

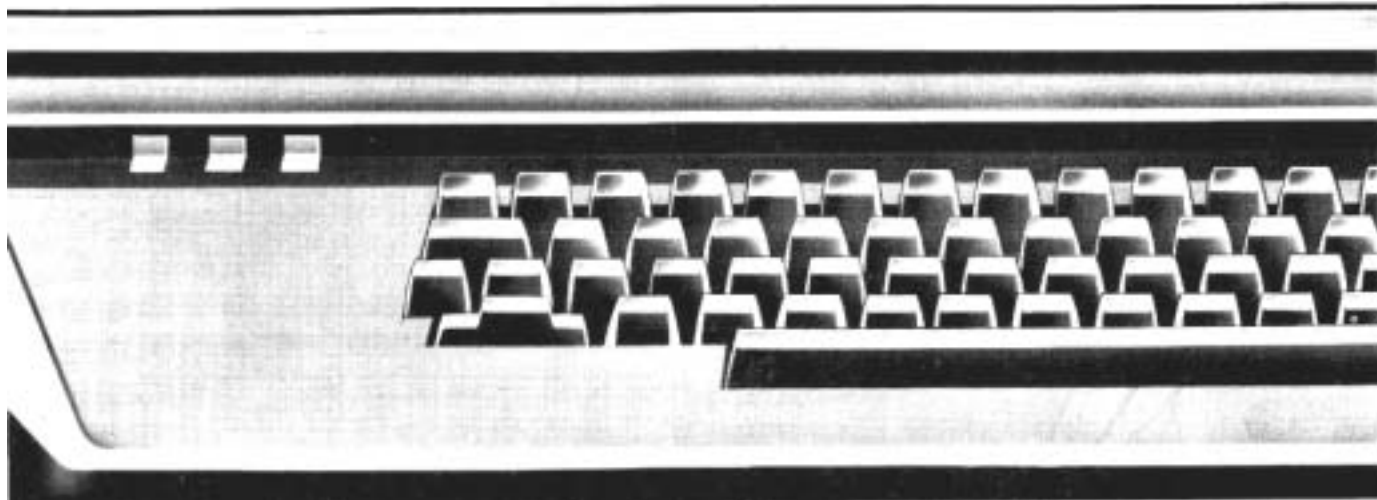
New York's Food and Life Sciences Bulletin

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CHEM-NEWS

An On-Line Pesticide Information Program

W. G. Smith, R. I Carruthers, and J. Barnard



INTRODUCTION

Computerization of pesticide information is rapidly becoming a necessity as regulatory agencies expand their activities through enforcement, monitoring, and certification of pesticide applicators. Educational institutions responsible for providing pesticide information and pesticide applicator training for certification must also expand their capabilities for immediate updating and faster retrieval. Two programs at Cornell University, the Chemicals-Pesticides Program and the Pesticide Impact Assessment Program (PIAP), are presently involved in developing, on-line pesticide information for researchers, extension personnel, and regulatory agencies as well as for those using pesticides.

The Chemicals-Pesticides Program is an informational and educational extension program concerned with protecting the applicator, the consumer, and the environment from pesticide hazards. Since 1974 the major emphasis of this program has been directed toward providing pesticide applicator training materials for certification. The program also maintains extensive files on individual chemicals and serves as a reference source for researchers studying or needing pesticide information.

The New York State Pesticide Impact Assessment Program (PIAP) is part of the National Agricultural Pesticide Impact Assessment Program (NAPIAP) serving the USDA/Land Grant System by participating in the Environmental Protection Agency (EPA) and individual state pesticide regulatory processes. Its primary functions are: (1) to assemble benefit/risk information for pesticides, (2) to assist with adjustments and alternatives in pest control operations when necessitated by regulatory action, (3) to conduct an educational and information program on the status and impact of Rebuttable Presumption Against Registration (RPAR) actions, and (4) to assist in administering and implementing timely research to support the Pesticide Impact Assessment Program. In addition, NAPIAP has been a primary source of general pest and pesticide information using a variety of formats including computerized information delivery.

The Chemicals-Pesticides Program and the Pesticide Impact Assessment Program first became involved in computerizing pesticide information through a grant to establish a Northeast Pesticide Information Management System (NEPIMS). The NEPIMS was to be a complete pesticide information system utilizing product registration information from each state within the northeast. Subsequent piloting and implementation of the National Pesticide Information Retrieval System (NPIRS) at Purdue University has altered the operational requirements of NEPIMS to one used primarily for New York State pesticide product registrations, manufacturers (registrants), and active ingredients. This New York State Pesticide Information Management System (PIMS) is currently under modification to serve as an intermediate, on-line pesticide information source for the university and the New York Department of Environmental Conservation's Bureau of Pesticide Management.

Through an extension informational network called SCAMP developed on a Prime 400 computer at Cornell University's New York State Agricultural Experiment Station, Geneva, an on-line pesticide information program, CHEM-NEWS, has been developed. Direct access by Cooperative Extension staff, college research specialists, state and federal personnel, agricultural producers, pest control specialists, and others interested in pesticide information is now possible.

