

# Fumigants & Pheromones

Issue 45  
Spring 1997  
Routing:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

A Newsletter for the Insect Control & Pest Management Industry

## Bugs for Sale

*Bioassays...  
Dead or Alive?*

Like a canary in a miner's cave, live insects placed in a fumigated area can give an excellent indication when an effective fumigation is performed.

Pest managers should use bioassays (live insects or mice) for three reasons: 1. increase the confidence level with the customer 2. increase the competency level of the fumigator 3. test for potential resistant strains of native populations.

The customer should be given the vials containing ten insects each with enough food to survive for up to one month. These bioassay vials should be



**Fumigation workshop shares latest technologies on methyl bromide alternatives and new methods to protect food and grain. 1997 Fumigation Workshop: Row 1 (l-r): L. Pierce, C. Altamirano; Mexico, J. Sullivan, H. Pagan; Puerto Rico, T. Byrne, B. Ryan; Australia, L. de Moura; Portugal, R. Vincent, C. Sora; Canada, M. Rao; Oman, D. Bureau; Canada, J. Lemons, D. Rees; Australia, C. VanNatto; Canada, Row 2 (l-r): J. Mueller, D. Mueller, S. Sullivan, N. Alexandridis; Greece, N. Pruthi; India, J. Weier, P. Kelley, H. Lange; Denmark, C. Krueger; South Africa, B. Batzer, B. McSwigan, S. Six, F. Arthur, L. Clark; Canada, G. Pageau; Canada, M. Mahew; Canada, Martin St. Pierre; Canada, Ott Bowe, B. Pruthi; India, R. Amichai; Israel, A. Liscombe, R. Liscombe, E. Amichai; Israel, L. de Mouri, Portugal, G. Berg, K. Shible; Canada, K. Conover, Row 3 (l-r): D. Allen, B. MacKillop; Canada, M. Sheperdigian, J. Sawyshyn; Canada, Top Row (l-r): C. Schmidt, B. Lenburg, B. Schneider, Top Right Row (l-r): J. Spohn, M. Hettinger, T. Hodgson, Bubba.**

placed throughout the building being fumigated. The customer may want to challenge the fumigation by placing a few vials near windows, elevators, and potentially difficult locations. Other bioassays should be placed carefully in sifters, rollstands, conveyors, and other processing equipment. Care should be taken to take one or two vials to a non-fumigated location to act as a control check.

The customer needs to make a detailed map of the locations where the vials are placed. FSS places a fluorescent ribbon near the vials to act as an easy locator.

John Mueller, Director of Service for FSS stated: "We have one customer who requests 200 bioassay vials containing ten live insects each for his fumigation. If any area has above a 10% survival rate, that area will have to be retreated." Most average fumigations

require 20 vials.

Dave Mueller of FSS stated: "We start-

(continued on page 2)

## ARTICLES IN THIS ISSUE

- 🦋 Bugs
- 🦋 Conference Review
- 🦋 Dave's Soapbox
- 🦋 Methyl Bromide
- 🦋 New Mallis
- 🦋 Upcoming Seminar
- 🦋 New PortaSens
- 🦋 AVERT Gel Bait

### Bubba is Born!

**Born:** 2/21/97  
**Weight:** 36,789 lbs.  
**Capacity:** 24,000 lbs. of carbon dioxide  
**Eyes:** 2 x 60 kw in-line processors  
**Hair color:** White, with a 40 line corrosion management system  
**Christened:** March 21, 1997 on 3.6 million ft<sup>3</sup> Combination Fumigation  
**Father:** Bubba's father and designer John Mueller of FFS beamed his approval of this bubbling baby boy: "Carbon dioxide can help fumigants work better by speeding the respiration of the target insect pests and shortening the fumigation time. Our new vessel will help our customers receive the latest in ozone protection technologies available."



