosed space, in order to verify that no human beings have remained therein, and that all necessary precautions have been undertaken to safeguard the lives and health of all persons occupying buildings adjoining that in which the fumigation is to be performed. In cases where the walls of any adjoining building are located within 10 feet from the building being fumigated, the fumigator shall notify in writing over his signature, all occupants of the building with windows or openings in such walls, that such windows or openings as are directly opposite or above the fumigated area of the adjoining building must remain closed, or premises vacated during the time the building is being fumigated, ventilated or aired, such notice to state in clear and concise manner the precautions to be exercised during fumigation.

(c) Openings to be sealed. All buildings or portion thereof to be fumigated shall be effectively sealed so as to maintain a concentration of fumigant lethal to the target pests during the fumigation period. All doors which provide access to the building or portion thereof being fumigated shall be locked or fastened with a lock or other mechanical device. Interior window or door fastenings shall be closed and windows not having mechanical fastenings shall be closed, secured and fastened or locked. All gas appliances in the building or portions of the building to be fumigated containing a pilot light which might be extinguished by fumigation shall be shut off during the period of fumigation.

(d) Danger signs. Prior to the fumigation the fumigator shall post warning signs on all doors or entrances to the premises to be fumigated which shall read as follows:

Skull and Cross- bones	"DANGER" Fumigating With (Name of Gas) Deadly Poison All Persons Warned to Keep Away	Skull and Cross- bones
---------------------------------	---	---------------------------------

(Name, address and telephone number of the fumigator.)

Said signs shall be printed in red ink on white cardboard, not less than 10 inches by 12 inches with letters at least 2 inches in size, except for the name, address and telephone number of the fumigator which may be written in small letters on said sign. At night said sign shall be illuminated so as to make the reading matter thereon plainly legible.

(e) Watchman. During the period the fumigation is in progress, and during a 4-hour period of ventilation immediately thereafter at least one capable, alert watchman shall remain on duty guarding the building, room or other enclosed space being fumigated.

The portion of this paragraph requiring a watchman during fumigation shall not apply to fumigation where chloropicrin is used exclusively, but in such cases the watchman or watchmen shall be on duty guarding the building, room or enclosed space for a period of at least 4 hours immediately after fumigation and during ventilation.

(f) Ventilation. After completion of the fumigation all buildings, rooms or other enclosed spaces shall be ventilated for a period of at least 18 hours. During the period of ventilation all windows and other means of ventilation shall be kept open, excepting all outside doors and entrances of dwelling houses and living quarters shall be closed and securely fastened with safety locks and further guarded by warning signs. All interior doors, closets and enclosed spaces must be kept open and all mattresses and bedding must be taken from beds and thoroughly aired. Temperature of dwelling houses and living quarters shall be elevated to a minimum of 70 degrees Fahrenheit during ventilation. Such building, room, or premises fumigated shall not be turned over for reoccupancy until pronounced safe for occupancy by the fumigator as determined by means of approved equipment for testing the presence of residual fumigant. However, in the case of ships, industrial plants, warehouses, factories, or institutions the period of ventilation shall be determined by the person in charge of the fumigation and shall extend until the premises are safe for human occupancy as determined by means of approved equipment for testing the presence of residual fumigant.

(g) All persons engaged in fumigation shall be equipped with a serviceable mask of a type approved by the U. S. Bureau of Mines with correct canister for the type of fumigant used, and shall wear such masks properly while in the enclosed space during and after liberation of the fumigant, until initial ventilation is completed. All exhausted (expired) gas mask canisters shall be destroyed.