Programs within SCAMP are interactive, and pesticide information can be sent and received in a conversational manner. The program structure also allows for subject matter to be easily updated when needed. Access to CHEM-NEWS or other SCAMP programs is accomplished through telephone lines using a multiplexed leased-line for campus personnel, or a toll-free number for in-state users.

CHEM-NEWS SUBJECT MATTER

Once the user has accessed SCAMP through proper dial-up procedures (entry of a special account number and password), CHEM-NEWS can then be entered through the LIBRARY program. The dialogue is as follows:

SCAMP Information Network

What would you like to do next?

=>library

Information in LIBRARY has been prepared by various authors for cooperative extension, and may be reproduced and disseminated if credit is given to the university and the author.

ENTER SUBJECT, HELP, OR END. =

>Chem-News

CHEM-NEWS
by
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Dept. of Entomology
Cornell University

CHEM-NEWS is a pesticide information program that has been developed to assist Cooperative Extension Agents, Specialists, and others needing information about pesticides. For more information regarding pesticides, please contact the Chemicals-Pesticides Program, Department of Entomology, Comstock Hall, Cornell University, Ithaca, New York 14853 (607-256-3283).

The following information can be accessed by typing the NUMBER preceding the subject you wish to see.

MAIN SUBJECT MENU

No.	Subject	Description
1	AQUATIC	Pesticide registrations and fact sheets
2	FIELD CROPS	Pesticide registrations and fact sheets
3	FRUIT	Pesticide registrations and fact sheets
4	GENERAL INFORMATION	Pesticide information (fact sheets)
5	HERBICIDE PROFILES	Technical information for herbicides
6	INSECTICIDE PROFILES	Technical information for insecticides
7	LIVESTOCK	Pesticide registrations and fact sheets
8	ORNAMENT S TURF	Pesticide registrations and fact sheets
9	PESTICIDE REPORT	Monthly newsletter
10	RODENTICIDES	Technical information for rodenticides
11	SELF-STUDY	Practice exams and definitions
12	STRUCTURAL	Pesticide registrations and fact sheets
13	VERTEBRATES	Pesticide registrations and fact sheets
14	VEGETABLES	Pesticide registrations and fact sheets

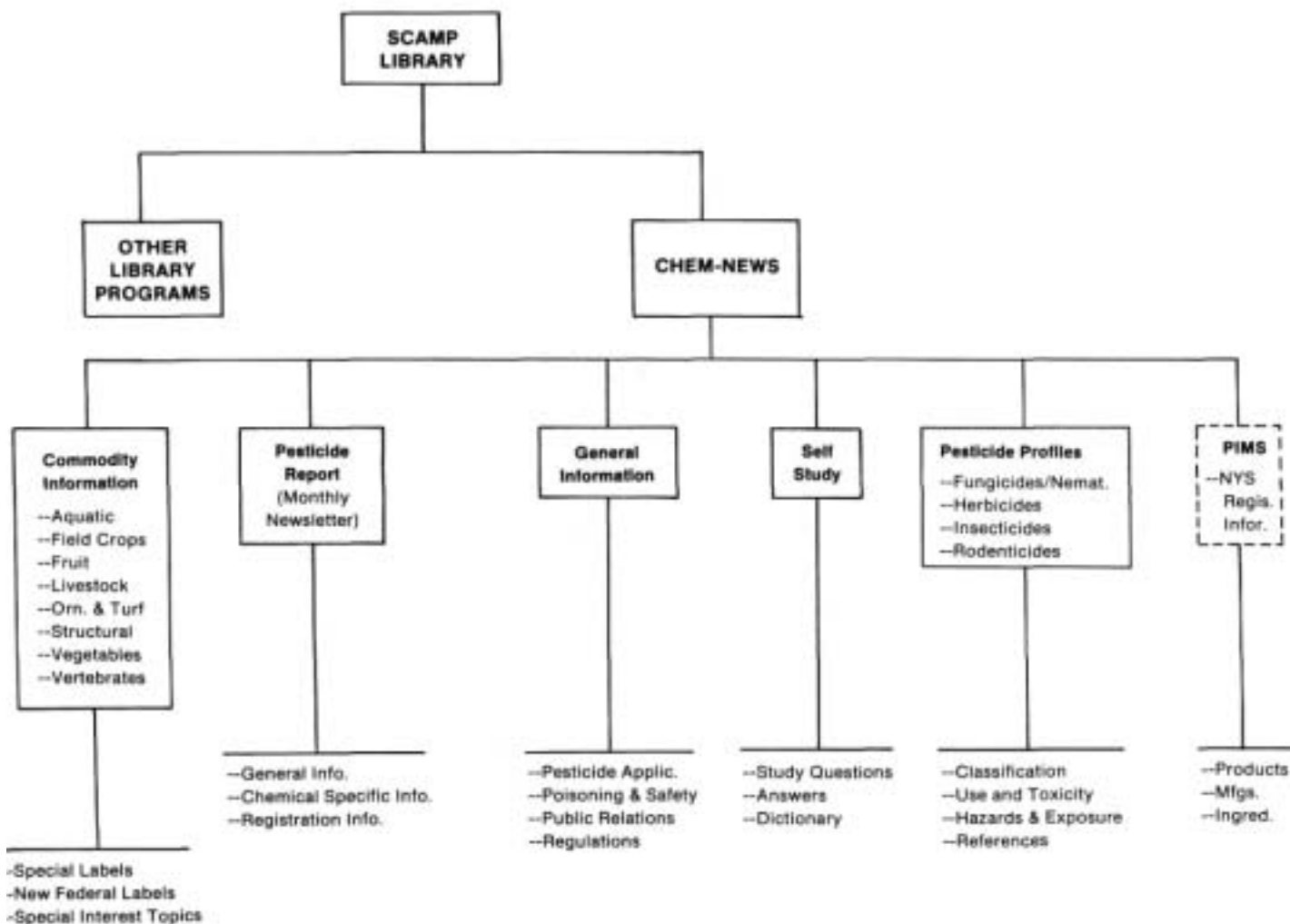
Q.O ENTER SUBJECT NUMBER, STOP, OR END =>