## Bugs For Sale

(continued from page 1)

ed using mixed stages of several different stored product insects on our Combination Fumigation trials and found that the Confused flour beetle adults were the best target pests to use not because they were the most difficult to kill, but because they are always laying eggs while in the vials. The one to five days prior to placing the bioassays allow for the adult females to drop some eggs in each vial. The fresh hatched one and two day old eggs from a flour beetle are very tolerant and hard to kill. We incubate the vials post-fumigation for 30 days and check for mortality. In the Quaker Oats test last year in Peterborough, Ontario, the Canadian Grain Commission placed over 3,500 mixed stage bioassays during a Combination Fumigation trial. Immediately after the fumigation all 3,500 flour beetle egg, larvae, pupae, and adults were dead. After 30 days at 27°C and 60 RH in our growth chamber, 0.8% survived. This was obvious



by the small size of the larvae (first or second instar)." When rodents are the target pest for a fumigation, mice can be live captured or purchased at a local pet store for bioassays. Because of the very rapid respiration of a rodent, they normally expire in a few hours.

In a test fumigation in Hawaii, one species of insects appears to repeatedly have been able to survive levels of fumigant that killed all other test species and native species. This increased tolerance or possible resistance is being tested by an expert government lab for verification. After

almost 50 years of use with phosphine and 75 years with methyl bromide, now could be the time in which control failure resistance could begin to creep into our insect populations. This method of comparing laboratory strains with native strains will help identify early resistance and allow for a timely resistance management strategy to be introduced while the problem is still young.

**Fumigator's Tip:** If you are not using bioassays now during your fumigations or ULD foggings, start this year. It should help increase your customer's confidence in the performance of the work we do, and it acts as 'a report card' for our performances. In all, it should make us all better at our jobs.

For a full list of all the available bioassays from *Insects Limited, Inc.* contact Angie at 1-800-992-1991. 🐛

## Dave's Soapbox



"Face piles of trials with smiles. For it riles them to believe that you perceive the web they weave, and keep on thinking free." Moody Blues, 1973

One day while studying for final exams at Purdue I received a handwritten note from a friend of mine with these lyrics penciled. It was a stressful time when term papers were due, social responsibilities seemed important, extra curricular activities were demanding, and life seemed a little complicated as I remember today almost 25 years later. Luckily I didn't have a wife, three children, or over 850 past payrolls to make on time, yet!

Today, when times get a little crazy, I pull out this well worn note and a smile comes to my face, "Face piles of trials with smiles..." What a good message for all of us.

Lately, I have been hearing much about how I am hurting the processed food and milling industries by bashing methyl bromide. The fifth article in Fumigation Service and Supply's

Statement of Purpose is: To be known as innovators for the future of fumigation. It is our challenge and focus to help our customers solve pest problems today and to anticipate changes that might place our customers in "Harms Way" in the future. We are trying to help protect stored products with the absolute safest, environmentally friendly, the most effective, cost competitive products and services available while upholding our integrity and fairness.

Several 'distractors' have started a verbal, letter, and magazine article campaign to discredit our search for alternatives to this aggressive ozone depleting fumigant that is widely used by this food and milling industry. Why?

It is obvious that if you manufacture methyl bromide, you would be concerned that the loss of one of your Major product lines would hurt profits. However, I believe that Great Lakes Chemical Company and the Dead Sea Bromide Group, major producers of methyl bromide, have been pretty good about recognizing the seriousness of the situation and working together for compromises where possible. They lobby hard with key countries on this issue, but they are very professional and take time to listen to other's viewpoints. If not the manufacturers, then who?

Some of the 'older school' fumigation companies have an ingrained 1950-1960's philosophy (Malathion Mentality) that selling chemicals to control insects is what worked in the past and will continue to work in the future. They have been chemical salesmen for so long they can't really change, even though they know that change has occurred all around them. These are the 'distractors' that are waging a campaign to discredit companies developing and searching for alternatives to methyl bromide.

These alternatives are necessary to protect this planet and comply with global agreements of which our country has been the leaders, architects, developers, bankers, and promoters. Hey, the Clean Air Act, authorized by Congress to stop production and importation of this fumigant, takes effect less than 30 months from now...2 1/2 years! A temporary stay would still mean that alternatives need to be researched, field tested and registered immediately without delay to meet imposed deadlines of 2001, 2005, and 2010.

