# Fumigants & Pheromones

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FOOD PROTECTION ALLIANCE MEMBER

A Newsletter for the Insect Control & Pest Management Industry


# Log Center Opens

*by John Mueller*

Post harvest wood fumigation is not new. Wood and wood products entering or leaving the United States have been fumigated for many years. Most of us have heard the stories about new insects coming into the United States and attacking our native trees. One of the early concerns was the Gypsy moth with other more recent issues being Asian longhorn beetle, Emerald ash borer, and the Sirex wood wasp. We also have wood pests and diseases not native to other countries. Oak wilt is a disease actively treated by US fumigators prior to oak logs leaving the country.

Recent international agreements, changes in transportation structure and the challenges associated with these combined issues have created expanding opportunities for fumigators.

*100 year old walnut logs from Southern Indiana arrive at FSS's new export treatment facility bound for the Orient.*


*This 20,000 sq.ft. USDA approved warehouse for treating export logs and wooden packaging material opened June 1, 2007.*

As fumigators, most of us are primarily accustomed to fumigating grain, processed grain, and food processing facilities. Wood has, at best, been a minor market until ISPM 15 was developed. The ISPM 15 ruling was an international agreement to protect our forest resources by fumigating all wood packaging materials [WPM] before exporting. ISPM 15 required wood treatment compliance in the forms of fumigation or heat treatment. Fumigators did see an increase in wood fumigation with this ruling but this has slowly trailed off as more and more wood exports moved to heat treated WPM.

ISPM 15 was initiated at a time when global trade was at a sharp increase. Adding or expanding port services of incoming or outgoing trade did not come at a good time as land locked US ports were completely full with container

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trade increases. All of these issues are why more emphasis is being placed on moving fumigation services inland and even to the point of origin. One challenge is many export fumigations must occur under qualified USDA-APHIS-PPQ direct observation. These qualified services are readily available at ports but not on the interior. USDA is actively developing these support services to accommodate these changes in transportation trends.

***Asian longhorned beetle,*** *(photo: NASA)*

What does this all mean for the fumigator? We at FSS believe this will not drastically change our industry. It will shift some services from ports inland. We have even opened a fumigation center in Indiana to accommodate log treatment opportunities, ISPM 15, along with the many other smaller treatments we do for grain, furniture, museum objects, export seed samples, food processors, and other quarantined items. It will mean that new research and development on fumigant abatement and filtering will take place to offer safer opportunities for the environment and to share these technologies with others doing this type of work around the world. We are very excited about the opportunities this center will provide for our customers as global trade continues to grow and internal quarantines develop.

For more information go to **www.fumigationzone.com**

# Invasive Pests & Pathogens Established in the United States

***Emerald ash borer larva***
*(photo: Michigan Dept. of Agriculture)*

*Over 18 million ash trees have been killed by this small shiny green beetle in the Detroit area alone.*

**Emerald ash borer -** *Agrilus planipennis*
**An Ambrosia beetle -** *Xyleborus glabratus*
**Asian gypsy moth -** *Lymantria dispar*
**Asian longhorned beetle -** *Anoplophora glabripennis*
**Brown longhorned spruce beetle -** *Tetropium fuscum*
**Shot-hole borer -** *Xyleborus similis*
**Woodwasp-Amylostereum complex -** *Sirex noctilio*
**Ohi'a rust -** *Puccinia psidii*