Users can access pesticide information by entering the number preceding the subject matter they wish to view after the prompt, Q.O ENTER SUBJECT NUMBER, STOP, OR END. The user may leave CHEM-NEWS by typing END or STOP. STOP will return the user to the original SCAMP prompt, 'What would you like to do next?' The user can then proceed to another SCAMP program or type END and terminate a session.

The present format for each commodity-AQUATIC, FIELD CROPS, FRUIT, LIVESTOCK, ORNAMENT & TURF, STRUCTURAL, VERTEBRATES, and VEGETABLES-is similar, but information is specific to that subject. These subjects, while identified with special pesticide registrations (Section 18, SLN 24[c], Crisis Exemption), will be expanded in the future to include more specific topics such as private and commercial certification information (See Commodity Areas below).

Several new subjects-GENERAL INFORMATION, SELF-STUDY, PESTICIDE REPORT, HERBICIDE PROFILES, INSECTICIDE PROFILES, and RODENTICIDE PROFILES-were added in 1983. Figure 1 shows the different subjects contained within CHEM-NEWS, including PIMS which will be accessible after further modification.

Figure 1.—Pesticide subject matter accessible in CHEM-NEWS through SCAMP.



Commodity Areas (Aquatic, Field Crops, Fruit, Livestock, Ornament & Turf, Structural, Vegetables, and Vertebrates)

Users wishing to see information specific to one of the above commodity areas can type the appropriate number from the main subject menu. For example, entering the number 14 displays the following information for vegetables:

..0 14

VEGETABLES

Special New York State Registrations

The following pesticide registration exemptions (Section 18), Special Local Need (SLN-24 c) registrations, and Crisis Exemptions have been issued to New York State for 1982-3. Included here are the most

recent labels that may or may not appear in the 'Redbook' or Cornell Recommends.

To see a complete copy or summary of the following, type the NUMBER preceding the label you wish to review.

IMPORTANT NOTICE

ALDICARB HAS BEEN RESTRICTED FOR USE IN UPSTATE NY

ENTER NUMBER 34 TO SEE THE FULL RESTRICTION

Crisis exemptions issued during 1982

- 13 RIDOMIL 2E (POTATOES)
- 14 RIDOMIL 2E (LETTUCE)
- 15 PARAQUAT (DRY BEANS)

NYS section 18 labels for 1983

- 16 GUTHION (CARROTS)
- 35 GOAL (ONIONS)
- 37 CAPTAFOL (PEPPERS)

NYS section 18 labels for 1982

- 17 ROVRAL (LETTUCE)
- 18 GUTHION (CARROTS)
- 19 RIDOMIL (POTATOES)
- 20 RIDOMIL (HEAD LETTUCE)
- 21 CAPTAFOL (PEPPERS)
- 22 PERMETHRIN (MUSHROOM HOUSES)

NYS SLN 24 (c) labels for 1983

- 33 DYFONATE (ONIONS IN ORANGE CO.)
- 36 KERB 50W (LETTUCE WEED CONTROL)

NYS SLN 24 (c) labels for 1982

- 23 EVIK 80W (POTATOES)
- 24 FURADAN 10G (SWEET CORN)
- 25 LORSBAN 4E (ONIONS)
- 26 LORSBAN 15G (ONIONS)
- 27 FURADAN 4F (SWEET CORN)
- 28 BENLATE (BRASSICA CROPS)

New Federal Registrations For 1982-3

The following pesticides have received a federal (EPA) registration for controlling pests of vegetable crops. For a complete copy of the labels or for more information, please contact the Chemicals-Pesticides Program.

To see a summary of the following, type the NUMBER preceding the label.

- | | |
|------------------------------------|-------------------------------|
| 1 PYDRIN (1982) | 11 RIDOMIL MZ 58 (1983) |
| 2 LORSBAN 4E AND 15G (SWEET | 12 DITHANE FZ (ONIONS (1983) |
| 3 PROXOL 80SP (BEANS) (1982) | 31 PARAQUAT (POTATOES) (1983) |
| 4 PARATHION (BEANS) (1982) | 32 PYDRIN (CUKES, MELONS, |
| 5 BRAVO 500 (DRY BEANS) (1982) | POTATOES) (1983) |
| 6 AMBUSH (1982) | |
| 7 VYDATE (1982) | |
| 8 POUNCE (1982) | |
| 9 APRON 25W, SEED TREATMENT (1983) | |
| 10 RIDOMIL 2E (TOMATOES) (1983) | |

Topics of Special Interest

The following information (subject matter) for vegetables can be obtained by typing the NUMBER preceding the subject you wish to review. To obtain information of general interest, you should look at the GENERAL INFORMATION section (subject number 4) of CHEM-NEWS.

