

Fumigants & Pheromones

Issue 40

Fall
1995

Routing

A Newsletter for the Insect Control & Pest Management Industry

The Original Sticky Pheromone Trap

Long before entomologists learned to use pheromones to attract their prey, the Bolas spider was patiently attracting its next meal with a moth sex attractant pheromone.

Bolas spiders attract certain male moths by aggressive chemical mimicry of those moth species' sex pheromones. These spiders capture moths by swinging a "bolas" (i.e., a sticky globule suspended on a thread of silk) at the approaching male moths. The viscous ball is the noose that holds the unwilling prey until she enswaths it in bonds of silk.

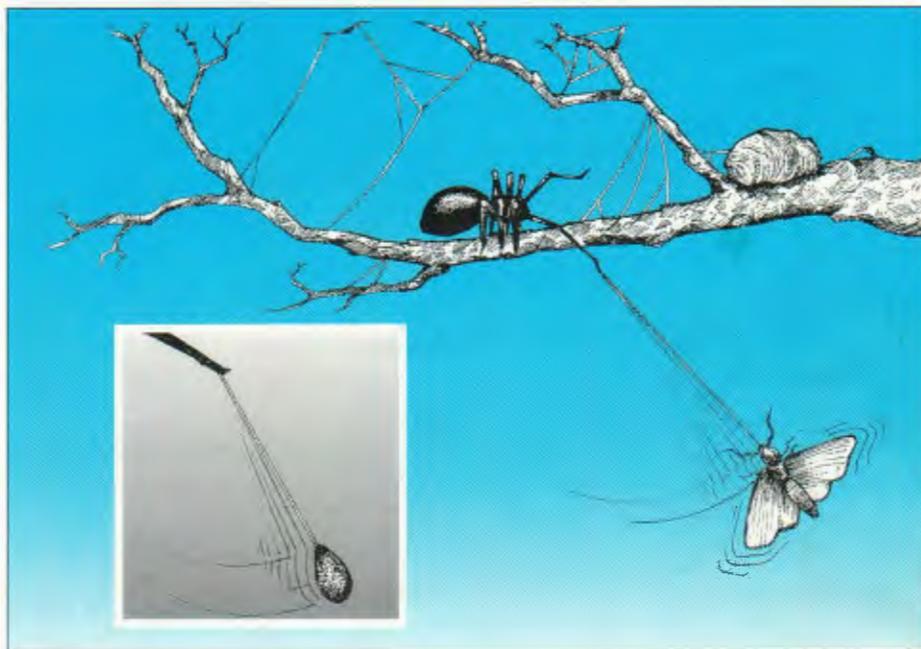
Kenneth V. Yeargan, Department of Entomology, University of Kentucky stated in *Oecologia*, "The flight behavior of approaching moths, and the fact that only males were caught support the hypothesis that the spider attracts its prey by producing chemicals which mimic the sex pheromones of these moth species."

The Strike

Just after dark on a warm summer evening, the plump female adult Bolas Spider prepares her hunt. She spins a secure line under a branch. Far enough away to allow her some room to work. Next she prepares her Bolas. She pulls out a two inch thread that she now combs out quantities of viscid silk by means of her hind legs. Each leg alternates until a shining globule as large as a seed pearl is formed.

About 10:30 PM she quickly swings her massive body into action. She waits for the approach of any suitable victim, with the patience of a still hunter.

At just the right moment, when the moth comes within the arch of the line, the spider swings the globule rapidly forward in the direction of the moth. The viscid ball strikes on the underside



of a forewing and brings the winged creature to an abrupt stop. The line stretches half its length but holds the prey.

Fluttering furiously at the end of the lasso, the moth makes every effort to free itself from the sticky globule, but the spider is quickly on hand to deal out the final coup by biting the visitor on some part of its body. Resistance ends quickly with the venomous bite, and the paralyzed moth is rotated and trussed up like a mummy with sheets of silk. To the victors go the spoils.

Quickly she spins another sticky bead, and resumes her vigil, secretly knowing that her special 'perfume' is working again tonight.