## Invasive Pests in significant smaller range in the United States:

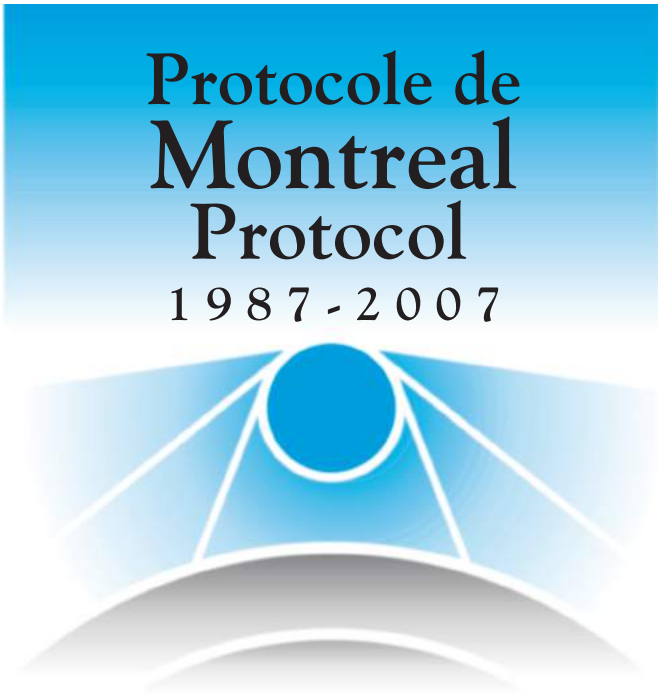
**Cactus moth -** *Cactoblastis cactorum*
**Erythrina gall wasp -** *Quadrastichus erythrinae*
**Lobate lac scale -** *Paratachardina lobata subsp. lobata*
**Mediterranean pine engraver beetle -** *Orthotomicus erosus*
**Red-haired pine bark beetle -** *Hylurgus ligniperda*
**Banded elm bark beetle -** *Scolytus schevyrewi*
**Cycad aulacaspis scale -** *Aulacaspis yasumatsui*
**Common (or larger) pine shoot beetle -** *Tomicus piniperda*
**European gypsy moth -** *Lymatria dispar*
**Hemlock woolly adelgid -** *Adelges tsugae*
**Spruce aphid -** *Elatobium abietinum*
**Dogwood anthracnose disease -** *Discula destructiva*
**Port Orford cedar root disease -** *Phytophthora lateralis*
**Sudden oak death syndrome -** *Phytophthora ramorum*
**An ambrosia beetle -** *Xylosandrus mutilatus*
**An ambrosia beetle -** *Xylosandrus crassiusculus*
**Balsam woolly adelgid -** *Adelges piceae*
**Chestnut gall wasp -** *Dryocosmus kuriphilus*
**Larch casebearer -** *Coleophora laricella*
**Beech bark disease -** *Nectria coccinea var. faginata*
**Butternut canker -** *Sirococcus clavigignenti-juglandacearum*
**Chestnut blight -** *Cryphonectria parasitica*

## Dave's Soapbox

*...for what it's worth*


# Montreal Protocol (1987-2007)

Representatives from 191 countries from throughout the world will gather in Montreal in September to celebrate the 20th Anniversary of the successes of the first international environmental treaty. This celebration will be a time of joy, accomplishment, reflection, and recognition. Many people will be congratulated for their hard work, vision, and inspiration. Many will want to 'plant the flag in the ground' and declare victory because of the diplomatic maneuvering that has allowed the planet to start healing from a wound caused by ozone depleting substances like chlorine, halon, and bromine, to name a few.




The funding for the Montreal Protocol has reached over one billion dollars. This money has been carefully sorted out to the developing countries who work with the United Nations and its implementing organizations to demonstrate alternatives that are viable and economical for these 'Earth unfriendly' substances.

Today, we all hear about climate change on a daily basis, but back in 1987 the discussion of stratospheric ozone protection, a type of climate change, was a new topic. For many it was the first time to hear about potential human health effects and environmental changes that would be harmful to mankind and plants from man-made ozone depleting substances. Since the atmosphere covers our planet without boundary lines, it became clear that this remediation had to be a planetary effort.

The chlorine aerosol or bromine fumigant used in one country would reach the stratosphere (15-60 km) and destroy the ozone filter guarding our country and other countries as well.

Each year delegates from all over the globe visit for 1-2 weeks to discuss ways to prevent and eliminate the ozone depleting substances with alternatives. This job is not easy and the time commitment and air travel is extensive and expensive. Discussions start early and continued into the nights with developed and developing countries weighing in on the economic impact to their industries and their countries. It is an exercise in compromise.

The committees that were formed to assess the various technologies and scientific assessments were composed of people from all walks of life and countries. The politics of the day eventually faded and the task of helping cure the planet of the wounds from ozone depleting substances made for a case study in international cooperation. The Science Advisory Panel (SAP), Technical and Economic Assessment Panel (TEAP), and Methyl Bromide Technical Options Committee (MBTOC) worked tirelessly to draft a blueprint of international environmental challenges to push the ideals of the Protocol forward. These members of the various committees should be recognized for the great job they have done and will continue to do in the future.

