

Fumigants & Pheromones

Issue 80
Summer 2006

Routing:



A Newsletter for the Insect Control & Pest Management Industry

FRUIT FLIES are everywhere... *Even in Space!*

The July 4th launch of the Space Shuttle sent more than just a few astronauts into space. A whole bunch of fruit flies went along for the ride to be part of another scientific space mission. On Earth, however, these flies are more of a nuisance than a well controlled experiment. These pesty summer flies are often found on overripe fruits, vegetables, and other organic foods that are damaged, fermenting in a state of decay.

Adult female flies lay eggs on these food sources, and, in about 30 hours, the eggs can hatch into larvae called maggots. They will feed on the surfaces of these food materials for 5 to 6 days, and then crawl away to dryer areas to pupate. One day later the adult fly emerges from the pupa to restart the fly cycle over. Every week one gravid fruit fly can produce 500 offspring.

During the summer months, fruit flies can become a nuisance in homes, commercial food areas, and a real risk to food quality if one falls in the product before or after manufacturing. In the manufacturing process the key to controlling fruit fly outbreaks is with regular cleaning. Detection of fruit flies is important to determine the presence of the fast growing insect pest.



Fruit fly (Drosophila melanogaster)

The new SmartWay® Fruit Fly trap from Insects Limited is a new tool available to manage this pest. Monitoring the locations of the flies and concentrating the cleaning process in those areas will help eliminate the fruit fly problem.

Fruit fly traps are not new, but the improvement of this new trap allows a simple and economic approach to monitoring fruit flies. Unlike pheromone traps, fruit fly traps use a natural scent that attracts the male and female flies into a liquid material that captures and holds adult flies.

In the home, fruit flies have increased in importance in the past ten years because of recycling. As pop cans and other containers are discarded and held for days or weeks until recycling, this small

and very mobile fly is an opportunist. The niche that fruit flies fill in nature is recreated by homeowners.

Another place where this small fruit fly thrives is in the late summer when vegetables and fruits are brought from the garden in abundance only to sit in the kitchen to breed the fruit flies generated while in the garden before harvesting. Many neighbors
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Fruit Flies *(Continued from page 1)*

Trap comparison; adult fruit flies (*Drosophila melanogaster*)

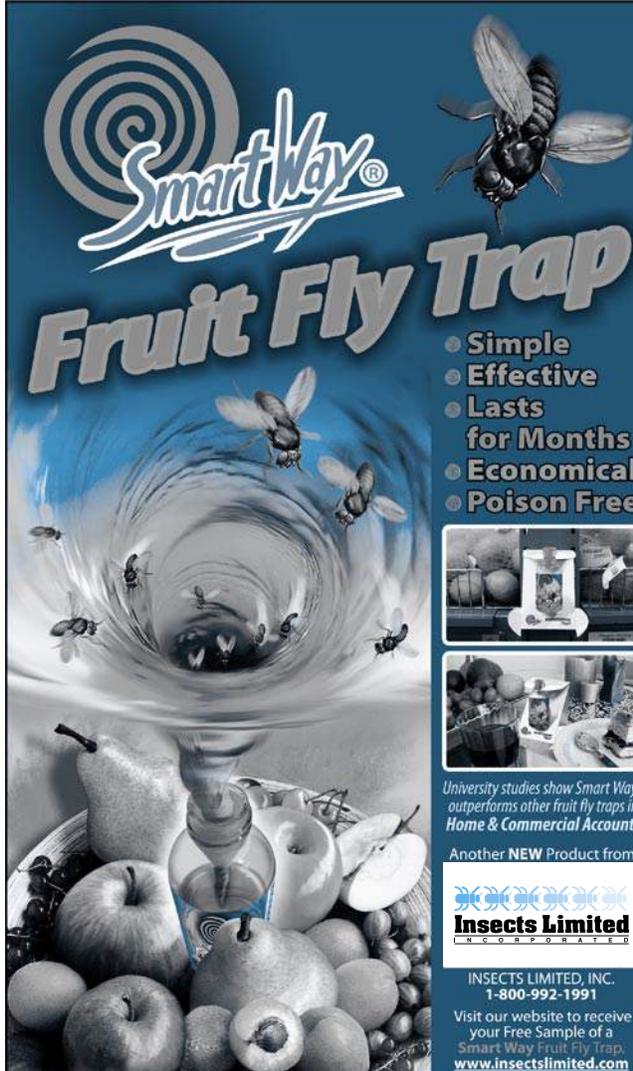
TRAP	TRIAL			TOTAL
	1	2	3	
Smart Way® 	1675 (88%)	2072 (90%)	451 (84%)	4198 (89%)
Natural Catch Plus® 	221 (12%)	224 (10%)	87 (16%)	532 (11%)
TOTAL	1896	2296	538	4730