"This unique hunting spider is commonly found in your backyard. It is different than the usual orb web spinning spiders that leave the large glistening traps. Instead of relying on the static but dependable round web, they spin a line, weight it with a sticky drop

of liquid silk, and hurl it at their prey, much as the gauche throws his bolas or the angler casts his line." Says Willis Gertsch of the American Museum of Natural History in 1947, *Natural History*. *

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EPA Proposes to Cancel Vapona

On September 28, 1995 the EPA released the following statement: "To eliminate unacceptable health risks to the public and workers, the U.S. Environmental Protection Agency is proposing to cancel most uses of the pesticide dichlorvos including all home uses. The Agency is also proposing that most retained uses be restricted to specially trained certified applicators."

The two reasons for issuing this statement were based on EPA findings over the past eight years on risks associated with dietary cancer and harmful effects on the nervous systems of persons who mix, load or apply the pesticide or who live in homes or re-enter areas where the pesticide has been applied. EPA has classified DDVP as a possible human carcinogen. DDVP also inhibits the enzyme cholinesterase, which is important to the proper functioning of the nervous system.

Dennis Utterback, EPA, Special Review Manager for Dichlorvos, stated: "Virtually all uses of dichlorvos for bulk and packaged goods will be eliminated. Utterback went on to say: "A lot can happen between now and when we go final. A final document on dichlorvos should be issued in the spring or

early summer of 1996."

There will be a 90 day comment period for Vapona for those wishing to officially voice their feelings about this proposal. Those comments should be sent no later than December 28, 1995 to: Public Response Section, Field Operation Division (7506C), Office of Pesticide Programs, U.S. EPA 401 M Street, S.W., Washington, DC 20460. As seen in the December Issue of Pest Control.

SCIENCE U.P.D.A.T.E

Antarctic Ozone Hole Sets New Record

On 12 September 1995, the World Meteorological Organization (WMO) announced that stratospheric ozone levels over Antarctica in early September were 35% below normal (preozone hole) averages — an all-time record. "The ozone decline over the Antarctic that started at the end of July was so far the most rapid depletion

on record," the WMO announced.

The area with severely depleted ozone currently covers about 10 million km² — about the size of Europe — and is twice the size that it was during the same time period in 1993 and 1994. "Bojkov, of the WMO stated that the total ozone over North America has declined by 9%-10% since the 1950's, and could decline by another 6% over the mid-latitudes of the Northern Hemisphere. However, he downplayed any immediate concerns for residents of the Southern Hemisphere. "On average, the depletion is not yet critical, although on the odd day in South America or Antarctica it could be dangerous." *

Source: *Global Environmental Change Report*, 22/09/95

Nobel Prize for Predicting Hole in Ozone

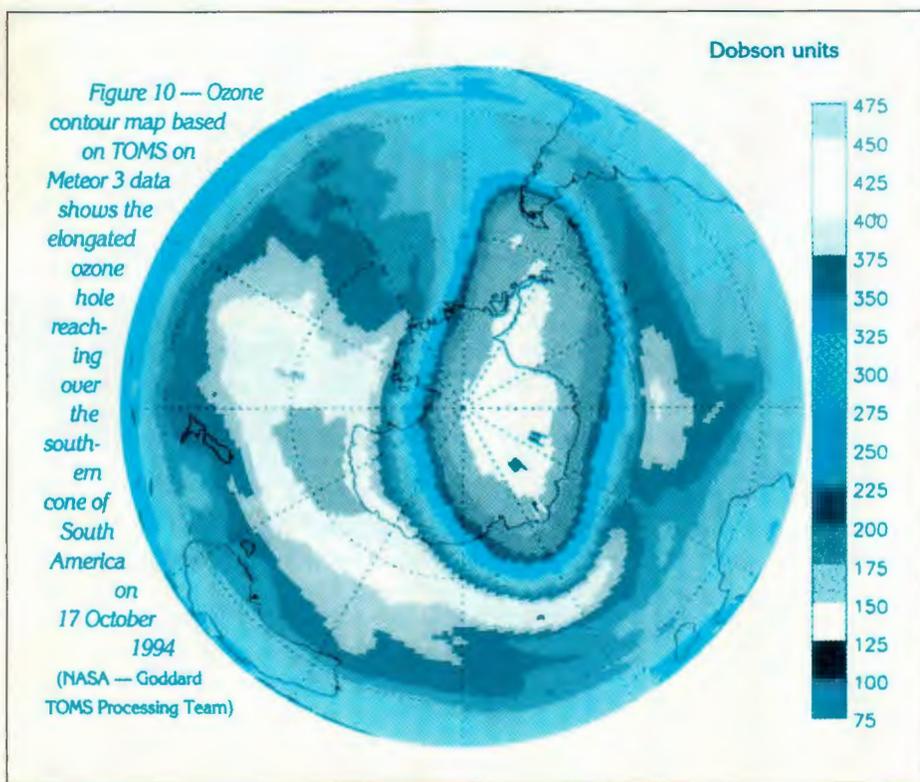
Two Americans and a Dutch scientist won the Nobel Prize in chemistry for their controversial work warning that gases once used in sprays and other items are eating away Earth's ozone layer. Work by Molina and Rowland predicting an ozone "hole" laid the groundwork for its discovery in 1985 over the South Pole.