29 RESIDUES
30 SANITIZING CHEMICALS
34 ALDICARB (TEMIK) RESTRICTED FOR UPSTATE NY (5/11/83)
Q.I ENTER NUMBER, END OR STOP.

To see a Section 18 label for captafol on peppers, the user would enter the number 37 from the keyboard and the following would be displayed:

= >37
. .1 37

The Environmental Protection Agency hereby grants a specific exemption under the provisions of Section 18 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended, to the New York Department of Environmental Conservation to use captafol on peppers for control of pepper blight and phytophthora blight (*Phytophthora capsici*) throughout New York. This specific exemption is subject to the following restrictions and conditions:

1. The New York Department of Environmental Conservation is responsible for ensuring that all provisions of this specific exemption are met. It is also responsible for providing information in accordance with 40 CFR 166.5. This information must be submitted to EPA Headquarters through the EPA Regional Office.
 2. Use of the product, Difolatan 4F (EPA Reg. No. 239-2211) manufactured by Chevron Chemical Co., is authorized. All applicable directions, restrictions, and precautions on the EPA-registered product label must be followed.
 3. Captafol may be applied at a rate of 1.5 pounds active ingredient per acre.
 4. A maximum of five (5) applications may be made.
 5. A maximum of 2,000 acres may be treated.
 6. A preharvest interval of 4 days shall be observed.
 7. Applications will be made using aerial or ground equipment on a 10-day schedule.
 8. A minimum spray mixture volume of 5 gallons of water per acre will be used when applications are made by aerial equipment.
 9. Application will not begin until conditions are favorable for the disease to become established.
 10. Treatment of peppers according to the above provisions should not result in residues of captafol in excess of 10 ppm. Peppers with residues of captafol which do not exceed this level may enter interstate commerce. The Food and Drug Administration, DHHS, has been advised of this action.
- 1 1. The EPA must be immediately informed of any adverse effects resulting from the use of captafol in connection with this exemption.

12. A final report summarizing the results of this program must be submitted by April 1, 1984.
13. This specific exemption expires on November 30, 1983.
14. Any further correspondence in connection with this exemption should refer to file Symbol 83-NY-03.

Q.I ENTER NUMBER, END OR STOP.

Entering number 36 from the Vegetable commodity menu will display the SLN label for Kerb 50W:

= >36

LABEL: Kerb 50W Herbicide
REGISTRANT: Rohm and Haas Company
EPA REG. NO./EPA SLN NO.: 707-159-AA/ NY-830003
EFFECTIVE DATE: May 20, 1983
USE: Weed control on direct seeded lettuce on muck soils.

Dosages and weed controlled: For the control of susceptible weed species. Kerb 50W is recommended at the rate of 8 to 12 pounds (4 to 6 pounds active) per acre. Kerb 50W at the rate of 8 pounds per acre is effective for the control of common purslane in muck soils.

Kerb 50W at the rate of 12 pounds per acre will generally provide preemergence control of the following weeds when applied according to label directions:

Barnyardgrass
 Common purslane
 Common mustard
 Lambsquarters
 Shepherdspurse

Kerb 50W at the rate of 1 2 pounds per acre will provide suppression to both prostrate pigweed and redroot pigweed.

Dosage recommendations listed on this label are for surface broadcast applications. For banded treatments, the amount of Kerb 50W used per acre should be reduced according to the following formula:

$$\frac{\text{Band width(in inches)} \quad \text{rate /A}}{\text{Row widthdn inches)} \quad \text{band}} \times \text{broadcast} = \text{amount needed/A/}$$

Applications should be made immediately after planting, preemergent to the lettuce and the weeds. The Kerb application should be followed promptly with an initial irrigation of 1 to 1 1/2 inches by overhead sprinkler equipment in order to move Kerb into the root zone of the germinating weeds.

Specific Use Restrictions:

Do not apply more than one (1) application of Kerb to each crop of lettuce. Do not apply Kerb to lettuce varieties which will be harvested less than 55 days after Kerb treatment.

Do not plant back crops other than lettuce for a period of 18 months following application of Kerb 50W.

This labeling must be in the possession of the user at the time of application. For a complete copy of this SLN label, please contact the Chemicals-Pesticides Program.

Q.1 ENTER NUMBER, END OR STOP. =
> end

General Information

Fact Sheets prepared by university personnel working with pesticides are placed here and categorized by subject matter. Information is not specific to one subject, but has relevance to several commodity and non-commodity areas. Permission is obtained from authors to have their publications placed here and credit is acknowledged.

On-line information such as this provides not only ease of access, but immediate updating, revision, and storage capabilities that are not possible with printed matter.

To see the GENERAL INFORMATION below, the user should enter number 4 from the main subject menu.

. .0 4

GENERAL INFORMATION

Listed below are fact sheets pertaining to pesticide information of general interest. Type the NUMBER preceding the fact sheet you wish to review.