Conclusion: *The SmartWay Fruit Fly trap was more effective than "Natural Catch Plus"*

University studies have compared various popular fruit fly traps.

grow too much for their family and offer their excess fruits and vegetables to others as a gift. With all the hard work that goes into growing these foods, we often wait until they are over ripe and then finally discard them. This leads to an outbreak in the home of pesty fruit flies.

Removing the rotting food source will greatly reduce the overpopulation of fruit flies. Using Smart Way® Fruit Fly traps can help locate and remove a fruit fly population in a home or commercial account.



Smart Way®
Fruit Fly Trap

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- Lasts for Months
- Economical
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University studies show Smart Way® outperforms other fruit fly traps in Home & Commercial Accounts

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ISPM-15

International Standards for Wood Packing Materials

New regulations discussed at a recent FAO meeting in Rome will change the dosage requirements on quarantine and preshipment treatments from x pounds / kg of methyl bromide per volume to C x T values (concentration x time). This will mean that more monitoring and potentially more add gas will be needed to reach the required concentration over time under various temperatures and weather.



Shipping Containers:

A commonly used means of transporting goods is in shipping containers like the one shown above. This is a great example of a static fumigation chamber.

It is estimated that there are **5 billion** wooden pallets circulating around the world in trade. These wooden pallets or wood packaging materials need to be fumigated or heat treated prior to exportation. Millions of containers have been fumigated world wide since the new ISPM-15 international regulation on invasive insects in wood was implemented in 2005.

Dave's Soapbox

...for what it's worth



Happy 25th Anniversary!

In the beginning...

1981—Allow me to look back for a moment and remember.

October 1, 2006 is the anniversary date of our companies. Let me review the early years starting in 1981. Jimmy Carter was President and interest rates were 13–14%. Credit cards commanded 19–21% interest and banks didn't knock on doors to offer lines of credit like they do today.

I was working for a company called Phostoxin Sales, Inc. of Alhambra, California, fresh out of Purdue with a degree in Entomology and too much ambition to sit still for a minute. At the age of 25, married, no children, I set out to carve my niche in the world of 'Bugdom.' Taking the lessons from the insects that I have come to greatly appreciate and often admire, I knew that if I could find that specialty niche, I could survive that first year and maybe, just maybe, build a company and career doing exactly what I wanted to do with my life. Big talk for a 25 year old with no money and no business background.

After writing a letter of resignation to my boss 7 times before I finally mailed it, I realized what self-employment really meant: no expense account, no company credit card, no medical insurance, no company vehicle,

and especially no company payroll check on Friday.

With new business cards, a new phone number, a college degree and 4 1/2 years of experience, I set out to find my niche. My wife Mary Beth was a school teacher and I knew that one income was there

even if it was \$8600/year. I had met many of the people in the seed and grain industry and thought that some of these people would become new customers.

After purchasing a 5 year old Mazda truck with 52 k miles for \$2000, I was able to move out of my garage and move into 10505 N. College Ave., Indianapolis. This 175 sq.ft. office was perfect for a start up business. Bob Springer was looking for part-time work and he agreed to answer the phone and handle the paperwork while I called on customers in the Midwest. There were many laughs that first year that I hope I never forget. I also hope that I never forget the support that I received from friends and family. People like Dr. Ray and Ann Liscombe, Dr. John Osmun, and Jim Dawson who gave me the confidence I needed to make it through the first winter. My wife never stopped believing in me. My father, Albert Mueller, helped every way possible. He continued to be an active part of our companies until he died in 2004. His advice and encouragement will not be forgotten. Words like: "You can't buy a reputation" and "I'm proud of you, son" echo in my ears today.

