

# Fumigants & Pheromones

Issue 39

Summer  
1995

Route

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A Newsletter for the Insect Control & Pest Management Industry

## The Gatekeeper

Like a vigilant keeper-of-the-gate, food plants, museums, restaurants, grocery stores, households, or any other pest protected areas receiving inbound stored products need to stop unwanted visitors and enemies from entering. It is much safer and more economical to try to keep pests out than to eliminate them after they are established.

A Gatekeeper Approach to pest control helps create a **Pest Prevention Program (PPP)**. A Pest Prevention Program makes more sense than a pest control program. We work very hard to eliminate a pest problem that could have been stopped at the door if someone would have been trained and empowered to check each product entering the facility. This may be railcars of raw ingredients at a cereal processing plant, a new museum object of unknown origin or a pallet of potatoes at a super grocery store (open 24 hours a day, seven days a week), a sack of fresh produce to a restaurant, or a box of used clothing in a house. One fertile female cockroach, moth, or flour beetle may begin reproducing fast enough to start an outbreak in just a few short months.

A Gatekeeper needs to be trained on what to look for and given the proper tools to inspect for signs of pest infestation as well as for the small intruders themselves. If a facility receives products or ingredients during three shifts, there need to be at least three Gatekeepers. The Gatekeeper should command respect by his/her appearance, skill, and attentiveness and have the authority to stop infested material from entering the facility.

Inspecting for rodent evidence is an art in itself. The Gatekeeper should visually inspect for gnawing and fecal pellets while scanning packages with a



blacklight. Care should be taken because many inks and glues will fluoresce when inspected with a blacklight. To become familiar with the appearance and color of rodent urine stains, obtain a mouse and place it on pieces of packaging material for a day. The urine stained paper can be inspected with a blacklight and retained for future comparisons.

For insects, a pheromone trap can be placed in trailers or railcars enroute. The traps are then carefully checked upon arrival for the presence of stored product insects. If insects are found in a trap, the suspect load is carefully inspected by the Gatekeeper previous to unloading. Samples of insects captured during your inspections should be properly identified and carefully placed near the receiving doors as a reference for others.

### Quarantine

If a shipment is found to contain stored product pests, it should be re-

jected and sent back to the supplier. If this is impossible, this load should be placed in quarantine. This may be a truck trailer, a fumigation chamber, or an isolated area of the warehouse. A timely decision needs to be made re-

*(continued on next page)*

## ARTICLES IN THIS ISSUE

- The Gatekeeper
- Prison for Applicator
- Fumigation Technology
- A Legacy
- Rodent Technology
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- Upcoming Conferences

### Fumigation Technology...

From the journals

Synergism of Methyl Bromide and Sulfuryl Fluoride  
Toxicity against Termites by Admixture with Carbon Dioxide

Rudolf Scheffrahn, Gregory Wheeler, and Nan-yao Su University of Florida,  
*J. Econ. Entomol* 88(3): 649-653 (1995)

Methyl bromide has been used as structural fumigants since 1949 and Sulfuryl fluoride (Vikane™) since 1957. In this laboratory study we assessed the lethal accumulated doses of methyl bromide and sulfuryl fluoride in admixture with CO<sub>2</sub> against two economically important termite species. Carbon dioxide has long been known to enhance the efficacy of fumigants in controlling insects infesting raw food commodities (Cotton 1932). Cotton (1938), Jones (1938), Bond & Buckland (1978), and Calderon & Leesch (1983) found that the toxicity of methyl bromide against stored-product beetles was synergised by admixture of between 4 and 40% vol:vol CO<sub>2</sub>. Toxicities of methyl bromide and sulfuryl fluoride (Vikane) in combination with CO<sub>2</sub> were assessed against the Drywood termite (*Incisitermes snyderis*) and workers of the Formosan termite (*Coptotermes formosanus*). Various concentrations of the two fumigants were used along with concentrations of carbon dioxide of 0,5,10,20 percent (vol:vol). In general, CO<sub>2</sub> enhanced the toxicity of methyl bromide against *I. snyderi* more than *C. formosanus*. (1.8 vs. 2.2 maximum synergism ratio). 20% carbon dioxide did not add to the mortality over 10% carbon dioxide. These results indicate that the application rates of structural fumigations may be reduced by the simultaneous addition of 10% CO<sub>2</sub> into fumigated airspace.