The chemistry prize went to Marlo Molina, 52, of the M.I.T., Sherwood Rowland, 68, of U.C. Irvine, and Paul Crutzen, a Dutch citizen working at the Max Planck Institute for Chemistry in Germany. "The three researchers have contributed to our salvation from a global environmental problem that could have catastrophic consequences," said the Royal Swedish Academy of Sciences in Stockholm.

They calculated that if the use of CFC gases continued without lessening, there would be a significant depletion in the ozone layer, the natural barrier against cancer-causing ultraviolet radiation from the sun.

Molina said he sees his Nobel Prize as vindication for the field of environmental science, long belittled by mainstream scientists. "This shows that one can do rigorous science that is hypothetical, but can also be tested and applied." *

Source: AP



Dave's Soapbox



Cancer

I have just spent four nights sitting with my sister in a hospital and watching her try desperately to stay alive. She has cancer spread over her entire body. Lynn Stocker is 45 years old.

Doesn't it seem that we are hearing more and more about cancer these days? Do you know someone who has cancer? Not just someone we barely know but someone in our own family or a close friend. Cancer is a terrible, heinous, merciless disease. It sucks the life and breath out of the victim, her family, and close friends.

I'm not going to speculate how or why these things happen. I do want to talk about the hidden risks associated with the excesses in our daily lives. We enjoy, in this country and in many parts of this planet, the benefits of modern technology. With those excess benefits come some downside risks. Cancer is one of them. We work in an industry that uses newfound chemicals that fight against pests. Our governments regulate them and judge them for risks. As a whole we shout our disapproval of the removal of these worn-out pesticides that were approved before modern techniques of screening were standard practice. We cry out: "These useful compounds really do a good job of killing the bugs. Look how cheap they are...it is much more expensive and our company can't survive without this chemical or that fumigant. Bread will cost more if we can't continue to use those time-tested products.

The cost to our workers and applicators is really never even figured into the equation whether it is 1 in 10,000, 1 in 100,000, 1 in 10,000, or 1 in 1,000,000.

Human health should be all important!

Now, I hear the whispers, the same whispers that I heard when I pursued alternatives to methyl bromide and declared Vapona the wrong product to use in the food industry. "Be quiet Dave, you're hurting our industry... Keep your mouth shut Dave, we don't want to talk about it, period...Dave we are going to discontinue buying our products from your company because of these beliefs."

Take home message:

The whole barrel of apples is not bad, only a few. It is not wrong to cull out the bad apples to make the whole better. If what we are doing now in our jobs helps to cause cancer to ourselves, our fellow workers, our world community, we should do everything in our power to correct it.

Dedicated to Mrs. Lynn D. Stocker, the bravest person I have ever known.

Alternatives to Methyl Bromide & Preservatives

Food Irradiation

One alternative in our search for a replacement for methyl bromide could be the increased use of gamma radiation. By using small doses of Cobalt-60 or Cesium-137 on food products, microorganisms and insects will be destroyed. This will serve to eliminate live infestations and prevent spoilage. Radiation of food will inhibit sprouting and ripening of fruits and vegetables. This all can be achieved without the food becoming radioactive.

An irradiator has been built in the Florida Citrus region and more are proposed for disinfecting the sensitive fruits from quarantine pests. Researchers in Hawaii are actively researching the use of irradiation to allow fruits and vegetables to be transported from Med. Fly infested regions of the islands. The economic impact would be tremendous.

Five percent of all spices are now treated with radiation and 40% of all medical items have this treatment. This includes surgical gloves, gowns, bandages, hypodermic needles, su-

tures, etc. Some baby bottles and milk cartons are being treated with radiation before they are filled.