Mom was always in the background listening and cheering us on. She was full of advice, but only if you asked for it.

I have been very lucky. Picking people to travel with you on this business journey can be part luck, but in reality it is a lot of luck! Here are some of the people who stuck it out with me on this 25 year journey:

Mrs. June Beasley made a big difference in our company and how we evolved. The Beasley family all pitched in to help out in the busy summer months. June helped organize the first International Fumigants & Pheromones training programs along with Barbara Brookie. Barbara Brookie and June Beasley were always kind, friendly, generous, and hard working. In the beginning, each day was a new set of problems to solve and each day was a challenge to get better.

Survival didn't mean making money, it meant worrying about regulatory agencies, tax collectors knocking on your door, and lawyers with lawsuits lingering in the background. Each day my worries were not about making money when I awakened, they were about getting sued for something that I had no control over. Competitors are predacious when a small fish swims near their territory and we were the small fish that had to swim fast to survive.

Pat Kelley came to us via Purdue in 1986. His 20 years of loyal help have been rewarding to everyone who knows him. He is our utility player on our team that can fill in any position, any time. Pat recently wrote me a note that said: "Just a word of thanks and appreciation for all that you've done for Laura and me over the years. I think that you've created a wonderful work environment while maintaining great vision and profitability. It's been fun to be

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Dave's Soapbox

(Continued from page 3)

a part of it!"

John Mueller joined the company at the age of 22 in 1987. While developing his own style of business, he has worked endless hours to discover new techniques for stored product protection. Since 2004 he has taken over the helm of Fumigation Service & Supply and has done well. I'm sure Dad's words are echoing in his ears too.

Barb Bass was one of the lucky catches. From a simple ad in the newspaper for an office manager, in 1994, we found a gold mine in Barb and her ability to do everything and do it well. I am thankful for Barb everyday.

Before I thank our customers for allowing us to reach our 25th anniversary in business, I want to say thank you to those that now work at FSS and IL: John, Peggy, Brian, Merle, Nathan, Todd, Nolan, Dustin, Hank, Matt, Jeff, Curt, Eric, Peter, Victoria, Edith,

Karla, Kalah, Perry, Alain, Carlos, Victor, Barb Bass and especially my wife Mary Beth for all their help. Thanks to all the college students that have worked their summers at FSS/IL. Thanks also to all past employees for helping our businesses get better each year.

Of course, the customer is all important to a new and growing business. We see ourselves as problem solvers for stored product protection. Your problems have been our challenge to solve and sometimes the relationship between companies gets to be more than just business. Building relationships is most important and I want to say "thank you" to those that have befriended our companies in the past 25 years.

Invitation: You are invited to be our guest on October 1, 2006 at a party to celebrate our 25 years in business. Contact Kalah Stocker for details. kalahstocker@aol.com



Quotable Quotes



John Ruskin 1809-1900

"There is hardly anything in the world that someone cannot make a little worse and sell a little cheaper, and the people who consider price alone are that person's lawful prey."

It is unwise to pay too much, but it is also unwise to pay too little. When you pay too much, you lose a little money; that is all. When you pay too little, you sometimes lose everything because the thing you bought is incapable of doing the thing you bought it to do. The common law of business balance prohibits paying a little and getting a lot...It can't be done.

If you deal with the lowest bidder it is well to add something for the risk you run. And if you do that you will have enough to pay for something better."

—John Ruskin

"The taste of poor service lingers long after the sweetness of a low bid."

—Anonymous

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Flashpoint.