(h) Fumigation, Exceptions:

1. Paragraphs (d), (e), (f) and (i) hereof shall not apply to the use of fumigants of the type recommended for use for food products in fumigation vaults, provided that such fumigants are applied by an experienced person.
2. Paragraphs (d), (e), (f) and (i) shall not apply to railroad boxcars or trucks fumigations provided that said fumigations are performed by experienced persons and said boxcars or trucks access doors are locked or sealed and are placarded on each door, or near thereto, with a sign not less than 10 inches by 12 inches with letters at least two inches in size, reading as follows:

DANGER
This car has been
FUMIGATED
Date.... Time Place
with
.....
(Name of Gas)

Before unloading open both doors to air it and do not enter for at least 45 minutes thereafter, or until said car is safe for human occupancy.

(i) Notice to be given. Fumigators shall notify the local police and fire departments at least 24 hours prior to the commencement of fumigation. The notification shall contain information identifying the location of the building, vessel or enclosed space to be fumigated and the date and the hour when fumigation is to commence. Such fumigation notification shall be given in writing and no fumigation shall be performed unless such notices have been duly given.

Agr 239 Refresher Course Requirement.

Every person licensed or registered as a master or journeyman in structural pest control shall attend at least one refresher program annually as approved by the commissioner as a condition for the reissuance of licenses and registrations under this act. Failure to attend such refresher program may be grounds for revocation of the license or registration.

Agr 240 Examinations.

Written and/or oral examinations for initial licensure shall be held at least once every six months and shall be prepared by the commissioner with the advice of the Minnesota Structural Pest Control Advisory Committee. Upon request the nature and scope of the information required shall be made available to applicants at least 30 days in advance of the examination. Emphasis throughout examination procedures shall be on the safe use of materials, knowledge of the effects and purpose of materials used, and ability to protect the user and the public.

Agr 241 Sodium Fluoroacetate - 1080, Use Restricted.

(a) All "1080" shall be kept in the custody and used under the direct supervision of a master in structural pest control and when held in storage shall be kept in a locked cabinet or vault. Containers and other equipment for weighing, measuring or mixing "1080" shall be labeled "POISON" and kept in a locked cabinet or vault.

(b) The use of soft drink bottles or other food type containers for storing products containing "1080" is prohibited.

(c) The use of "1080" in dwellings is prohibited.

(d) The use of "1080" is prohibited, except upon special written authorization from the commissioners.

Agr 242 Economic Poisons Labeling Requirements.

Every container of an economic poison used in structural pest control when removed from original container shall be clearly and legibly labeled with the name of the active ingredient or ingredients. Provided that this requirement shall not apply to applicative devices used by the structural pest control operator.

Agr 243 Thallium Sulphate

shall be used only in accordance with "registered approved uses" as defined herein and in locked, secured rodent bait boxes.

Agr 244 Economic Poisons

used in structural pest control for the control of rodents shall be placed in containers designed and located so as to prevent accidental upset.

Agr 245 Records, Requirements.

(a) Each registered or licensed person engaged in structural pest control shall maintain a written, legible record of all structural pest control activities conducted by him or by his employees. Said record shall include the following information relating to the delivery or application of structural pest control services, economic poisons or devices:

1. The name of the person for whom said activities was conducted, and
2. Accurate information identifying the location, building, vehicle or place serviced, and
3. The year, month, day and the approximate time of service, except for fumigation, economic poisons and devices applied, using the common name if there be one or the generic name of the economic poisons utilized and method of application, and
4. If fumigation, the year, month, day, actual time of day, the exposure time and the temperature of the said place being fumigated.

(b) Said records shall be retained and available for inspection for a period not less than 2 years after the said servīæ has been rendered.

Agr 246 Handling of Economic Poisons Containers

(a) No person shall discard or store any economic poisons or containers therefrom in such a manner as to cause injury to humans, agricultural products, and food, livestock, wildlife, pollinating insects or so as to pollute any waterway in a manner harmful to wildlife and fish.