### Rodent Control Technology...

From the journals

Odors in Traps: Does Most Recent Occupant  
Influence Capture Rates for House Mouse?

Lee Drickamer, Southern Illinois University,  
*Journal of Chemical Ecology*, Vol. 21, No. 5, 1995.

Chemical cues are important for the social biology of a variety of rodents. Responses of house mice (*Mus domesticus*) to odors in live traps were studied in a series of eight outdoor field enclosures. It was assumed that the most recent mouse capture would provide the predominant odor in a trap for at least one week. Three different populations were tested, one in 1989 and two in 1992, involving over 800 different mice. Similar response patterns were recorded from all three groups. Two types of questions were tested: (1) Were there any biases contingent upon what had been previously caught? (2) Were there consistent responses of mice of particular age, sex, or reproductive classes to trap odors? Traps soiled by juvenile females caught adult females significantly less often than expected, but there were no consistent relationships in terms of the effects of specific residual odors on the subsequent capture at a particular trap. For various age, sex, and reproductive classes, (1) adult males preferred odors from juvenile and estrous females and avoided odors of other males significantly more than expected, (2) juvenile females selected traps with odor of other juvenile females and avoided all other types of females odors significantly more than expected, (3) non-estrous females exhibited a significantly preference for adult male odor, and (4) estrous females selected traps containing odors from adult males but avoided those that had previously contained either non-estrous or pregnant/lactating females significantly more than expected. These findings have potential implications with regard to both the methods used for trapping small rodents and the social biology of house mice.

garding treatment and disposal of these products.

The maintenance department, clean up crews, and fork truck operators can be of valuable assistance in stopping pests from becoming established. Care should be taken to include these people in your questioning and training programs.

Products like bird seed, nuts, pasta, and pet food have a real affinity to in-

sect pests. Products positioned next to these items may become infested. If the items have a high moisture content or high protein value, they can be easy targets for these finished goods. Pest control operators that service grocery stores must be aware of the potential for these items to become infested. Care should be taken to inspect these items thoroughly from the time they are unloaded until they go out the front door with the customer. The old-

er the code date on the products the more susceptible they are to infestation.

Without a doubt, most grocery stores are more infested today than they were ten years ago. The lack of good sanitation and the inability to apply the gatekeeper approach leaves many grocery and large department stores swarming with Indianmeal moths and crawling with Sawtoothed grain beetles. If you don't believe it, take an Indianmeal moth pheromone lure with you into the grocery or health food store and walk slowly past the bird food, candy counter, or dog food aisle. It is quite frustrating for food manufacturers to receive customer complaints about their products for certain insects when it is nearly impossible to find those pests in the food companies manufacturing plant or their storage warehouses (ie. Sawtoothed grain beetles).

### The Gatekeeper Takes No Prisoners

An Outside Gatekeeper called the "corporate inspector" should visit each supplier periodically. This is an important step to show a concern and a priority for wholesale ingredients from a quality supplier. If the supplier doesn't pass the Gatekeeper's muster, no commerce changes hands. "Meet our standards or we will buy from somewhere else," is the reasoning of many multinational food companies.

The power of the letterhead is enormous. A short letter from a buyer of ingredients can get immediate attention from the supplier. A statement like: "We would like to continue doing business with your company, however..." will get quick results.

The Gatekeeper needs authority, training, and most importantly a singleness in purpose; "Stop all pests from entering...period" because the consumer today is demanding zero insect tolerance. A Pest Prevention Program can be a key element in offering a quality product to the customer that is pest free.

**"Always Start With the Insect First."**  
By David K. Mueller

As seen in *Pest Control* magazine.

**Correction:** Gustafson, Inc. intends to market a new product called Storicide and not Sorcide (from Issue 38).

## Dave's Soapbox



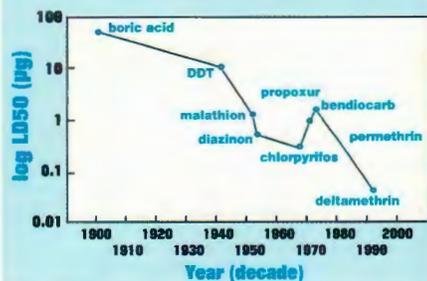
### Silent Spring 1995

Rachel Carson may not have gotten all of her predictions correct, but she awakened the public and the world to a need to curb persistent pesticide use.