Let's Educate Rather than Regulate

Following Rachel Carson's book *Silent Spring* (Flashpoint #3), a reaction to the public outcry spawned the need for training and certification of pesticide applicators. The new EPA was given the responsibility to draw up the blueprint for this important program that would affect how we do our work today, over 30 years later. Dr. John Osmun was a major contributor to the pesticide laws that we work under today. He was a popular professor and former Department Head of Entomology at Purdue University. In this Flashpoint, Dr. John Osmun shares with us the evolution of pesticide applicator training and certification:

Flashpoint #4

The History of the Pesticide Applicator Training

by Dr. John V. Osmun



The national program of federal/state certification of pesticide applicators and the training that undergirds it

came into being in the mid 1970s. To understand the impetus behind this momentous event (and it was), we need to consider what led up to it and then focus on the future. It is my hope that this documentary will help put present requirements and procedures into perspective. We have now completed nearly

three decades of formalized pesticide applicator training and certification. It has been a period of increased technical competence, new application techniques, safer procedures, and keener environmental awareness. It has been a search for balance, pitting some risks against human needs. Not all goals have been achieved but the right direction has been established and progress is considerable.

Concern over pesticides reached a crescendo by 1970. In retrospect of three relatively short decades, the pendulum has swung completely. Those of us who were in college in the '30s lived with the reality of dozens of house flies in our kitchens, maggots in our cherry pies, and corn fields flattened by the European corn borer. So when the pesticide explosion occurred, triggered by the war winning and lifesaving insecticide DDT, the public clamored for the new chemicals. The late '40s and the decade of the '50s comprised an era of unbridled use, with no hint of restraint or constraint. If one pound of a chemical gave 100% kill, two pounds did it better. Man believed himself in complete command of nature and his own destiny. Fear of pesticides was virtually unheard of in those days.

But, we were kidding ourselves. Ominous signals appeared. The first was the unexpected development of insect resistance to the most important chemicals. Next came the environmental problems. Surprisingly, it was a writer and environmentalist who rudely shook us from our lethargy.

That was Rachel Carson, who in 1962 authored a book, *Silent Spring*—a devastating yet eloquent and compelling denunciation of pesticides. Carson was a gifted and often honored



Rachel Carson

and this acclaim, coupled with her reputation as a wildlife biologist, provided an air of credibility. Her

supporters hailed her as apocalyptic. She uncovered and then revealed environmental problems, and she was prophetic in her expression of fear for the future of our environment. At the same time, there were even more who condemned her, including some scientists caught up in their own little areas of success; agriculturists fearing loss of yield-enhancing pesticides; and a large segment of the manufacturing and using industries. It was easy to dislike her. There were numerous technical errors in her arguments.

However we may view *Silent Spring*, we should be thankful that it was Carson—not some government regulatory agency and not the media—that awakened us from our misdirected complacency. As startled and defensive as many were at the time, there arose a new awareness of ecology and the environment, and new avenues of research began to appear. However, the major spin-off from initial accusations about a few insecticides was the crescendo of public outcry over all types of environmental contamination: smog, smoking, belching chimneys, foul water, and waste.

For the moment, the image of all those who used or advocated the use of pesticides was seriously tainted.

The anxiety of the '60s carried over into action in the 1970s. For example, DDT was condemned and banned without its day in court. In one generation, it went from the most wanted to the most wanted

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Flashpoint

(Continued from page 5)

for execution. As a result of public pressure regarding environmental issues, both the Executive Branch and Congress responded. First, the EPA was established in 1970; next Congress enacted a “new” pesticide law in 1972 by an elaborate amendment of the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) as amended. As laws go, it was a good one.

“Pesticides in their entirety were caught up in the tide of discontent; soon, worthy chemicals were falling on the battlefield of public controversy!”

Pesticide Training—It is a little difficult to identify the beginnings. You can go back to the turn of the century and find that cities like New York had ordinances requiring standards for fumigators. Over the two decades prior to 1972, a number of states developed requirements for licensing commercial operators who marketed service for structural pest control. The word “certification” was used in connection with pesticides in 1969 by the Entomological Society of America in establishing the American Registry of Certified Entomologists.

Training of pesticide users was slow to develop in a formal manner. Many companies had in-house programs, as did the military, and certainly extension specialists had been conducting pesticide meetings for both farmers and commercial users since the early ‘30s. Formal university-sponsored regional conferences commenced in the

‘30s (Purdue 1937). In 1965, the President’s Scientific Advisory Committee identified a need to minimize possible risks in pesticide use.