The U.S. government is encouraging the use of radiation on foodstuff, along with many food processors. This could help solve some of the botulism and salmonella problems in our foods. The meat industry is gearing up to irradiate beef, fish, and poultry to help prolong the shelf life. Irradiation will not cause a nutrition or taste problem. (However, irradiated needs to be labeled as such.)

A spokesman for the Food and Drug Administration (FDA) stated: "The FDA has reviewed all the studies done on food irradiation over the past 45 years and our conclusive answer is that food irradiated at the levels proposed is safe." *

Mueller Receives Ozone Award

David Mueller was selected to receive the 1995 EPA Stratospheric Ozone Protection Award in recognition of exemplary efforts to protect the ozone layer. The award is for personal initiative and reads: "In recognition of exceptional contributions to global environmental protection." The award was presented at a dinner hosted by the U.S. Environmental Protection Agency (EPA) at the Washington Hilton during the 1995 International CFC and Halon Alternatives Conference.



David K. Mueller receiving the Stratospheric Ozone Protection Award from Steve Sidel, formerly with EPA and now with The White House Center for Environmental Quality.

David is a stored product entomologist and owner of Fumigation Service & Supply, Inc. of Indianapolis. His patented technique allows for an alternative to some uses of the ozone depleting substance methyl bromide. His fumigation technique incorporates the use of Phosphine, heat, and carbon dioxide. It is primarily used in flour mills and food processing facilities throughout the world. *

A New Method of Using Low Levels of Phosphine in Combination with Heat and Carbon Dioxide...An Update

Presented at the International CFC and Halon Alternatives Conference, Washington, D.C.

Over twenty-five field applications of the Combination Fumigation Method have been performed to date in large food processing plants and flour mills in the United States. A patent for this method was applied for and approved on April 4, 1995; Patent 5,403,597. Foreign patents are in progress in over twenty countries. After twenty-five applications, much has been learned about the method. Insect mortality is quite easy but the most important factors for a successful fumigation are corrosion management and releasing the carbon dioxide from the vessel.



Dr. Jerry Sullivan and David Mueller performing a Combination Fumigation with carbon dioxide vessel at a mill.

Several important points have been observed since the last time this topic was presented at this meeting in 1994 by John Mueller. Corrosion management is essential in a modern food plant or flour mill when using phosphine. Corrosion at certain levels of relative humidity, and phosphine can cause serious damage. The correct dosage of magnesium phosphide and the correct sustained concentration is dependent on the amount of moisture present. The correct duration of the fumigation is directly dependent on the

concentration and relative humidity also. A rainy day can cause the relative humidity to significantly rise inside a building. The carbon dioxide will dry out the air in the plant. It will not dry it out enough to stop corrosion at high levels on a rainy day though.

The fumigator can control the level of phosphine gas in a fumigation by adding or extracting the packaged material. Careful management of the concentration is essential in the first 12 hours of the fumigation. The mixture of phosphine, heat, and carbon dioxide will stabilize at this time.

Carbon dioxide is a very tricky and deadly gas to work with. It is much harder to control than people think. We work with a 20 ton vessel the size of a small submarine that contains an inert gas under extreme pressure at -40° C. To heat this gas under extreme pressure to +20° C is not an easy task. To reach 30,000 ppm in the building as soon as possible takes some added expertise. The key to this method being successful is in the process vaporizer. If this is not available, the lines in the vessel will freeze solid and the carbon dioxide will not be available for the

fumigation. The additional cost for this method over methyl bromide is largely with the carbon dioxide gas, the rental of the vessel, the rental of the processed vaporizer, and the transportation of the vessel to the site.

After over twenty-five fumigations using heat, carbon dioxide, and

phosphine, it appears now more than ever that this method can replace certain uses of methyl bromide throughout the world with the care of a skillful fumigator.

Since the invention of this method in 1993, approximately 75,000 lb. of methyl bromide has been substituted. The potential is millions of pounds eliminated worldwide. *

by David K. Mueller

Museum Pest Management

Museums and churches are mankind's treasure chests. They hold the jewels and treasures of the past. They also have pirates that would like to steal and deface these objects. These pirates are insects and they are pests!

The pest control industry is called upon to protect these museums and churches with precious and sometimes irreplaceable objects from pests. The challenge of working at a museum is rewarding and stimulating, but very different from regular urban or industrial pest control.

"Start with the insects first."