The United States was the leader of this international environmental treaty prior to 2002. The head negotiator for the Montreal Protocol was replaced with a State Department oversight. The sudden and deliberate reversal of a progressive environmental policy by the White House was a disappointment to many forward thinking people. The replacement of many of the national environmental scientists, including Dr. Robert Watson, with pro-energy policy players on Vice-president Chaney's staff staled the Montreal Protocol much the way it staled the climate change initiatives later on. By not signing the Kyoto Protocol on greenhouse gases as promised, a strong environmental neglect mes-

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## Dave's Soapbox

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sage came from the White House and has continued as well as broken promises and strong industry lobbying.

Despite the broken promises of the Bush administration, many others picked up the slack and supported the Montreal Protocol. Europe and Japan became the environmental leaders for the Montreal Protocol and the world. Canada, Australia, New Zealand, and the United States found reasons to change their direction and support after 2002. Challenges on the floor of the conventions became norm and recesses to 'mend the fences' sometimes took time. All in all, the process of diplomatic debate and compromise won out at the end of the day and after twenty years of discovery, debate, cooperation, and compromise, The Montreal Protocol is the most successful international environmental treaty ever.

**Conclusion:**

There is still more to do in the next 3-5 years to focus on finishing the job of healing the atmosphere and its precious ozone layer that has protected the planet for millions of years. While man has done harm to the environment, man has a working strategy to heal it. An important lesson that we all should gather from the last twenty years was eloquently spoken by Ms. Maria Nolan, chairperson of the Multilateral Fund for the Montreal Protocol: "There is a cost to pay for protecting the environment."

D. K. Mueller



## Repelling Mosquitoes

Here are some 'ideas' to repel mosquitoes this summer:

1. When you need to be outdoors in the summer, place a couple of fans around you. Mosquitoes are poor fliers and the wind force of the fans will scatter them. It also feels good on a hot evening.
2. Use Bounce fabric softener sheets...best thing ever used in Louisiana…just wipe on and go…great for babies.
3. Bob, a fisherman, takes one vitamin B-1 tablet a day April through October. Hasn't had a mosquito bite in 33 years. Every one he has talked into trying it, has said it works on them. Vitamin B-1 (Thiamine Hydrochloride 100 mg.)
4. One of the best insect repellents someone found (who is in the woods every day), is Vick's Vaporub™.
5. Plant marigolds around the yard. The flowers give off a smell that mosquitoes do not like. So plant some in that garden to help ward off mosquitoes without using insecticides.
6. "Tough guy" Marines who spend a great deal of time "camping out" say that the very best mosquito repellent you can use is Avon Skin-So-Soft™ bath oil, mixed about half and half with alcohol.
7. One of the best natural insect repellants is made from clear real vanilla. This is the pure vanilla that is sold in Mexico. It works great for mosquitoes and ticks.

***Source: Wives Tales***

# Flour Beetle

***Can you please recommend a pheromone trap which I could use for Rust-red flour beetle*** *(Tribolium casteneum)?* ***Since methyl bromide cannot be used in Europe anymore, do you know of any insecticide spray or gas which can be used for these? Thank you***

***Caroline*** *(Ireland)*

*Tribolium* are difficult insects to manage for several reasons:

1. They are nocturnal and like to hide in cracks in floors.
2. They live a long time (9 months to 2 years).
3. Their eggs survive the physical beating that milling and manufacturing offers.

The best way to manage them is:

1. Monitor with a flashlight for trails in dust.
2. Use PC Floor Traps from CSL's York lab to live capture the adults. Leave the live adults in the trap, they will then produce natural pheromone. Place one trap every 3-5 meters in areas where beetles are suspected near walls and support beams.
3. Use heat treatment (45-60° C for 18-24 hours) or sulfuryl fluoride fumigant (ProFume) to kill these beetles when their numbers get out of control.
4. Use good hygiene to reduce their reoccurrence.
5. Mark the spots where you find dead insects after the heat up or fumigation and concentrate on these areas with improved hygiene and approved insecticide sprays like cyfluthrin or deltamethrin (synthetic pyrethroid).