(b) Except when returned to original manufacturer or distributor or his agent all empty economic poison containers shall be disposed of as follows:

1. Shall be rendered non-reuseable, and
2. Be buried in a city or community operated sanitary landfill, or

3. If no city or community operated sanitary landfill is available; if metal or glass container, bury metal containers and glass containers (break glass) and bury at least 18 inches deep in an isolated location at a safe distance from all potable water supplies and all waterways, or if fiber or paper container, burn the empty container completely (avoid smoke and fumes of fire).

Agr 247 Additional Restrictions and Precautions on the Use of Economic Poisons and Devices

In addition to the other requirements provided for in Agr 233 through 246, all economic poisons and devices used in structural pest control shall be applied, handled, stored in accordance with:

- (a) Registered approved uses, and
- (b) The applicable provisions of Minnesota Statutes 1967, Chapters 18, 31, 32, 34, as amended, and the rules and regulations promulgated thereunder, and
- (c) The adulteration requirements contained in the Federal Food, Drug and Cosmetic Act (June 25, 1938, c 675, 52 Stat. 1040-1059, 21 USC, Sections 301-392), as amended, and the rules and regulations adopted thereunder.

Provided that compliance with the recommendations of the most recent publication of the University of Minnesota and/or its Department of Entomology, Fisheries and Wildlife or Agricultural Extension Service shall be prima facie evidence of acceptable use of the said economic poison and device.

Agr 248-252 Reserved for future use.

PROBLEMS FACED BY PCOs

Francis J. Humphreys
Pest Control Operator
Falcon Exterminating Company, St. Paul

Outline (for 5 minutes of class)

1. Problem of odor resulting from and during the use of some insecticide sprays used in roach control.
 - a. Poor timing—results in real or fancied complaints.
 - b. Lack of proper mixture.
 - c. Customer relations.
2. Discussion by PCOs to hear how they would handle odor complaints.
 - a. PCOs may use:
 - a1. Less concentrate in mixture
 - a2. Humor to workers, clerks, etc.
 - a3. Explain to owner or customer time limit on resulting odor.
Try 8 minutes
3. Closing statement:

After the PCO finds that he has the job in good shape, he will be prudent in cutting down on the concentrates in mixing his sprays.

PUBLIC RELATIONS

Gary H. VandeLinde
Inver Grove Hts, Minnesota

Outline
(for 5 minutes of class)

1. Who are we dealing with
 - a. Public at large
 - b. Private business
2. Image of the exterminating business to the world.
3. My subject knowledge
 - a. Training
 - b. Practical experience
4. Displacement of image stereotype
 - a. True service business to the public
 - b. Allaying fears of customers

NUISANCE BEES AND WASPS

Basil Furgala
Associate Professor
Department of Entomology, Fisheries, and Wildlife
University of Minnesota

Honey bees, as well as the various species of bumble bees and wasps, are beneficial insects and deserve our protection. Occasionally these insects will nest in protected areas on or extremely close to residential dwellings thereby becoming a hazard and/or nuisance to the general public. When this occurs the nests must be destroyed and removed.

Initial contact with a potential client must not be a brief acknowledgement of the problem and a commitment to apply remedial measures. Avoid unnecessary expenditure of time and effort as well as possible serious misunderstanding between yourself and your client. Try to identify the insect; determine whether a hazard or nuisance exists. If remedial action is indicated, reassure your client and explain why your recommendation or your control measure will prove reliable and effective. Remember, many people confuse honey bees with wasps. They visualize tens of thousands of free-flying, sting-equipped bees, when, in fact fewer than 100 wasps are the culprits.

The methods used to eradicate established nests have not changed over the past few years. An emulsion or suspension spray containing 5% chlordane is effective on hanging nests with an entrance on a vertical surface. To destroy nests in the ground with entrances on a horizontal surface, a 5% chlordane dust is easier to apply, although a spray is just as effective. Honey bees nesting in the walls of a home offer a unique challenge.

In all cases, efficient, reliable control will depend on your knowledge of life history, foraging behavior, and nesting habits of the target species; concern for your personal protection during treatment.

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