For the past five years the 'distractors' have whispered: "If we don't find alter-



## Current Phaseout Schedule for Methyl Bromide

### Developed Countries

(U.S., Europe, Japan, Australia, etc.)

2001, January 1 - 25% reduction of use

2005, January 1 - 50% reduction of use

2010, January 1 - 100% phase out of methyl bromide

In the United States the present Clean Air Act calls for stop production and importation 1/1/2001.

Denmark, Sweden and The Netherlands: 100% phaseout of methyl bromide by 1998.

Canada will reduce 25% of methyl bromide sold by 1998 with a system that distributes 25% fewer tickets for the purchase.

### Developing Countries

(Mexico, Costa Rica, Kenya, etc.)

50% reduction of methyl bromide by 2010 (No complete phaseout adopted)

The meeting in Montreal will focus on the developing countries (Article V) and their research needs.

### Percent Usage of Methyl Bromide

82% Developed countries (Article II)  
54 million lbs./ year

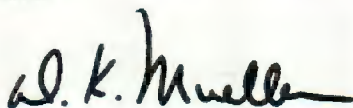
18% Developing countries (Article V)  
12 million lbs./ year

natives they can't take methyl bromide away from us" to their customers and the milling and food processing industry. If they continue denying the problem and question the science then methyl bromide will look too important to stop production and importation by January 1, 2001.

Wrong. This issue is bigger than methyl bromide. Listen to the Parties of the Montreal Protocol. Listen to over 150 countries making United Nations decisions that, for the first time could harm the individual countries for the good of the whole. Listen to the hundreds of qualified atmospheric scientists that call for the removal of ozone depleting products in a timely and organized matter. Dial up NASA's Homepage [http://spacelink.msfc.NASA.gov/home.index.html](http://spacelink.msfc.nasa.gov/home.index.html) and look for yourself at the TOMS satellite photos and even movies that explain how very important this ozone layer is.

This same ozone layer that will have to filter UV light for our generation and our children's children.

**Take Home Message:** Our planet can be very fragile at times.... how about all of us helping out in its time of need?



P.S. "...because it riles them to believe that we perceive the web that they weave, and keep on thinking free."

## Update On The Methyl Bromide Phaseout



Bill Thomas, Methyl Bromide Program, EPA, Washington, DC

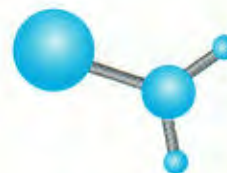
Methyl bromide is a broad spectrum pesticide used to control pest insects, nematodes, weeds, pathogens, and rodents. Globally, this material is used most frequently to control pests in the soil (75% of total use), but also against pests in grain and other durable commodities (13% of total), to protect fruits, vegetables and other perishable commodities against pest infestations during transport and storage (9%), and to control wood destroying insects and rodents in buildings, aircraft, ships, and other structures.

In addition to being a widely used-pesticide, methyl bromide is an efficient ozone depleting substance (ODS) in the stratosphere. The 1994 Science Assessment of Ozone Depletion, a document prepared by nearly 300 of the world's leading atmospheric scientists, lists the ozone depletion potential (a regulatory benchmark) of methyl bromide as 0.6, and reports that "An uncertainty analysis suggests that the ozone depletion potential (ODP) is unlikely to be less than 0.3" The report quite clearly states that "Methyl bromide continues to be viewed as a significant ozone-depleting compound." Additional research is ongoing to address outstanding uncertainties and to define the precise ODP, which may turn out to be slightly higher or lower than 0.6.



ozone (O<sub>3</sub>)