PESTICIDE APPLICATION

1 PESTICIDE COMPATIBILITY	4 AVITROL
5 PH	6 SHELF-LIFE
22 TRIAZINE RESISTANCE	9 SPRAYER CLEANING
12 CONTROLLED DROPLET APPLIC.	13 SPRAYER NOZZLES
20 BACK-SIPHON	21 SPRAYER CALIBRATION
23 CHEMICAL FREEZING	24 SHADE TREE EQUIP.
28 CONVERSION TABLES	

POISONING AND SAFETY

8 CHOLINESTERASE	14 AGR CHEMICAL FIRES
15 PESTICIDE LAUNDRY	16 POISON TREATMENTS
17 TAKE-COVER	

PUBLIC RELATIONS

11 GROUND WATER	10 SANITIZING CHEMICALS-AGR
18 SEVIN CONTROVERSY	27 TERMITICIDES

REGULATIONS

2 LV-ULV	3 PCB'S
19 TOLERANCES	7 TANK MIXING
25 LABEL AMENDMENTS (SAFETY STATEMENTS)	26 LABEL AMENDMENTS (STORAGE AND DISPOSAL)

Q.9 ENTER NUMBER, END, OR STOP.
= >end

Pesticide Report

The Pesticide Report is a monthly newsletter, primarily intended for Cornell specialists working with pesticides and making pesticide recommendations, but accessible to anyone using SCAMP and interested in pesticide information. Information is summarized from the Federal Register and other publications containing current pesticide subject matter. To access information from the PESTICIDE REPORT, the user should enter the number 9 from the main subject menu.

. .0 9

July 25, 1983

TO: Contributors to the 1983 New York State Pesticide Recommendations (Redbook), Cornell Recommends and those Interested in Pesticide Information

FROM: William G. Smith, Extension Associate

RE: Pesticide Report, June 1983

The following pesticide information has been compiled from the FEDERAL REGISTER and other information sources for your reference and is our way of keeping you better informed of recent pesticide changes that take place.

Information appears according to the date it was published and, therefore the same material may appear more than once. TYPE THE INDEX NUMBER OF THE SUBJECT YOU WISH TO SEE.

INDEX

Fungicides/Nematicides	1
General Information.....	2
Growth Regulator/Herbicide	3
Insecticide/Miticide	4
Pesticide Petitions.....	5
Section 18 and SLN [24(c)] Labels for New York.....	6

For further information, please contact the Chemicals-Pesticides Program.

Q.10 ENTER NUMBER, END, OR STOP.
= > end

Self-Study

The pesticide applicator training program is a nationwide education effort; it is estimated that over 35,000 private and commercial pesticide applicators have participated in training and certification testing in New York State. Cooperative Extension is responsible for training private applicators using restricted pesticides and providing them with appropriate training materials for passing a certification exam. Commercial certification training is provided by university specialists and industry personnel, or applicators may choose to study from the various commercial category manuals on their own (self-study).

The certification training program thus far has been conducted using conventional methods (organized training meetings, showing films and slide/tape modules, and distributing printed matter). Self-study, with on-line practice exams, study questions, and pesticide terminology will compliment present training and teaching methods. Questions will be developed from certification manuals as well as from fact sheets contained within the GENERAL INFORMATION section of CHEM-NEWS.

Practice exams and study questions from SELF-STUDY can be accessed and distributed at grower meetings or included in newsletters from Cooperative Extension agents to their membership. Industry and Vo-Ag teachers can do the same by accessing and distributing to members and students respectively.

To see the SELF-STUDY menu, the user should enter number 11 from the main subject menu.

..011

SELF-STUDY

SELF-STUDY is designed to provide an auto-tutorial approach to pesticide and agricultural chemical information for certified pesticide applicators. Cooperative Extension Agents and Specialists, and others interested in pesticide information. The Pesticide Applicator Training Manual (Core Manual), the various Commercial Category Manuals used for preparing pesticide applicators for certification, and fact sheets found in GENERAL INFORMATION (number 4) of CHEM-NEWS will serve as reference sources. Type the NUMBER preceding the item you wish to access.

ITEMS ACCESSIBLE

- 1 CORE QUESTIONS
- 2 ANSWERS (CORE QUESTIONS)
- 3 DEFINITIONS

Q.8 ENTER NUMBER, END, OR STOP.

An example of the type of questions that can be accessible is given below when Number 1 is entered from the SELF-STUDY menu:

=>1

..8 1

PRACTICE CORE EXAMINATION

1. Pesticides that can build up in the bodies of organisms are called: _____
 - a. body builders
 - b. accumulative
 - c. additives
 - d. generators
 2. Empty pesticide containers should be rinsed with the same liquid that your tank is being filled with at least:
 - a. 12 times
 - b. once
 - c. 9 times
 - d. 3 times
 3. If the pesticide deposit remains on the surface for a period of time, it is called:
 - a. tolerance
 - b. lingering pesticide
 - c. residue
 - d. registration
 4. You should always avoid using persistent pesticides.
 - a. true
 - b. false
-

To obtain answers to a given exam, CORE QUESTIONS in this instance, the user would enter number 2 from the keyboard invoking the second program on the SELF-STUDY menu.