Finally, I like the idea of monitoring, cleaning, and doing back-to-back foggings with an approved fogging insecticide after all the equipment is opened. I fog pyrethrum 3% with Insect Growth Regulators (IGRs) like Methoprene or other IGR's (non-toxic mimics of natural hormone in insects that stop them from reproducing). I wait four hours or longer and then fog the second time with Pyrethrum or other approved fogging materials. Be sure to add heat to 30-35° C to the building to accelerate the respiration of the insects so they breathe harder and this combination will do a good job of killing about 70% of the exposed beetles in 8 hours! This will save shutdown time. Now repeat this procedure and monitor with pheromone traps to determine the population rebound and then you can see how effective this treatment was. The cost is many times less than a full shutdown and fumigation.

Caroline, pest management works when there is not an outbreak of insects during warm weather. Fumigation works best when you need to use a 'big hammer' to gain control when the population has reached outbreak populations.

*Try it and tell me your results.*

***David Mueller***

# Food Safety and Chemical Control

*Robert A. Dawson*

An often overlooked aspect of food safety is the control of non-food chemicals. Non-food chemicals can include pesticides, lubricants, solvents, cleaners, and janitorial products. Any facility that handles processes or packaged food and beverage products should have a program to manage the non-food chemicals that are used in the facility. The program should involve 1) Acquisition and availability of the MSDS information, 2) Review and approval of each chemical, 3) Purchasing guidelines, 4) Employee training, and 5) Self-auditing and inspection.

***Acquisition:*** Before considering any chemical for use, the manufacturer's MSDS (Material Safety Data Sheet) should be obtained. The MSDS contains important information about the chemical, such as the components of the chemical, the health risks, and the personal protection equipment (PPE) required. The chemical manufacturer must provide the MSDS upon request; the MSDS can usually be found on the internet (see www.fumigationzone.com). The MSDS information must be readily accessible to the employees in the facility, either in hard copy manuals or electronically.

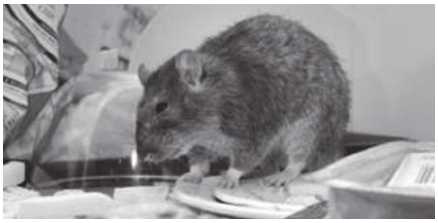
***Review and Approval:*** The management of non-food chemicals should begin with a formal review and approval process for each chemical that will be used. Is it the best chemical for the job? Is it approved for use in a food-handling facility? Are there any significant safety risks involved? It is usually best to involve a cross-functional Chemical Review team (preferably one that includes representatives from different disciplines such as Quality, Safety, Operations, Maintenance, and Purchasing) to develop and carry out the review process. A formal review form can provide a consistent review process and a written record of the review and approval. The review process can also identify the need for additional training and PPE for employees.

***Purchasing:*** The Purchasing function can help control the chemicals that are brought into a facility. Once a list of approved chemicals is developed, the Purchasing function of the organization should develop guidelines that prohibit the purchase of any unapproved non-food chemical (any chemical that is not on the Approved List). Any request for an unapproved chemical can be forwarded to the Chemical Review team. Once approved, a new chemical can be added to the list of approved chemicals, and be purchased.

***Training:*** Employee training is particularly important. Employees must understand the importance of using the correct chemicals, where each approved chemical can be used, how they should be handled and stored, as well as the implications of using an un-approved chemical. The training can easily be incorporated into OSHA-mandated Right-To-Know training.

Even though an employee may have the best intentions, a single misuse of a chemical in the wrong area can lead to significant food safety concerns, whether from overspray or residuals left on food surfaces. Samples of non-food chemicals left by sales representatives may appear to have a lot of potential, but should be reviewed and approved prior to use. Of particular concern is the well-meaning employee who purchases and uses an over-the-counter pesticide to combat nuisance pests in the workplace. Accidental contamination of food or food contact surfaces by chemicals may result in consumer complaints, product holds, or product withdrawals, all of which have a financial impact on the business.