Rachel Carson stated in *Silent Spring* that: "We are not masters of nature." Dr. John V. Osmun, Professor Emeritus, Purdue University stated: "1962 was a pivotal date in the use of pesticides. That was the year that Rachel Carson wrote *Silent Spring*. This was a devastating book. It was eloquently written, it was compelling. Here we had someone who was a writer and a scientist."

Dr. Osmun goes on to say, "Now that I look back on it, it was quite courageous that Rachel Carson published this book. She was condemned and praised by many people. In 1962 it was easy to dislike her. But there is no question that Rachel Carson had insight, and intuition. And she set many events in motion. Our early unhappiness with her has changed and turned to admiration."

### 20th Century Trends



The amount of active ingredient used for controlling cockroaches from 1900 to present. By Coby Schal, Ph.D

In 1962 when *Silent Spring* was first published as a three part article in The New Yorker magazine, people were seeing the tremendous advan-

tages of this long residual insecticide. It played an important part in winning W.W.II by stopping the spread of Typhus, caused by the flea in Italy, and drastically reduced the effects of Malaria caused by the mosquito in the jungles of the South Pacific. The farmers saw a rapid increase in yields by easily and economically killing pests that feed on their crops. This wonderful synthetic chemical was so effective that some scientists predicted the extinction of the house fly.

Carson in *Silent Spring* carefully outlined the many eradication programs, like the Japanese beetle, that were implemented by the government to stop the spread of certain quarantine pests. The indiscriminate application of DDT to large sections of this country showed a negative effect on the food chain and



especially those animals higher up the food chain like the hawks and eagles. The country started to see fewer and fewer birds of prey. The thinning of the egg shells by the chlorinated hydrocarbon residue was shown to be the reason. Imagine, our national emblem, the eagle, was disappearing. America began to fear a *Silent Spring*.

Today, regional recovery programs have turned the tide of extinction since DDT was banned in 1972 by the EPA. In June 1994, 22 years since this ban, our national bird was declared ready to move from the endangered to the threatened list. It is not uncommon today to see hawks on the sides of the highways, or a osprey fishing at the local lake, a peregrine falcon on a skyscraper, or an eagle soaring high overhead. And imagine that the effective breakdown of these chlorinated hydrocarbons like DDT is about 20 years. The worms and the insects that carried the chlordane, heptachlor, Aldrin, Dieldrin, and DDT were the food source for the small rodents that were the food source for the raptors.

In 1972 when Wm. Ruckelshouse, EPA director, broke down to public outcry and banned DDT. It wasn't a matter of Chicken Little and the sky is falling, but a realization that man can't control nature. The pesticide industry was in shock. When Chlordane was banned as a termiticide and pest control product in the 1980's, the pest control industry was in shock. When

EDB was banned in 1983 the food industry was in shock. When methyl bromide was declared a serious ozone depleter in 1991 by the United Nations Parties to the Montreal Protocol, the world was in shock. When Connie Chung trashed Dursban™, a long residual organo-phosphate, in 1995 the pest control industry stuck out its chest again and claimed to defend its territory.

Take home message: **Persistent pesticides are under attack and will disappear.**

## Legend of the Miller's Coat of Arms

### A Legacy of Courage

In the Czech Republic, offices affiliated in any way with flour milling are likely to sport an intriguing piece of art: The miller's coat of arms. The coat of arms originated in 1116, the same year the miller's guild was founded.

In 1116, Vladislav I, a Czech prince, was asked by Stephen, a Hungarian king, to make eternal peace. To this end, both rulers met at the border with their armies.



Meanwhile, an evil fellow named Sok had been expelled from Hungary. Seeking revenge for his banishment, he sent a false message to both armies. The message turned the parties against each other so that instead of the eternal peace, a furious fight arose between the Czech and Hungarian troops, with alternating success. Suddenly the Czech troops began to

(continued on next page)

## Miller's Coat

(continued from page 3)

retreat, and not even Vladislav, who arrived to lead his army, was able to prevent them from flight. When the danger of defeat was highest and the Czech cause seemed lost, a man in a white tunic jumped among the Hungarians and began to cut them to pieces with his sword, until he was deep in their blood. When the other Hungarians saw this, they turned and retreated to the town of Buda.

After the glorious victory, Prince Vladislav asked his knights to identify the hero who had acted so bravely. The knights answered that he was a miller, George from Doupov, and introduced him to the prince.