In any pest management strategy it is important to know your enemy. Major pests of museums and churches are:

- Tineola bisselliella*
(Webbing clothes moth)
- Necrobia rufipes*
(Red legged ham beetle)
- Tinea pellionella*
(Casemaking clothes moth)
- Mus musculus*
(House mouse)
- Thysanura/Lepismatidae*
(Silverfish, bristletail)
- Anthrenus verbasci*
(Varied carpet beetle)
- Attagenus unicolor*
(Black carpet beetle)

By knowing the biology and habits of these pests of museums and churches, it is much easier to create an environment that these pests cannot tolerate and they will leave or they will die.

Pest management is the ability to use all your resources available to create this harsh living environment for pests. This could be with or without the use of pesticides.

Non-Chemical Control

Pheromone traps and non-baited sticky traps are very important detection tools. They are the eyes and ears that work day and night to help you identify a potential pest problem before it becomes a serious outbreak.

"The use of the Webbing clothes moth (*Tineola bissellella*) pheromone traps at the Field Museum of Natural History

ry was one of the most successful preventive conservation measures that I have been involved with. We were able to achieve all of the goals that we had set for ourselves," stated Christine Del Re, Conservation Consultant, Chicago, USA.



Pheromone trap for webbing clothes moth in a natural history museum collection area.

Pheromone-baited traps can be placed in sensitive areas.

These include the collection area that has animal products such as:

- ◆ wool
- ◆ woolen blends
- ◆ natural history objects
- ◆ botanicals
- ◆ grains

Articles that have wool in them are highly susceptible to clothes moths and should be inspected on a regular basis. These items should be identified with a red sticker as possible infestible objects. They could be placed in a freezer annually for one week at -18° (C).

Tips

The pest control operator should understand he/she is not allowed to touch any objects without permission. The museum/church conservator will normally move any objects that need to be closely inspected.



(Photo by Cap Sease, Chicago Field Museum)

Curators and conservators that have been entrusted with the care and protection of these objects are somewhat different from other people with whom we normally work. Their standards are very high and normally are con-

cerned over very small details. An example of this is the question of the insecticide being used and the carrier in this insecticide. Products that have a xylene base can cause problems with certain types of metals. This would not be a concern elsewhere.

A beautiful silver jewelry exhibit from Toledo, Spain was unrestorable to its original luster because it was stored in a room that had a carpet installed with an adhesive that caused silver to tarnish. No one considered this possibility.

Remember that the first responsibility of the museum and church conservator is to store and protect these objects for the future. The second responsibility is to display them for the general public. The normal museum will only exhibit 5% or less—95% is stored in a collection area for teaching, research, and preservation for the future. Remember also that the people who work in a museum or church are not necessarily knowledgeable about insects and pests. They are normally very educated, well read, anti-pesticide, and have not taken the time to study pest control very well.

COLD Treatment

One of the most accepted desinestation tools for museums and churches is cold treatment. Obviously, care should be taken not to freeze, freeze some objects, but there are many objects that will allow this pesticide-free technique. Objects being treated should be wrapped in plastic bags first to prevent damage from condensation. A gradual heat up of the object after the cold treatment is advised. Heat and cold are being used successfully in pest management programs throughout the world today.

When thinking about non-toxic pest control, many practitioners often wonder how they will be paid for their services if they don't spray or fumigate something. The pest control industry should be paid for solving problems and not for how many gallons of bug-spray it disseminates.

The future of the pest control industry is to find niches that take an added expertise and get paid for being problem solvers.



Museum and church pest management can be a stimulating and profitable niche in pest control that will offer new challenges. *

By David K. Mueller, BCE

Written for Parasitus (Spain)

IGR Gentrol: Fog GENTROL

Gentrol[®] Point Source



The Insect Growth Regulator Gentrol from Sandoz Agro, Inc. has been available for fogging in food areas **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."

A supplemental label will allow the user to tank mix Gentrol (Zoecon RF-259 EC) with an adulticide 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 re-entry period for fogging 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 that could treat their entire facility. A **food handling establishment** "is an area or place other than a private residence in which food is held, processed, prepared and/or saved." A **food area** of a food handling establishment "includes areas for receiving, serving, storage, packaging, preparing, edible waste storage, enclosed processing system".