The first federal efforts to identify training needs were those established by the Federal Working Group on Pest Management entitled “Task Group on Training Objectives and Standards.” In that two year-long study (1970-1972), we attempted

to identify the quantity and quality of information needed for various levels of persons using pesticides, ranging from laborer to pest management specialist. The report of this task group was frequently referenced when EPA developed its applicator standards.

Before FIFRA amended was enacted in 1972, it went through a tumultuous gestation period. It commenced two years before as a proposal of the Nixon administration written by the Council of Environmental Quality and entitled the Federal Environmental Pesticide Control Act (FEPCA). The latter focused on the protection of health and the environment. Through political maneuvering, it was assigned to Congressman Poag’s House committee on agriculture. Here, through endless hours of hearings and debate, it was wedded with the old FIFRA and finally passed as an amendment to the existing FIFRA Law of 1947.

Today Dr. John Osmun and his wife Dortha are very active travelers. John continues to serve on several committees at Purdue and is always willing to offer help, experience, and wisdom. He can be reached at: 2741 N. Salisbury, #2109, West Lafayette, IN 47906, tel. 1 (765) 497-9950, e-mail: Jvozzz@aol.com



Certification Highlights:

It tightened requirements for pesticide registration and provided for restricted use chemicals.

- It established the illegality of using pesticides in a manner inconsistent with its labeling.
- It brought considerable uniformity to regulations among the states by requiring compliance laws.
- It included provisions for supporting research and training.
- It required certification of applicators who apply restricted use pesticides. This necessitated extensive training. (Most states, voluntarily, extended the provision by requiring certification of commercial applicators using pesticides.)

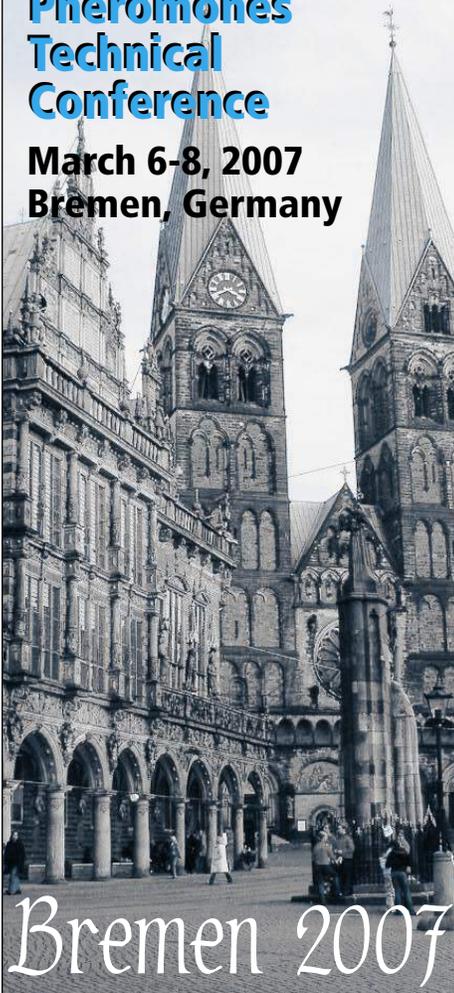
Once passed, it became the responsibility of the EPA to interpret FIFRA, write regulations, and put in place a national program. Regulations do not arise by spontaneous generation; they are not anonymous. Much debate, argument and compromise arose in those months. After all, no law nor regulation can work unless it has the support of the people concerned; in the final analysis, that is what we had. On February 22, 1974 the initial publication of the standards appeared.

For the full text of *Evolution of Pesticide Applicator Training* by Dr. John V. Osmun, go to www.insectslimited.com.