Methyl bromide reaches the stratosphere through emissions from agricultural pesticide uses, from the burning of biomass and leaded gasoline, and from the oceans. Winds and atmospheric mixing carry this pesticide to the stratosphere. Once in the stratosphere, high energy radiation from the sun release a bromine atom by breaking the bond between the bromine and the methyl group. This bromine atom is in the very reactive state, and will destroy molecular ozone (O<sub>3</sub>). The bromine atom will also react with non-reactive molecules in the stratosphere that contain chlorine, liberating the chlorine, which will then destroy additional ozone molecules. Because of this "chain-reaction", the bromine from methyl bromide is over 50 times more effective at destroying ozone than the chlorine from CFCs on a per atom basis.



methyl bromide

The destruction of stratospheric ozone molecules results in a thinning of the ozone layer. Since ozone blocks radiation that is harmful to life, the destruction of this thin layer will result in an increase of radiation reaching the surface of the earth. This ultraviolet radiation is harmful to biological organisms, including crop plants and human beings. The amount of methyl bromide produced by agricultural and other anthropogenic sources has considerable impact on stratospheric ozone, disrupting the natural balance of the atmosphere and increasing the amount of hazardous UV radiation that reaches the earth's surface.

In the United States, the U.S. Clean Air Act Amendments of 1990 (title VI), requires that any ODS with an ODP of 0.2 or greater be listed as Class I substances and be phased out within seven years. Under this authority, and with due consideration of the science, the U.S. Environmental Protection Agency (EPA) took regulatory action in 1993 to prohibit the production and importation of methyl bromide in the United States after January 1, 2001

(continued on page 6)





## 1997 Fumigants & Pheromones Technical Conference and Workshop

**F**umigants & Pheromones' Food Protection '97 attracted over 250 participants including international guests from, South Africa, Canada, Belgium, Denmark, England, Germany, Israel, Oman, Italy, Greece, Portugal, Japan, The Netherlands, Australia, Mexico, and India. Since 1982, over 2000 people have attended these food protection seminars sponsored by Insects Limited, Inc. of Indianapolis.

The four day conference, March 18-21, 1997, included two days in Chicago for a well-organized lecture format and two days at Purdue University for a hands-on workshop format. The workshop featured new techniques in fumigation including several methyl bromide alternatives: the new Eco<sub>2</sub>Fume cylinderized phosphine fumigant, a Vikane demonstration, the new Combination Fumigation alternative, grain bin fumigations, and a German method of pressure testing buildings prior to fumigation.

The 10th Fumigants & Pheromones Technical Conference in Chicago drew a full house consisting of 35% food processors, 25% international fumigation companies, 15% U.S. based fumigation companies, 10% researchers/government, 15% media, museum and other. In all, over 250 people participated in the 1997 Fumigants & Pheromones Technical Conference and Workshop. The next conference will be in York, England, April 1-3, 1998.



▲ Beautiful weather blessed this year's Fumigants & Pheromone Technical Conference and Workshop.



▲ Pat Kelley, general manager for FSS demonstrates sealing techniques to his rotating group at the workshop.





▼ Dave Mueller, talks about the new ATI PortaSens phosphine detection equipment to his rotating group at the fumigation workshop.



▲ Pictured are international attendees from Mexico, Portugal, Canada, USA, Oman, and India. John Mueller, workshop organizer, demonstrates fumigation techniques.



▲ Dave Mueller and Tim Hodgson demonstrate the Combination Fumigation by administering carbon dioxide from their new 24,000 lb. vessel at Purdue's experimental feed mill.



▲ Over one hundred attended the Fumigation Workshop held at Purdue University's Agricultural Experimental Farm.



◀ The 1997 Wendell Burkholder Award was presented to Dr. Rudy Plarre by David K. Mueller and Dr. Burkholder.

► Dr. Werner Plarre, Rudy's father, and mother Rosi (pictured far left) attended the Chicago meeting from Berlin





## Methyl Bromide

(continued from page 3)

(December 10, 1993 - 58 FR 65018). In addition, this regulation froze U.S. production in 1994 at 1991 levels. The U.S. phaseout applies solely to production and imports and does not restrict the use of methyl bromide before or after 2001.