ANSWERS TO PRACTICE EXAM

- 1 . c. Accumulative. Emphasize that accumulation of pesticide within the body of the organism can be the important environmental problem, not persistence without accumulation.
 2. d. 3 times. A triple-rinse with 30 second drainage after each rinse has been shown to remove more than 99% of the pesticide. After triple-rinsing, pesticide containers are not usually subject to laws governing hazardous materials.
 3. c. Residue.
 4. b. False. Persistence without accumulation is not necessarily bad; in fact it is often desirable, although special precautions may be necessary. Atrazine is persistent, but does not build up in the cow's body or in the milk. However, at higher recommended dosages, sensitive crops cannot be planted on the same ground the following year. This persistence leads to excellent weed control
-

Definitions associated with pesticide use are accessible from the SELF-STUDY menu by entering the number 3.

DEFINITIONS

- AAPCO. Association of American Pesticide Control Officials, Inc.
- Abcission. Process by which a leaf or other part is separated from the plant.
- Absorption. Process by which pesticides are taken into tissues, namely plants, by roots or foliage (stomata, cuticle, etc.).
- Acaricide (miticide). An agent that destroys mites and ticks.
- Acetylcholine (ACh). Chemical transmitter of nerve and nerve-muscle impulses in animals.
-

Pesticide Profiles (Fungicide, Herbicide, Insecticide, and Rodenticide)

"Pesticide Profiles" are being developed that will contain characteristics and properties for many of the pesticides registered and used in New York State. Information will include chemical classification, crop/site use (including restrictions and limitations), toxicity, environmental hazards, exposure data, and references. The user can select a given chemical from one of the profile menus.

An example of a Rodenticide Profile for Thiram is given below.

THIRAM

Pesticide: Thiram (Gustafson 42-S)

Basic Producer: Pennwalt, Hopkins, Gustafson, E.I. duPont & Co.

Chemical Classification: Organic/animal repellent

Pest(s) Controlled: Rabbits, mice, deer, chipmunks, moles, squirrels

Oral LD50 (mg/kg): Ranges from 375-855 (Martin and Worthing 1974)

Formulation: 1.75 and 4 lb per gallon. Dusts.

Supplemental Information: Not to be applied on plant parts to be used for food or feed. The solubility in water at room temperature is about 30 ppm (Martin and Worthing 1974). It is- slightly soluble in ethanol and diethyl ether: soluble in acetone and chloroform (Martin and Worthing 1974). Thiram may cause skin irritation (Thompson 1981). The feeding of hens at 35 ppm of the diet caused a severe drop in egg production (Martin and Worthing 1974).

Chemical and Physical Properties (Mackison, Stricoff, and Partridge (1981):

1. Molecular weight: 240
2. Boiling point (760 mm Hg): Decomposes
3. Specific gravity (water =1): 1.40
4. Melting point: 140 C (284 F)
5. Solubility in water, g/100 g water at 20 C (68 F): insoluble. Note: See above under supplemental information.

HEALTH HAZARD INFORMATION

OSHA Standard: Average 8 hour exposure - 5 mg/cubic meter.

NIOSH Recommended Limit: None established.

ACGIH Recommended Limit: Average 8 hour exposure - 5 mg/cubic meter.

Short Term Exposure: Note: Can cause extreme illness when exposure is combined with alcohol ingestion.

Inhalation: No information on human exposure is available. Animal studies indicate that irritation of the nose and throat may occur at levels above 5 mg/cubic meter.

Skin: Exposure to spray containing 45% thiram resulted in irritation and skin sensitization.

Eyes: May cause irritation, tearing and sensitivity to light.

Ingestion: No information available on human exposure. In animal studies, 38 ppm in food caused nausea, vomiting, diarrhea, hyperexcitability, weakness and loss of muscle control. Death may occur from ingestion of approximately one teaspoonful.

Long Term Exposure: Occupational exposures to 0.03 mg/cubic meter over a 5 year period has caused mild irritation of the nose and throat. Prolonged contact has caused eye irritation, tearing, increased sensitivity to light, reduced night vision and blurred vision. Thiram has caused birth defects in laboratory animals. Whether it has this effect in humans is not known. Thiram was teratogenic (skeletal malformation) in hamsters given a single dose of 250 mg/kg during the period of organogenesis and in mice given oral doses of 5 to 30 mg/animal daily between days 6 and 17 of pregnancy. In exposed humans, sensitization dermatitis in the form of eczema has occurred on the hands, forearm and feet (Mackison, Stricoff, and Partridge 1981).

EMERGENCY AND FIRST AID INSTRUCTIONS

Inhalation: Move victim to fresh air. Clear away any dust near the nose or mouth. Give artificial respiration or oxygen as required. Seek medical attention, if necessary.

Skin: Remove contaminated clothing. Wash affected area with soap and water for at least 5 minutes. Seek medical attention, if necessary.

Eyes: Wash with water for at least 25 minutes. Seek medical attention.