When George bowed to him, the prince arose and reached out to shake the hand of the brave fighter. The miller, reaching out his own right hand, saw that he had lost three fingers in the battle. He quickly wiped his hand over his white tunic, staining it with three stripes of blood. Only then did the miller shake hands with the prince.

Then the prince addressed the miller as follows: "Thanks to you, you virtuous and brave hero, for you have delivered us from a great shame. For a reward, you and all offspring of your clan will use three red stripes in a white field, which you made yourself, as your coat of arms."

At the same time, the prince named George from Doupov as warden of the town of Zetec and the surrounding country. Then, in the presence of the miller and the army, the prince sentenced Sok, whose behavior had aroused hatred and caused the fearful slaughter, to death.

Source: *World Grain*, 1994



Albert F. Mueller a retired flour miller attending the recent Association of Operative Millers (AOM) conference.

## Pesticide Applicator Sentenced to Five Years in Prison

A pesticide applicator who knowingly treated oats used by General Mills, Inc., with an unapproved pesticide chemical was sentenced to five years in prison, three years of supervised probation, and 200 hours of community service.

Y. George Roggy, owner of Fumicon, Inc. Edina, Minn., was sentenced Feb. 22, 1995, by Judge Michael Davis in the U.S. District Court for the District of Minnesota. On Nov. 15, a federal jury found Roggy guilty of fraudulently applying an unapproved pesticide to approximately 19 million bushels of oats. He was convicted of 11 counts of mail fraud, one count of felony food adulteration, and one count of misusing a pesticide.

General Mills unknowingly used some of the contaminated oats to manufacture approximately 160 million boxes of some of its most popular breakfast cereals. The General Mills' products are not recalled because FDA and EPA officials determined that Roggy's pesticide substitute did not create a human health hazard.

Analysis of the oats show that they contained chlorpyrifos-ethyl (Dursban), a pesticide approved for pre-harvest use on raw agricultural commodities, but not for any use on oats. FDA analysis of these oats confirmed they contained chlorpyrifos-ethyl at levels of up to 2.65 ppm.

Investigators confronted Roggy, and he admitted that he had used Dursban instead of Reldan because it was cheaper and that he had been applying Dursban to the oats for more than a year. The difference in cost saved by Roggy by using the unapproved pesticide was \$85,000. He said he knew what he had done was wrong and that he was surprised FDA caught the switch.

General Mills destroyed 55 million boxes of cereal it had in inventory and suffered losses of more than \$140 million.

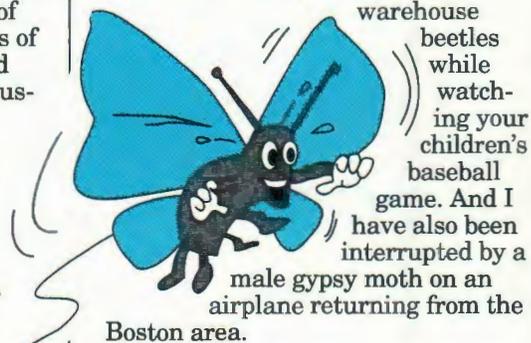
Source: *FDA Consumer*, May 1995

*Editor's note: The real cost of such a travesty is not in dollars and cents but in trust and reputation. The pest control industry lost much of both.*

*The employees of General Mills went through living hell to correct this wrongdoing. If we can scratch out a lesson from this colossal mess it might be Read and Heed the Label.*

## Human Pheromone Lure

It is often joked about how the Indianmeal moth will readily come to you after handling its pheromone lures. It may happen while waiting to check out at your local grocery store or you may become the target for a moth attack when you are sitting at your favorite restaurant. You may become molested by an outdoor swarm of



All of these have happened to me even after I have not touched the pheromone for months and years.

In the *Journal of Chemical Ecology*, Vol. 21, No.4, 1995, Alan Cameron, Department of Entomology, Penn State University, reports that he worked with the Gypsy moth (*Lymantria dispar*) pheromone in 1977 on a field project. He has not worked with or been in contact with the pheromone since this time. Now, 18 years later he is still attracting gypsy moths. It is somewhat amusing at first, but it can become a real nuisance after a while. Imagine how very small the release rate would be from your body to excite a behavior of a male insect... nanograms or maybe molecules.