Part of the U.S. regulatory effort is to insure that farmers have access to new pesticides as soon as possible. To do this, the U.S. Environmental Protection Agency Office of Pesticide Programs has set up an accelerated registration process for alternatives for methyl bromide. This program speeds paperwork and support functions during the registration process. A task force has been set up to track alternative development, and monitor the program for problems.

With regard to the issue of alternatives to the use of methyl bromide, pest control tools exist today which manage many of the pests controlled by methyl bromide. An alternative to methyl bromide will depend upon the specific target pest and crop. There is no one alternative for all of the uses of methyl bromide, but there are several pest control tools which can manage the pests currently controlled with methyl bromide. Viable alternative materials need not be identical to methyl bromide, but must effectively and economically manage those pests which are now being controlled by methyl bromide. Numerous chemical and non-chemical pesticides are available now which effectively control many of the pests for which methyl bromide is used. In addition, research on alternatives is underway and will likely result in a wide range of options, depending on the pest, crop, and current use of methyl bromide. While economic disparities may occur in the short-term, alternatives will likely be viable in the long term.

Booklet now available from the EPA: "Alternatives to Methyl Bromide, vol. Two: Case Studies; Soil, Commodity, and Structure. Vol. 1 and 2 can also be found on their website: <http://www.epa.gov/ozone/mbr/mbrqa.html> or contact the Methyl Bromide Hotline @ 1-800-296-1996. ♀

## Bugs

House flies make a noise that is in the key of F.

Yellow jackets mostly build their nests in the ground. Heavy spring and early summer rainfalls can saturate the soil and cause the paper nests to be destroyed by mold and fungus. During these wet years, the number of yellow jackets and incidence of stings are greatly reduced. What's this year going to be like in your region?

The word mosquito comes from the Spanish and Portuguese world for "little fly".



Once a female mosquito mates, it has no desire ever to mate again.

Only the female mosquito is able to bite. She needs that little bit of blood for her eggs to develop.

The mosquito has caused more people to die than all the wars in history. Certain species carry the germ that causes malaria. ♀

## ATI PortaSens

Introducing the PortaSens, gas detection instrument from ATI. The PortaSens is a lightweight, rugged, simple to use, direct reading electrochemical gas sensor instrument for the detection of PH<sub>3</sub> and many other potentially deadly and toxic gases.



The ATI manufacturers it's own electrochemical gas specific sensors to en-

sure quick response time as well as an equally quick recovery time for phosphine gas. Electrochemical sensors are a good choice for the detection of phosphine in both low and high concentrations because of their low cost, minimal cross gas sensitivities, direct reading/quick response and long sensor life. The instrument uses an internal micro pump, with a flexible tip probe, to pull an air sample into the sensor chamber where PH<sub>3</sub> is detected. The concentration of gas can then be directly read on the backlit, two line LCD display. The PortaSens can be ordered to detect PH<sub>3</sub> in one of two ranges. The first range choice is 0-1000 ppm which is perfect for large concentrations of phosphine gas during fumigation work. The second range is 0-1000 ppb, which is perfect for trace/residual phosphine gas detection for health and safety purposes. Both ranges have an accuracy of ±3% of reading and are accurate through the entire range.

The PortaSens also has two user friendly settable alarm points, low battery alarm and a pump out alarm to alert the user of dangerous gas concentrations or instrument problems. The PortaSens is powered by rechargeable NiCad batteries and can operate for twelve hours on a full charge and is designed to intrinsic safety standards.

The instrument comes ready to use in a storage case with a 10" wand probe, battery charger, mounting hook, filter packing and flow meter. PortaSens can be ordered to detect Ammonia, Ozone, Oxygen, Phosgene, Hydrogen Sulfide and many other gases.

Cost: \$2195.00 each

To order Call Fumigation Service & Supply 1-800-992-1991 ♀

## New Faces and Names



Mrs. Angie Resener (formerly Angie Richards) was married May 3 in Indianapolis. Angie is an entomologist and works with Insects Limited, Inc. Angie handles

many of your phone calls concerning insect questions and identification. Her husband Dave works for the IRS in Indianapolis.