Effects of overexposure: Thiram may cause irritation of the eyes, nose, throat, and skin. It may cause an allergic skin rash. Thiram is thought to have similar effects as antabuse which include nausea, vomiting, diarrhea, and loss of appetite. After ingestion of alcohol, individuals taking antabuse may experience skin redness, hives, itching, pulsating headache, flushing, sweating, nausea, vomiting, diarrhea, weakness, dizziness, and difficulty in breathing (Mackison, Stricoff, and Partridge 1981).

Note to Physician: Thiram is a homologue of Antabuse. Similar antagonistic effects with alcohol may occur. When thiram or liquids containing thiram have been swallowed and the person is conscious, give the person large quantities of water immediately. After the water has been swallowed, try to get the person to vomit by touching the back of the throat with a finger. Do not make an unconscious person vomit. Get medical attention immediately (Mackison, Stricoff, and Partridge 1981).

FIRE AND EXPLOSION INFORMATION

General: Not flammable or explosive. Flash Point:

89 C (192 F) (closed cup).

REACTIVITY

Conditions to Avoid: High temperature will cause break down to form nitrogen oxides and sulfur oxides.

Materials to Avoid: Strong oxidizing agents (permanganate, dichromate), strong acids and easily oxidized materials. Contact with these may cause formation of toxic gases such as hydrogen sulfide.

PROTECTIVE MEASURES

Storage and Handling: Store in a cool place away from compounds listed above.

Engineering Controls: Use with adequate ventilation or in a closed process. Sinks, showers and eyewash stations should be readily available. When used outdoors, adequate emergency water should be available.

Protective Clothing: (Should not be substituted for proper handling and engineering controls): Wear rubber gloves, chemical goggles and overalls that fit closely at the wrists and neck.

Protective Equipment: For levels up to 50 mg/cubic meter use a supplied-air respirator, a self-contained breathing apparatus or a chemical cartridge respirator with pesticide cartridges. For up to 250 mg/cubic meter use one of the three mentioned above with a full facepiece. For up to 1500 mg/cubic meter use a powered air-purifying respirator with a high efficiency filter, a

supplied-air respirator in pressure demand positive pressure or continuous flow mode or a powered air-purifying respirator with a pesticide filter and full facepiece. For escape from a contaminated area use a dust mask and mist filter or a self-contained breathing apparatus.

PROCEDURES FOR SPILLS AND LEAKS

Get all workers out of the spill area. Put on proper protective equipment and clothing. Cover the spill with a weak solution of calcium hypochlorite (up to 15%). Transfer to suitable container. For final disposal contact your regional office of the New York State Department of Environmental Conservation.

REFERENCES

- Characteristics of common rodenticides. 1959. U.S. Dept. of the Interior, Bur. of Sport Fisheries and Wildlife. Wildlife Leaflet 337.
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- Mackison, F.W., R. S. Stricoff and L.J. Partridge. 1981. Occupational health guidelines for chemical hazards. U.S. Dept. of Health and Human Services (DHHS, NIOSH), Publ. No. 81-123.
- Martin, H. and C.R. Worthing. 1974. Pesticide manual. British Crop Protection Council.
- Thompson, W.T. 1978. Agricultural chemicals: book III - fumigants, growth regulators, repellents, and rodenticides. Thompson Publ., Fresno, CA.
- Q.I 2 ENTER NUMBER, END, OR STOP. =
> end
-

PERSPECTIVE

CHEM-NEWS is a pesticide information program which can serve those needing pesticide information in New York State as well as the northeast. Pesticide information developed from numerous sources can be placed in CHEM-NEWS and accessed by anyone possessing a valid SCAMP account number and password.

The electronic mail program within SCAMP enables users to communicate directly through their terminals with the Chemicals-Pesticides Program (Fig. 2). Whereas a telephone call or a letter goes to a specific point, electronic mail communicates directly with a specific person whatever his or her present location. Individuals within the Chemicals-Pesticides Program can receive inquiries through SCAMP and send information back to the user making the initial inquiry. The information will then be displayed when the user accesses SCAMP again.

The above method of communication is desirable for users needing pesticide information that CHEM-NEWS does not supply such as that found through the National Pesticide Information Retrieval System (NPIRS). NPIRS is a computer-base data resource that contains information describing key characteristics of pesticide products registered by the U. S. Environmental Protection Agency and participating state regulatory agencies.

For each EPA-registered product, the NPIRS data base provides the following:

- Product name(s)
- Registrant name and address
- EPA registrant number
- Type of formulation
- Signal word
- Type(s) of pesticide activity
- Name and percentage of active ingredient(s)

Site(s) and crop(s) Pest(s) for each site
 or crop State-specific registration
 information Tolerances (chemical or
 commodity)

The NPIRS data base can also be queried for federal or state pesticide data to provide the following information:

- | | |
|-------------------------|-----------------------------|
| Site (Crop) | Site-pest combination |
| Pest | Site-ingredient combination |
| Active ingredient | Pest-ingredient combination |
| EPA registration number | Brand name (product name) |

At present, the Chemicals-Pesticides Program can capture information from NPIRS on a microcomputer or word processor (with communications), edit or modify the information, and send it through the electronic mail program of SCAMP to a specific individual.