IGR's, like Gentrol, are going to be major tools in a pest management strategy. The ability to fog Gentrol in a food area is good news for those who practice pest management in the United States. *

Sharing Through Education

Fumigation workshops were recently held at Barkley Lodge in Western Kentucky and The Port of Catoosa in Tulsa, Oklahoma. The informative workshop in Oklahoma contained one day of class room presentations and one day of in-the-field fumigation training. Speakers on the first day included Dr. Gerrit Cuperus, Oklahoma State University, David and John Mueller, Fumigation Service & Supply, Inc., Kim Kemp, Ralcorp Foods, Inc., Jerry Sullivan, Ph.D., Sullivan



John Mueller and Bob Kelly demonstrate hands-on barge fumigation

and Associates., Craig Jakob, Gustafson, Inc. Jim Criswell, Ph.D., OSU. In all, over 100 people participated in these workshops from 14 U.S. states, Puerto Rico, Canada, and Mexico.

Program Chairman David Mueller stated: "What I enjoy about these workshops is the informal atmosphere that encourages people to share their techniques, methods, experiences, and knowledge with someone from another industry or even a different country.

Sharing through education has been a theme that runs through all of our programs, whether it is in western Kentucky or Bologna. The people that come to our programs are not really looking for credits for their license. They are coming to learn how to get better at their job." *

Fumigation Tip

...helps prevent law suits

More important than respiratory equipment (gas masks) is your gas monitoring equipment. It is a must if you are doing fumigation work. This equipment comes in several different

brand names, costs, and shapes. One of the most commonly used air sampling devices is the Dräger pump and Dräger detection tubes. This is a simple bellows pump that, when squeezed, will pull 100 cc's of air through a calibrated glass tube. If a specific fumigant is present, the tube will colorimetrically change to show the level in parts per million (ppm) or percent by volume (%).

Tubes

There are over 200 types of tubes available for most industrial contaminants. Fumigants have various high and low range tubes. High range are for getting a history of the fumigated structure and to help with the efficacy. Low range tubes are mostly for worker safety. Safe re-entry into a fumigated space is extremely important. During an average food plant fumigation, dozens of detection tubes will be used during and after the fumigation.



It is important to retain these tubes for your records. Since the color will fade in the tube over time, it is necessary to immediately mark the reading on the tube with a permanent marker. The date and time should be added on the tube. These tubes become physical evidence that the fumigator took gas samplings and recorded the level. It is the best way to show that human exposure was monitored and safe levels maintained. This information can be shared with the non-applicators who are re-entering the previously fumigated area to give them peace of mind.

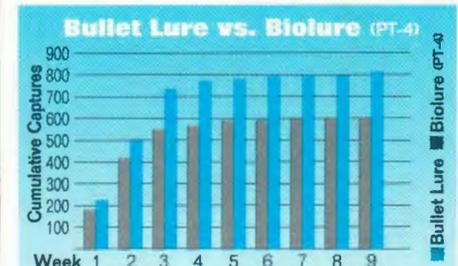
Good advice

On your next fumigation with phosphine or methyl bromide, "break a few tubes and retain them." *

Pheromone Lure Testing

Bullet Lure® outperformed the Biolure® (PT-4) by 14%

Insects Limited, Inc.'s Bullet Lure for moths infesting stored-products consistently outperformed the Biolure® (PT-4) in a recent study. Larry Pierce of Food Protection Services (Mililani, Hawaii) performed these tests in a 4500 cubic meter food warehouse on the Island of Oahu. The lures were tested for efficacy in catching Indian-meal moths (*Plodia interpunctella*) as well as Almond moths (*Cadra cautella*).



Graph shows the difference in cumulative captures of Indianmeal moth and Almond moth combined. Bullet Lure caught a total of 824 moths whereas Biolure (PT-4) caught 611 moths.

The testing consisted of 100 trap sites with one Bullet lure and one Biolure (PT-4) at each site. The traps were placed eight inches apart and at eye-level. They were monitored weekly over a period of 16 weeks from late February until early June.

Pheromone Tip

Over 1000 pheromones have been identified for specific insects. Many of those include the insects that attack stored products. However, there still are many economically important pests that have no pheromone identified. In the absence of a pheromone, it is useful to substitute a preferred food source. Imagine if you were eating hamburgers every day and one day you smelled a sizzling steak. Would you be attracted? Imagine if you were an insect eating boring wheat all day, every day, and someone offered you sesame oil. Imagine if you were in a

(continued on page 8)

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, B.C.E.