**Joseph Spohn**  
Entomologist  
10540 Jessup  
Blvd.  
Indianapolis, IN  
46280  
1-317-846-3399

**J**oe has a strong background in entomology. He

graduated from Ohio State University in 1995. He worked around insects in the research labs at OSU and during his youth while in 4-H in Northern Ohio. Joe has several responsibilities with Insects Limited, Inc. in Indianapolis; he is doing basic research on Flour beetle (*Tribolium* spp.) behavior and pheromone. Joe is helping Angie rear insects for bioassays and testing. We now have over 20 species of stored product insects that take a lot of care. Joe is learning museum and food plant pest management and fumigation while training with John Mueller. Dave Mueller stated: "Joe is the person I go to when we receive a tough insect to be identified. His persistence and background in taxonomy will give the customer the accurate I.D. At Insects Limited we receive vials of unidentifiable insects specimens nearly every day from our customers. This is just one example of our commitment to customer service and our belief in *starting with the insect first.*"



**Daniel Clark**  
Chicago Regional  
Manager  
1-847-487-9169

Daniel has worked in commercial food related pest control for over ten years. He has a degree in

Biology and is multi-lingual in Spanish and French. This is very useful in communicating with workers in the Chicago food factories. Daniel spent four years in the army working as a pharmaceutical technician. John Mueller, Director of Service for Fumigation Services stated: "Daniel is extremely knowledgeable and pays attention to detail. Our Chicagoland office holds tremendous opportunity, and Daniel will help us grow in this area."



**Ricky Vincent**  
Food Safety  
Specialist  
10540 Jessup Blvd.  
Indianapolis, IN  
46280  
1-317-846-5444

**R**icky Vincent works with large food compa-

nies to help improve their food safety programs. His background with a major pet food company for ten years gave him the background to be a food safety specialist for Fumigation Service & Supply, Inc. He is originally from Bowling Green, Kentucky.

Ricky is also a crew leader for fumigations. He is a licensed fumigator who has already taken the AIB and Purdue correspondence courses, attended the Silliker Microbiology Short Course, FSS Fumigation Workshop, FSS seminars, and Good Manufacturing Practice (GMP) for the Food Industry Short Course.

Ricky was responsible for one of the first modernized food plant Combination Fumigations while working in Kentucky. Since this fumigation, he has performed six highly successful Combination Fumigations (total of 21,000,000 cu. ft.) while working along with FSS.

David Mueller stated: "I feel lucky that Ricky has joined our company. I have worked side-by-side with him during six Combination Fumigations and saw first hand how he interacted with his group. Ricky will help expand our food safety programs and busy fumigation schedule. His experience has been a tremendous asset to our company from the first day he started working with us."



**Bev Vehling**

**B**ev works for Insects Limited, Inc. in the area of pheromone lure production. She is an experienced assembler and prides herself on consistency and speed.

Bev is a native of Indianapolis and has a family which includes husband, John, daughter Barbara, son John, and "Max the Wonder Dog". In her free time, Bev enjoys reading and commercial art.

## New Mallis Handbook

*Eighth edition*

**T**he eighth edition of the Mallis Handbook of Pest Control is available from Insects Limited. This 30 chapter, 1500 + pages of useful information, and 500 + illustrations edited by Stoy Hedges was the collaborative effort of dozens of authors to update pest control's "bible" for pest control reference material.

David K. Mueller, BCE, of Insects Limited, Inc. was the author of two chapters, a new chapter on pheromones (Chapter 30) and he revised the Fumigation chapter that he revised in 1988 for the seventh edition. This represents about 100 pages of the most recent information about the practical uses of Fumigants and Pheromones in two easy to read chapters.