**Take Home Message:** Use gloves when you handle pheromones, or you too may become a human pheromone lure.

By David K. Mueller, BCE

## Marketing the Ozone

Many ask when methyl bromide will be gone. This is a good question but a predictable one. The day a multi-national food company places a small symbol on its' package that reports that its' product is Ozone Friendly.

The Chrysler Corporation recently announced in a full two page ad: "The ozone layer has protected us for



1.5 billion years. IT'S TIME WE returned the favor". "All Chrysler Corporation vehicles made since January, 1994 have air conditioners that use CFC-free refrigerants...Thanks to safer substitutes and systems re-designs, we are years ahead of government guidelines. It's just one small step to solving a problem that's been hanging over all our heads." CHRYSLER CORPORATION.

## PEST EX '95

London, Hammersmith  
20-23, June 1995

The British Pest Control Association meets every three years to discuss the past and future of this gentlemanly organization. Pest Ex 95 was planned far in advance to include plenty of activities to fill a three day agenda:

1. An opening address by a Baroness, a sir, and many qualified speakers who came well prepared
2. A poster display of new technologies

(including one from Insects Limited, Inc. on the Clothes moth pheromone and one on the Combination Fumigation Method).

3. A commercial exhibition that was well represented with British and American suppliers of pest control products and services.

The exhibition drew over 800 takers from an industry of about 5000 in the UK. Large groups from the outside of the UK could be seen searching the stands like children at Christmas, including a large contingent from the Czech Republic.

A recycling of the theme from the National Pest Control Association's theme of Guardians of the Environment played through the conference. Norman Cooper of the NPCA and an original architect of this theme several years ago was an invited speaker.

The only disappointing aspect of this conference was in the attendance at the professional training sessions. Without an established program for pesticide applicator certification, the need to attend this type of continued education program is not obligatory.

One well attended session was organized by Mr. Chris Watson, Igrox, Ltd., UK. This was a panel to discuss methyl bromide. A lively discussion was orchestrated by Mr. Watson to allow various sides of the issue to be represented. The UK and the BPCA are in favor of a wait and see attitude.

Some of the scientists with twenty plus years tenure will choose to stay behind in London with their families and pursue other interests while most will take the journey and challenge to reestablish the CSL-Slough Lab to the CSL-York Lab starting in August, '96.



They are waiting for additional science to be gathered to allow for a more "rational" discussion to be formulated.

The staff of the BPCA, including Dr. John Simmons, Mr. Richard Strand, and Mrs. L. Vickers, did a tremendous job in organizing this conference. The many details were sparkling throughout the three days.

London is a gathering place for people from all over the world. Pest Ex '95 was truly an international gathering and sharing experience.

## CSL-Slough Moves to York



CSL  
Researches  
Agriculture,  
Food, and the  
Environment

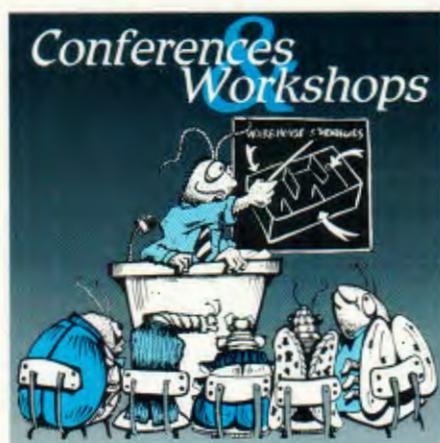
The Central Science Laboratory in Slough, England (*Western London near Heathrow Airport*) is moving north 200 miles to York in the county of Yorkshire, with a staff of over 500 and 5 new labs.

CSL-Slough is the largest stored product research facility in Europe with over 200 scientists and the origin of the prestigious Journal of Stored Product Research.. The "Slough" facility dates back over 50 years and can boast some of the most famous fumigation experts.

In the recent years "Slough" has been given the challenge that many of the fund strapped research facilities throughout the world have been given: "Be self-sufficient. Explore opportunities to work with the commercial world to produce income that justifies your job and your research." This has driven the labs to be more self-sufficient, focused, and more practical in nature.

The new facilities in York should open opportunities for fresh research with new faces, equipment and facilities. The projection is that "York" will continue to be the powerhouse research organization that will find ways to help feed the hungry world.