Editor’s note: *Today 10’s of thousands of certified and licensed pesticides applicators work under these rules. The United States’ pesticide certification program is a model for many countries throughout the world. It is truly a FLASHPOINT which has affected our lives for over ten years.*

8th Fumigants & Pheromones Technical Conference

March 6-8, 2007
Bremen, Germany



Famously historic city. 1,200 years have woven a rich tapestry of Hanseatic heritage and cosmopolitan culture in Bremen. Strife for independence left an indelible mark on the city. Today, the smell of sea salt and the sight of the ship captains' riches can be detected all around you when you enter the old city walls: The magnificent architecture or the famous Rathaus and the graceful Roland statue in Market Square (UNESCO World Heritage Site since 2004), the city's oldest living quarter at Schnoor with its unique fish restaurants, the exceptional structures in historic Böttcherstrasse and the imposing downtown cathedral that dates back to Charlemagne's time.

Bremen 2007 Speakers and Topics

Day 1:

Welcome and Introductions

- David Mueller, Insects Limited, Inc., USA
- Dr. Jürgen Böye, B & M Consulting, Germany

IPM Case Studies from the Real World

- Dr. Jürgen Böye, B & M Consulting, Germany
- Michel Maheu: Maheu-Maheu, Canada
- Vasilos Sotiroudas, AgoSpeCom, Greece
- Dr. Zurab Lobaldze, IPM Expert, Georgia
- Curt Hale, Fumigation Service & Supply, Inc, USA
- Paulo Guerro, Insecto, Italy

Stored Product, Mites

- Prof. Dr. Joechin Schliesske, Germany
- David Mueller, Insects Limited, Inc., USA

Methyl Bromide Alternatives

- John Mueller, Fumigation Service & Supply, Inc., USA
PROFUME® (sulfuryl fluoride) in flour mills and food factories
- Dow AgroSciences, France
The Current Status of PROFUME® in Europe



The sculpture of the Bremen Town Musicians next to the Rathaus comes from the Grimm Brothers' celebrated fairy tale.

Heat Treatment in the Post Harvest Sector

- Hans Hofmeir, ThermoNox, Germany
Heat treatment in Europe
- Larry Dean, Nestlé Purina, USA
Heat Treatment in North America
- Dr Anton Hasenböhler, Ketol, Switzerland
Heat treatment for pest control

Dinner and entertainment in the famous Rathaus of Bremen

Day 2:

New Technologies

- Professor Dr. Dirk Maier, Purdue University, USA
- Fumigation Systems Research & Development
- Bob Ryan, BOC Gases Australia
New Discoveries in Fumigants and Fogging
- Dr. Cornel Adler, BBA, Germany
A Review of Research on Stored Product Protection in Germany
- Detia GMBH, Germany
New fumigation research from Detia / Degesch

Wood Fumigations

- John Mueller, Fumigation Service & Supply, Inc, USA
Invasive Insects and ISPM-15 Treatments
- Dr. Rüdiger Plarre, BAM, Germany
Wood destroying insects

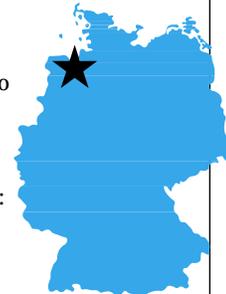
Pheromones and Biological Control

- Alain Van Ryckeghem
New Developments in Pheromones
- Dr. Rudiger Plarre
New Developments in Pheromones
- Daniel Fassbind, Disinfesta, Switzerland
Beneficial insects in stored products

Other speakers to be announced.

Day 3:

An Educational Trip to the Ports of Bremen and Hamburg Port of Bremen, overview of various port activities: breakfast cereal company, fish-meal, grain, coffee, trip to Roland Mill, explanation of heat and IPM, travel to Hamburg Harbor to visit a large cocoa bean warehouse, Harbor sightseeing tour via special boat: Explanation of Hamburg harbor and its many facilities and activities by Dr. Jochen Schliesske



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A Penetrating Observation



John Mueller

For several years now we have heard people discuss the advantages and disadvantages of sulfuryl fluoride. There seems to be a misunderstanding concerning sulfuryl fluoride used on old mills. The misunderstanding seems to be that sulfuryl fluoride can not be used on old mills because it is not effective at penetrating the layers of wood and voids which make up these elderly milling structure.