Insects Limited, Inc., 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

OLIB/WPRS, Italy

Entomological Problems in Food Plants (Filière)

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

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

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

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

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

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

Robert Corrigan, Ph.D.
Purdue University, 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, USA
*Developing an Organic
Pest Control Business*



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

David K. Mueller, B.C.E.
Insects Limited, Inc., USA
New Technologies

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 Re-
search, Bordeaux, France)
*New Technologies in
Grain Protection*

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

Professor L. Süss
University of Milano, Italy
*IPM: What it Means in the Ital-
ian 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

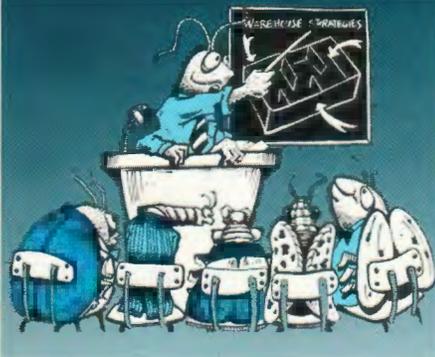
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Local Arrangements Chairman

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*If you have any questions
or would like to register
call (1) 317-846-5444 or
fax (1) 317-846-9799.*

Conferences Workshops



Upcoming Conferences and Workshops

Fumigation Recertification Training*

December 13, 1995
Ohio Pest Control Association,
Columbus, OH

Fumigants and Pheromone Training**

January 9-13, 1996
Purdue Pest Control Conference
West Lafayette, IN

Fumigants & Pheromones Technical Conference***

February 14-15, 1996
Bologna, Italy

Food and Grain Protection Workshop***

April 23, 1996
Cedar Rapids, IA

* IL/FSS will attend this conference

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

*** IL/FSS is organizing this
conference

Pheromone Tip

(continued from page 5)

museum all day, every day, feeding on the fat left on a turtle shell and you smelled the aroma of raw ham or bacon. Imagine a cockroach living in a grease pit and it smells the aroma of starch, liquid, and sugar (ie. beer, potatoes, raisins), you may leave to feed on a buffet that is surrounded by sticky glue on a glue board.

*New pheromones are being developed at an impressive rate every year, but in the absence of a perfected pheromone, think about offering a preferred food attractant instead. **

Fumigation Tip Better Trailer Fumigations

For years the pest control and food protection industries have been asked to fumigate truck trailers containing stored products. The overall results of these fumigations have been questionable at best. This can be remedied if care is taken to pick the correct type of trailer and seal it properly.

Fumigants

The fumigants presently available for fumigating *static* trailers are: methyl bromide (with or without chloropicrin) and metal phosphides (aluminum and magnesium phosphide). All fumigants are restricted use pesticides and should be handled by certified and licensed applicators only. Methyl bromide is available in cans and cylinders. Metal phosphide is available in solid pellets or prepackaged forms.



Refrigerated truck trailers make great fumigation chambers.

Methyl bromide is normally used for fumigating trailers because of the 24 hour or less label recommendation. Metal phosphides are used for sensitive items that are affected by methyl bromide (high fat content food, woolens, seeds, bulbs, furs, rubber goods, articles containing sulfur, leather goods, iodized salt, charcoal, foam rubber, etc.)

Phosphine is also used where deeper

penetration is needed. Phosphine normally takes three days or more to be effective.

Trailers

There are different sized trailers: 40 foot, 45 foot, and 48 foot long. It is important to calculate the volume to be fumigated correctly. It is also important to stage the trailers in a safe area that is shielded from the wind, near an electrical outlet for aeration and away from people. Care should be taken to place warning signs and security locks on all trailers.

Most regular truck trailers are *not* very tight and not easily sealed. The wooden floors and many rivets can allow fumigants to escape.

One excellent way to insure a good seal of a trailer is to rent or purchase a "reefer trailer". These refrigerated trailers are insulated and very tight. The reefer unit can be reversed to heat the commodity and the cooling/heating unit will blow large amounts of air over the commodity after the fumigation to aerate the trailer quickly. They can be heated in cold weather to ensure a successful fumigation.

"One good thunderstorm or heavy gust of wind can flush a trailer of the fumigant and cause a failure."

The cost of renting the reefer trailer and the need to keep the unit filled with fuel will be about \$75-125/day. Using reefer trailers could be the difference between having a successful trailer fumigation or a poor and expensive trailer fumigation. *

Source: D. K. Mueller, *Pest Control Magazine*, October 1995

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