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## Fumigants & Pheromones Technical Conference

14-15 February, 1996

Holiday Inn Bologna Tower  
Bologna, Italy

### Program

Theme: Feeding The Hungry World

This seminar will bring together practitioners, scientists and industry to present new and innovative ways to control insects in food, tobacco, grain, museums, and other stored products. Invited speakers from Europe, North America and South America will be sharing their methods for controlling pests. Feeding The Hungry World has been chosen as the theme for this conference because it is easier and more economical to save a kilogram of food than it is to grow one to replace it.

Languages: Simultaneous interpretation in Italian and English

**13 Tuesday, February, 1996**

Registration and Host Reception

**14 Wednesday, February**

#### Introductions

**David K. Mueller**  
Insects Limited, Inc.  
Indianapolis, USA  
Program Chairman  
**G. Albertazzi /**  
**C. Albertazzi, Ph.D.**  
Colkim s.p.a., Bologna, Italy  
**J.B. Sullivan, Ph.D.**  
Moderator

#### Keynote Speaker

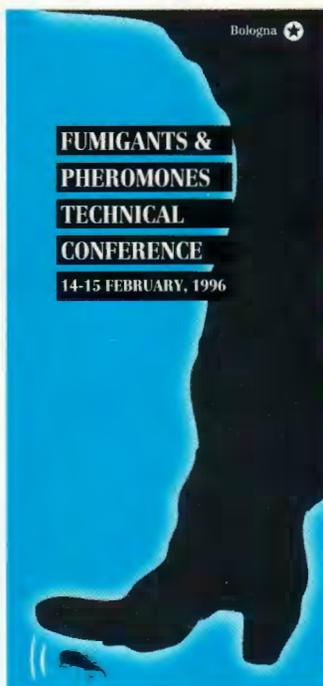
**Prof. Giorgio Domenichini**  
President of the Working Group for Stored Products and other Commodities; OLIB/WPRS, Italy

#### Entomological Problems in Food Plants (Filière)

**Prof. Pasquale Trematerra**  
Universita of Molise, Italy  
*New Technologies in Pheromones*

**Chris Watson**  
IGROX Ltd., Suffolk, UK  
*Methyl Bromide and World Politics*

**Gerhard Binker, Ph.D.**  
Binker Materialschulz, Schwaig, Germany  
*New Technologies in Fumigation*



**Vaclav Stejskal**  
Food Research Institute, Prague, Czech Republic  
*A Review of New Technologies from the Food Research Institute-Prague*

### Recertification Workshops Kentucky Recertification\*\*\* Workshop

August 11, 1995

Fumigation Continued Education for Grain and Food Processors  
Barkley Lodge, Western Kentucky  
Contact: David Mueller  
tel: 317-846-3399

### Tulsa Fumigation Workshop\*\*\*

October 11-12, 1995

Hands-on Fumigation Training  
Doubletree Hotel (Tulsa Port Authority), Tulsa, OK  
Contact: David Mueller  
tel: 317-846-3399

**John Mueller**  
Fumigation Service & Supply, Inc.  
Indianapolis, USA  
*Practical Application of Fumigants in North America*

**Joseph Vonarburg, Ph.D.**  
desinfecta ag,  
Dällikon, Switzerland  
*Case Studies from the Real World*

**Robert Corrigan, Ph.D.**  
Purdue University,  
W. Lafayette, IN, USA  
*New Technologies in Rodent Control*

**Vladan Veljovic, Halozone**  
Mississauga, Ont., Canada  
*Methyl Bromide Recovery and Reuse; Bromosorb™*

**Marten Van Maanen**  
Rhone-Poulenc,  
Secteur Argo-Lyon, France  
*Fipronil: A New Active Ingredient for Insect Control and its Use Against Termites*

#### Spouses Program:

Day One - Tour & Lunch in Bologna.