CHEM-NEWS and other SCAMP programs can be extremely useful for state pesticide inspectors. When fully imple-

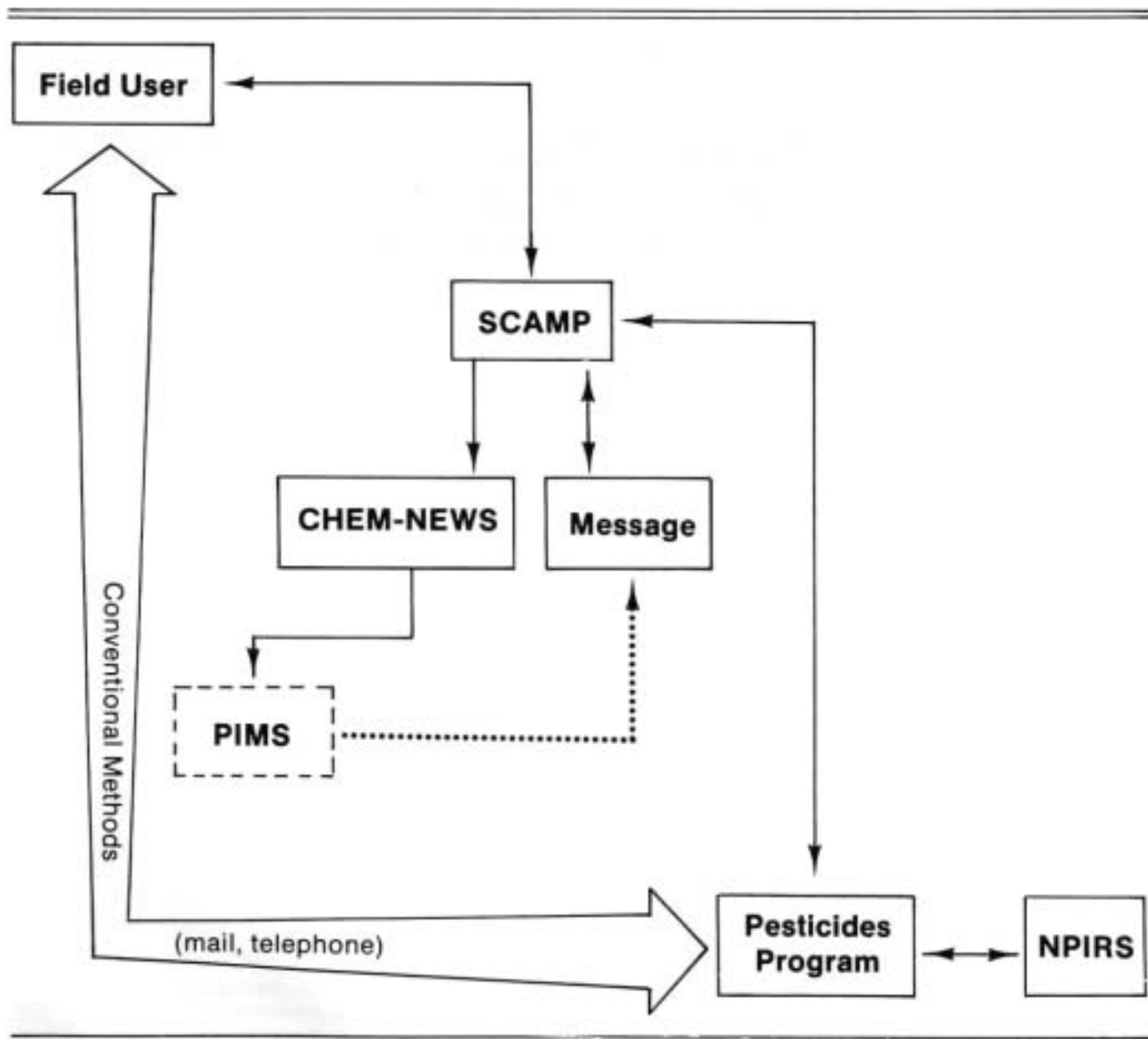


Figure 2.—Communication by use of SCAMP's electronic mail program.

merited, CHEM-NEWS and, specifically, PIMS will provide information for pesticides registered for sale and use within New York State. Besides providing an alternative system for accessing state pesticide data, PIMS can be easily modified for input into NPIRS. The following information will be accessible through PIMS when fully implemented:

EPA registration number	General use
EPA distribution number	Formulation
Brand name	Toxicity
Manufacturer	Flammability
Chemical ingredients	Restrictions
Warning statements	Renewal status

The data base for PIMS is provided by the New York State Department of Environmental Conservation and is programmed in INFO, a data file management language, on the Prime 400 computer at Cornell.

College specialists and Cooperative Extension personnel recommending pesticides for commercial agricultural producers, homeowners and structural pest control operators can be kept up to date by accessing pesticide information within CHEM-NEWS.

FUTURE DEVELOPMENTS

Future pesticide information programs being developed cooperatively by the Chemicals-Pesticides Program and PIAP are to include pesticide-use summaries, pest and pesticide profiles, a bibliography of pest and pesticide impacts by production system, and a videotex pest identification program. These programs will be designed to interact with perspective users, primarily through SCAMP and CHEM-NEWS, although other commercial delivery systems are currently under evaluation for distributing information throughout the entire northeast.

It is anticipated that a toll-free number for out-of-state users will be in place by the 1984 growing season.

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