*Ordering information:*

For your copy(s) of the Eighth Edition of the Mallis Handbook of Pest Control, call: 1-800-992-1991, Fax - 1-317-846-9799, or e-mail: [insectslimited@aol.com](mailto:insectslimited@aol.com)

\$119.00 each \_\_\_\_\_

## AVERT® Gel Bait

*Now Registered for Use in  
Food Handling Establishments*



Avert® Crack and Crevice® Gel Bait has been approved by the U.S. Environmental Protection Agency for use in cracks and crevices

in food handling areas. This means that pest managers have a new, highly efficacious tool for use in challenging environments such as restaurants, hospital kitchens, food plants, and other food preparation and storage areas.


Accounts that deal with food handling have pretty high demands. They want fast, if not immediate, results yet they want low odor, low cost, and they don't want to shut down for you to treat. PT

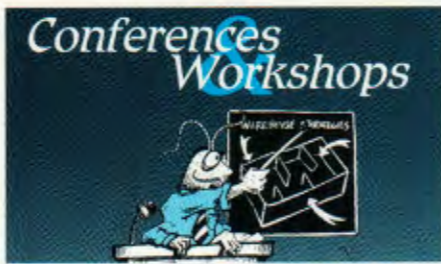
*(continued on page 8)*



**Avert***(continued from page 7)*

320 Avert Gel Bait will juggle their needs and help control roaches. Most baits don't work immediately, including Avert, one needs to be aware that results may take up to several days.

Glenna Racioppe, Marketing Manager for Whitmire Micro-Gen stated: "You can begin using Avert Gel Bait according to the new label directions in all states except New York and California. Whitmire Micro-Gen expects approval in those states in a few months." 



## Fumigation Re-Certification Seminar

July 25, Friday, 1997

Princeton, Kentucky

Sponsored by:  
Fumigation Service & Supply, Inc.

In cooperation with:  
Kentucky Feed & Grain Association  
University of Kentucky  
Kentucky State University

### Speakers & Topics

8:00-8:30 a.m. Registration

8:30-9:00

**Dr. Jerry Sullivan,**  
Sullivan & Assoc.,  
Harrisonburg, VA

*Fumigation Past and Present*  
9:00-10:00

**David K. Mueller, BCE,**  
Fumigation Service & Supply, Inc.,  
Indianapolis

*New Technologies in Stored  
Product Protection*

Break

10:30 - 11:15

**Jerry Berg,**  
Hedley Technologies, Ltd.,  
Kansas City

*Non-Chemical on Grain and  
Flour Mills*

11:15 - 12:15

**John Mueller & Ricky Vincent,**  
Fumigation Service & Supply, Inc.,  
Indianapolis

*Fumigating Grain Bins  
and Pesticide Safety*

### Lunch Break

1:15 - 2:15

**Dr. Sam McNeill,**  
University of Kentucky

*Controlling Pests with Good  
Grain Management*

2:15 - 3:15

**Ed Hitch,**  
Food Protection Services,  
Elizabethtown, KY

*Food Plant Inspections*

3:15 - 4:00 Break

4:00 - 5:00

**Dr. Paul Weston,**  
Kentucky State University,  
Frankfort, KY

*Stored Product Protection in the  
State of Kentucky*

Certification sign-out, certificates,  
evaluation.

**Cost:** \$100 per person  
\$ 75 for KFGA members

For Registration:  
Call Barb Bass @ 1-317-846-3399

Continuing education credits have

### Fumigation Service & Supply, Inc.

10540 Jessup Blvd.  
Indianapolis, IN 46280-1451  
317-846-5444  
FAX 317-846-9799  
E-mail: insectslimited@aol.com



Attention Mailroom Personnel (or Addressee) - Please Reroute if Necessary

been applied for in Kentucky, Indiana, Ohio, and Tennessee. Registration is limited to 75 people on a first-come first-serve basis. We urge you to register early and no walk-on registrations please.

### Visit our Homepage

<http://www.surf-ict.com/insectslimited,inc/home.html>

We update our homepage with new and useful information often.



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.



Copyright 1997 Fumigation Service & Supply, Inc. All rights reserved. No part of this publication may be reproduced or transmitted by any means without permission of the editor.

U.S. Postage  
PAID  
Carmel, IN  
Bulk Permit #14