#### 15 Thursday, February

**Jerry Sullivan, Ph.D.**  
Harrisonburg, VA, USA  
*Case Studies on Human Exposure to Fumigants*

**Paul Cogan**  
CSL-Slough, Middlesex, UK  
*New Technologies from CSL-Slough Laboratories*

**Bobby Jenkins**  
ABC Pest Control,  
Austin, TX, USA  
*Developing an Organic Pest Control Business*

**Marco Pagani, Ph.D.**  
University of Piacenza  
*Filth Testing*

**Franziskus Horn, Ph.D.**  
Degesch de Chili,  
Santiago, Chili

### Food and Grain Protection Workshop\*\*\*

April 1996

One Day Recertification Program  
Kirkwood Community College  
Des Moines, IA  
Contact: John Mueller  
tel: 317-846-5444

### International Conferences

#### VIII Latin America Round Table on Prevention of Post-Harvest Food \*\*

4-6 July, 1996

Santa Cruz de la Sierra, Bolivia  
FAO Regional Office for Latin America

#### New Technologies in Metal Phosphides

**Paolo Guerra**  
SO.DI.RA s.r.l., Ravenna, Italy  
*Practical Application of Fumigants in Italy*

**Paul Fields, Ph.D.**  
Ag. Canada,  
Winnipeg, Canada (Studing at the Agriculture Research, Bordeaux, France)  
*New Technologies in Grain Protection*

**Lee Ryan, Ph.D.**  
Philip Morris Europe, Neuchtel, Switzerland  
*Post Harvest Tobacco Infestation Control*

**Professor L. Süß**  
University of Milano, Italy  
*IPM: What it Means in the Italian Food and Grain Industries*

**Larry Pierce**  
Food Protection Services, Millilani, Hawaii, USA  
*The Best Use of Pheromones.*

#### Spouses Program:

Day Two - Tour & Lunch in Florence

#### Sponsors

**General Program Chairman**  
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Carlo Albertazzi, Ph.D.  
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Via Piemonte n.50  
tel. +39 51 799.445  
fax +39 51 797.555

Contact: **Ciro Arias**  
fax+562-218-2547

### National Pest Control Association\*

29 October-2 November, 1995  
Walt Disney World, Orlando, USA  
Dolphin Hotel  
Contact: **NPCA**  
fax+1-703-573-4116

### 7th Meeting of the Parties of the Montreal Protocol\*\*

29 November-7 December, 1995  
Republic of Austria, Bundesministerium fur Umwelt 11  
Vienna, Austria  
Contact: **Dr. Raimund Quint**  
fax+4-312-369-2286

### Seminar on Food Fumigation

29-30 November 1995  
Instituto de Teclinologia de Alimentos-ITAL  
Cainpinas, Sao Paulo, Brazil  
Contact: **Maria Fernanda P.P.M. de Castro**  
fax: +0055-0192-415034

### Fumigants & Pheromone Technical Conference \*\*\*

14-15 February, 1996  
Holiday Inn Bologna Tower  
Bologna, Italy  
Contact: **David Mueller**  
tel: 1-317-846-3399  
fax +1-317-846-9799

### EURICIDO '96 \*\*

The Second International Conference and Trade Fair  
23-27 April, 1996

Deutscher, Schadlingsbekampfer Verband e.V. (German. Pest Control Association)  
Westphalia Hall in Dortmund, Germany  
Contact: **Thomas Voigt**  
fax +49 6201 465 26

### CEPA-FAOPMA \*\*

8-12 August, 1996  
Israel Pest Control Association in conjunction with the European, Asia and American Pest Control Associations.  
Tel Aviv, Israel  
Contact: **Eitan Amichai**  
fax+972-3-7521 908

\*IL/FSS will attend this conference

\*\*IL/FSS has been invited to speak/participate

\*\*\*IL/FSS is organizing this conference

## Bolivia Meeting

### VII Latin America Round Table of Prevention of Post-Harvest Food Losses

The Food and Agriculture Organization (FAO) sponsored a meeting in Santa Cruz, Bolivia on July 4-6, 1995. The FAO is a branch of the United Nations that helps countries with their agriculture and food distribution programs. It had an operating budget of over \$600 million dollars last year.

The main objective of this round table

was to discuss some of the technical, economic, and social problems related to post-harvest handling of the main agricultural products grown in Latin America, Central America and the Caribbean, as well as to motivate the technical cooperation among the countries.

It is one thing to produce more food to feed the hungry world, but it is equally important to be able to protect this harvest while it is being stored. Over thirty formal presentations were given by experts. They ranged from alternatives to methyl bromide to the detection of the Larger Grain Borer (*Prostephinus truncatius*) in native areas throughout Central America. The pheromone was shown to be a useful tool for detection of this very serious pest of stored corn (maize). Other topics included better grain storage and drying in underdeveloped areas where electricity is not available.

This three day meeting was successful in gathering together the entire continent of South America along with the five countries of Central America to share information and make new contacts in the field of post harvest protection.