We have observed much different results on our sulfuryl fluoride [SF] fumigations. We observed dead flour beetles that came out of the floor voids and fell from areas of mills and food processors which we had not observed before. It is important to understand that the lethality of SF on adult flour beetle is very similar to that of methyl bromide, so why where we seeing changes in the post fumigation visual results? In situation were we used SF on mills with wood



These test boxes were placed in commercial mill fumigation using MB and SF. Gas concentrations and environmental conditions were closely observed.

floors we were seeing better results then that of methyl bromide in these sub-floor micro-environment. We felt the need to qualify this observation with some "field science." To do this we need to recognize the insect micro-environments which were the most difficult to reach in old mills. Wood makes up the majority of old mill structures—from flooring to main support beams.

We built a 'flour mill' like wood floor and sealed in three life stages [egg, larvae and adult] of flour beetles. This was repeated for each layer of flour mill wood flooring.

Summary: The results of these tests were that SF penetrated



twice as deep as methyl bromide. SF killed insects through two layers of wood floor were MB only kill half the bio-assays under the first layer. Both rates were total life stage treatment dosages. Mill temperatures for MB were 92° average and the SF average was 82° (32° and 28° C). In conclusion, we found that sulfuryl fluoride was a better penetrating gas than methyl bromide and thus able to offer better results in old mills than methyl bromide under similar conditions.

We will continue to test and observe other penetration features. If you have questions about this test please feel free to contact me at j.mueller@FumigationZone.com.



Fumigants & Pheromones is published by Fumigation Service & Supply, Inc. and Insects Limited, Inc. 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., 16950 Westfield Park Rd., Westfield, IN 46074 USA.



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Mills and Food Processing Structures



Flour mill with grain storage silos

ProFume(r) fumigant is a new concept in stored grain and structural fumigations. In this case the structures included buildings like flour mills and food processing facilities. Though it is new to the food market, it has been used commonly for several decades in fumigations for termites in the southern United States. It is common to see a home in Southern Florida, California, or Hawaii completely covered with a colorful plastic tent. The chemical used for such a fumigation is identical to ProFume, but registered under the name Vikane(r). Vikane has been used in the museum industry for many years to fumigate valuable, artifacts from the attack of an array of pest insects.

Fumigation Chambers - A fumigation chamber is a specialized room that is already setup so that there is only one door to be sealed to make a quick airtight structure. In California, these chambers are required to have exhaust chimneys 50 feet tall to prevent the gas from settling near people.

The Smithsonian in Washington DC developed a fumigation chamber onsite costing over \$250,000. Because of fear of potential gas leaks and safety concerns it was never used. It is common practice for museums to send these artifacts offsite to be fumigated to reduce the chance of a possible human poisoning.

Safety - Under EPA registration, the permissible level for re-enter of the structure is 5 PPM for Vikane, compared to the ProFume permissible level of 1 PPM. The chemical name of both ProFume and Vikane is sulfuryl fluoride. This gas is colorless, odorless, and non-flammable. In the termite fumigations of homes with Vikane, a strong warning additive is used in the form of another registered fumigant called chloropicrin. Chloropicrin is a good warning because it is commonly used with tear gas by police. Like with tear gas it causes irritation to the mucus membranes in places such as, eyes, nose, and throat.

Challenges - In 2004 ??, after the revision of the Clean Air Act, methyl bromide had stricter requirements placed upon it. Methyl Bromide was a widely used soil and structure fumigant that was found to cause serious damage to the stratospheric ozone layer. After methyl bromide is subjected to the sun's ultra violet light it breaks down and forms O₂ + O. Bromines break the bond between the O₃ molecules and are one of the causes of the ozone's reduction and a partial cause of global warming. The only way to obtain methyl bromide now is for quarantined and pre-shipment fumigations or special pre-arranged critical uses. The reason for the EPA crack-down of methyl bromide is because of studies in 1978 proving that bromines are the second leading cause of ozone depletion to chlorofluorocarbons (CFC's). There has been

much work done by the United Nations and the Montreal Protocol on CFC's. At one time CFC's were used worldwide in many products including refrigerators, aerosol cans, and air conditioners to name a few. These two organizations have worked with developing countries such as Thailand, Vietnam, parts of Africa, and South America to create programs for fumigations with alternatives to methyl bromide with much success.