## International Distributors

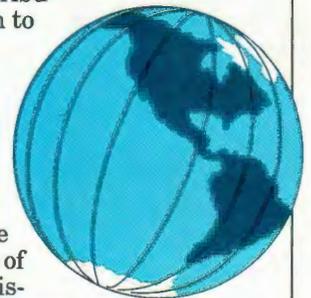
*Insects Limited was started in 1982*

Since 1990, Insects Limited, Inc. has distributed its pheromone-based products and services internationally.

The list of distributors has grown to 20 countries.

Pheromone-based products are somewhat easier to trade

throughout the world because of the lack of registration in most countries. The pheromone technology is of keen interest throughout the world because of the accelerating interest in green products for pest control. Insects Limited, Inc. was the first to launch a trapping system for the Webbing Clothes Moth (*Tineola bisselliella*) and a computer program (Pest



### VII Mesa Redanda Latinamericana sobre Prevencion de Perdidas, de Alimentos en la Etapa de Poscosecha



*Victor Medlock, U.K., Juan Batista, Argentina, Ricardo Munoz-Cisternas, Chili, David K Mueller, USA, discuss stored-product protection in Santa Cruz, Bolivia.*

(continued on next page)

## Distributors

(continued from page 7)

Monitoring Software) for recording and reporting results.

Many of the international distributors are established stored product protection type companies that are well respected in their countries for innovative pest management. If you have a need for an expert in pheromone monitoring or other stored product pest management needs, call Insects Limited, Inc. for a contact in the following countries:

*Austria • Belgium • Brazil • Canada Caribbean • Denmark (Scandinavia) England • France (Franco-speaking countries) • Germany (2) • India Israel • Mexico • Portugal • Spain Slovenia • South Africa • Switzerland • Taiwan • Wales • Zimbabwe*

**The amazing thing is that insects speak the same language worldwide.**

## Fog GENTROL™

The Insect Growth Regulator Gentrol from Sandoz Agro, Inc. will be available for fogging in food areas in October 1995. Manny Martinez, business manager for Sandoz stated: "The EPA has accepted our supplemental label for fogging in food areas and non food areas of food handling establishments."

The supplemental label will allow the user to tank mix Gentrol (*Zoecon RF-259 EC*) with adjuvant currently registered for use. The application rate for Gentrol in a fogger will be one ounce per 12,000 cu. ft. on a 120 day schedule. There will be a 30 minute reentry period for fogged Gentrol and water formulations. There will be the standard "cover or wash down" requirement that you see on most pyrethrin fogging insecticides.

Since Dianex™ was suddenly removed from the market several years ago, the food handling industries have had a real need for an IGR with which they could treat their entire facility. David Mueller of Insects Limited, Inc. stated: "If I could take every food, grain facility, and grocery store and turn them up-side-down and fill them with Gentrol, swish them around, and turn them over again every 120 days, we would see a real decrease in roach, beetle, and moth activity. IGR's, like

Gentrol, are going to be major tools in a pest management strategy. I'm excited that Sandoz will have this new supplemental label ready in the fall."

## QUOTABLE QUOTES

"Men have called me mad. But the question is not yet settled whether madness is or is not the loftiest intelligence, whether much that is glorious, whether all that is profound, does not spring from disease of thought..."  
*Edgar Allan Poe*

"He who understands nature is never afraid and never alone."  
*E.O. Wilson, Harvard Entomologist, Pulitzer Prize Winner, quoting Rachel Carson (Silent Spring).*

"After 15 years, IPM has failed miserably in the Urban Pest Control Industry."  
*Jeffery Tucker, BCE, OPCA, Toronto 4/95*



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# 1995

## Fumigation Workshop

October 10 & 11, 1995  
Tulsa, Oklahoma  
Hands on Workshop  
For more information  
1-317-846-5444

## INSIDE LETTER

Fumigants & Pheromones is published by Fumigation Service & Supply, Inc. and Insects Limited, Inc. for the professional applicator. We hope that the information that you receive from this newsletter will help you in your business, and you, in turn, will support our business efforts. If you have an associate who would be interested in receiving this newsletter, please contact the address below. We would welcome any comments or suggestions for topics. Address correspondence to: David K. Mueller, Fumigation Service & Supply, Inc., P.O. Box 40641, Indianapolis, IN 46280.



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