An Alternative - Dow AgroSciences LLP of Indianapolis is the primary manufacturer of sulfuryl fluoride. Dow has recently shifted focus to fumigants for the flour-milling market with ProFume. Because sulfuryl fluoride is inorganic, it allows better penetration in a given commodity because it is less likely to bind to the organic properties of the product that are being fumigated. N ged

Another advantage to ProFume is it is required by the label to be externally administered. This reduces the exposure to the fumigator and makes the job much safer. Also ProFume has an electronic label called the Fumiguide(r). The electronic label is a software program that requires input of specific information including: type of structure, time period required, target life stage, and target pest. It is said that, "If you are not monitoring you are not fumigating." This new program will highlight specific areas where you need to add gas or extend the length of the fumigation. Add gas is any fumigant that is added after the initial fumigant release to achieve the proper concentration over time (CT value) according to the electronic label.

ProFume gave the commercial fumigation industry an alternative to methyl bromide that is not

corrosive to metals. Phosphine commonly would cause corrosion to computer parts and other such sensitive materials that were mentioned before. This caused much concern to both the fumigation company and the business owner in which the fumigation was conducted. Much time was devoted to removing such potentially corrosive items, but this is not the case with ProFume. ProFume has been called a “drop in replacement for methyl bromide on structures”.

Grain & Seed - ProFume is labeled to treat stored grain and seed. For seed to maintain an extended shelf life and maintain fertility, it is stored in large refrigerated warehouses. The benefit of this is that these warehouses are generally airtight and require little time devoted to sealing. The disadvantage is that the temperatures are kept well below the recommended minimum for a ProFume fumigation at 65° F (20° C). It will work but requires up to a week to meet the requirements of the FumiGuide.

Dosage Rate -

- What is the target life stage of the insects? (All life stages or post embryonic)

- Are rodents the targeted pest? If post embryonic insects and rodents are the target, it will require a much smaller concentration of gas compared to all life stages insects. This is due to the reduction of respiration during the pupa and egg stages. This is based on the specific information that is entered into the FumiGuide(r). The FumiGuide will then calculate the amount of Profume needed in each location. Continuous temperatures of 85° F (30° C) will greatly enhance all fumigants and allow them to work better and faster.

Amount of Time - Time is very important; when a manufacturer must be shut down it is very costly.

ProFume can be used in structures like flour mills that need minimum shut down time. The amount of time needed to perform a fumigation is dependent on many factors. A ProFume fumigation may take a day or two depending on the temperature, target pest, and life stage. Before the fumigation can even be started there are many details that need to be worked out. **Preparation Time** - Making charts and maps to note problem areas from past fumigations will aid in better understanding of the time and man power needed and also assignment of tasks. There are many factors to consider when planning a ProFume fumigation. The amount of time needed is dependent on the size of the structure and the amount of preparations that are needed to be accounted for.

Summary:

New fumigation techniques will change how we do our work to protect stored products such as grain

{Letter from Lugar}

Stationary of United States Senate

Hon. William Wehrum
Assistant Administrator
Office of Air and Radiation
US EPA Headquarters
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Mr. Wehrum

It is my understanding that United States companies have made significant progress in reducing our nation's reliance on methyl bromide, an ozone-depleting compound scheduled for phase out under the Montreal Protocol and domestic laws.

I am informed that alternatives, such as sulfuryl fluoride, which is manufactured and successfully used by Indiana based companies, are registered by EPA, approved in nearly all the states, and have the ability to replace over 94% of current post-harvest methyl bromide uses. I have concerns that the United States may request significant levels of critical use exemptions for methyl bromide use when, in fact, there appear to be technically and economically available substitutes to replace methyl bromide.

It is imperative that we remain in compliance with the Montreal Protocol and United States law. It is also important to ensure that those who previously relied on methyl bromide have effective alternatives. Please keep me informed of your progress on this matter and the status of your activities as you prepared the domestic 2007 allocations and enter into international negotiations on the 2008 critical use exemption.

Sincerely,
Richard G. Lugar
United States Senator