***Auditing:*** Self-audits and inspections that specifically evaluate the chemical control program should be conducted on a regular basis. Are all chemicals being reviewed and approved? Is there documentation of the reviews (and denials and approvals)? The list of Approved Chemicals should be reviewed to assure that it is up-to-date, and the MSDS information should be checked to assure that there is an MSDS for every chemical used in the facility. The facility should also be inspected for any unapproved chemicals that may be on site, checking storage areas, cabinets and lockers.



***Conclusion:*** It is sometimes surprising to discover how many non-food chemicals are used in a facility and how often new chemicals are introduced. If you have responsibility for food safety in a facility, it is important to know and understand the various non-food chemicals and their uses in your facility. If you contract the janitorial cleaning, the janitorial company should provide MSDS information and a list of chemicals that are used; it is also important to assure that these chemicals are properly stored. The storage and use of pesticides in a facility must be strictly controlled. For that reason, many facilities contract all of the pest control activities to a professional pest control company, assuring that the pesticides are not stored on-site, and that all usages and associated records are completed.

# What's New from Insects Limited?


## SmartWay® Commercial Fruit Fly

This new insect trap is designed to capture fruit flies *(Drosophilia)* in commercial and industrial locations such as restaurants, retail stores, fruit processing facilities, commercial kitchens, and other locations where fruit flies are a pest. This non-toxic insect trap is enhanced by using a special food grade natural attractant and a special surfactant that breaks down the surface tension to pull the flies into the liquid.


## New Home Insect Monitoring Kit

Start with the insect first with the new Home Insect Monitoring Kit from Insects Limited, Inc. This multi-species monitoring kit offers pest managers a full range of monitoring tools that can pinpoint indoor insect problems for a full year. This inexpensive and effective kit includes pheromone monitoring tools for pantry pests including Indianmeal moth, almond moth, warehouse beetles, cigarette beetles, and flour beetles. Monitoring clothing and rugs is made easy with the clothes moth pheromone traps and the special roach and silverfish traps can help track down where these pests are hiding and breeding. Fruit flies are often a problem in the kitchen and the new SmartWay™ Fruit Fly Traps can eliminate this problem with all natural ingredients. After pin-point monitoring for insect pests in a home, control programs can be implemented by pest management professionals to eradicate these indoor pests.

## Mite Monitors

Mold mites *(Tyrophagus putrescentiae)* and grain mites *(Acarus siro)* are important stored food pests but few methods for monitoring are available. Effective early detection or reliable monitoring of mites in the food, animal feed, and associated industries is needed.

The new Mite Monitors from Insects Limited are designed specifically for the detection and monitoring of mite infestations. Two trap designs are used for different situations. The Mini Mite monitor is a device that can detect mites in an enclosed sample of food product within hours. The large black mite monitors (Hockey Pucks) are used for detection in warehouses, near food processing lines, pallet storage, and other areas that can harbor mites.

These monitors use a pre-made, mixed food base lure that will attract mites from at least 10 feet (3 m) away. It is user friendly and requires an exposure period of only 24 hours in warm areas or 48 hours in cool areas. It can be used in a dusty environment and in facilities that have cereal based dry pet food, specialist animal feed, traditional cheese, and dried fruits and meats.

They are useful tools for early detection and monitoring of mites in production facilities. They also can provide information that is vital for improving existing mite control measures and in implementing effective management strategies.

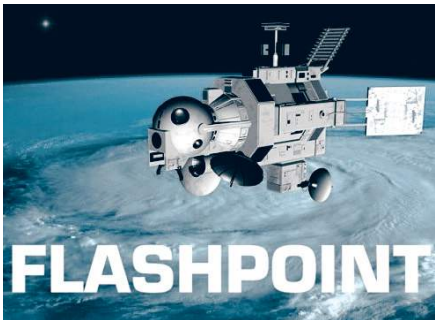
## "Quotable Quotes"

***"The problem with the gene pool is that there is no lifeguard."***
*—anonymous*

***"While death ends a life, it doesn't end a relationship."***
*—Dr. Adam Herbert*
*Indiana University President*

***"A leader takes people where they want to go. A great leader takes people where they don't necessarily want to go, but ought to go."***
*—Rosalynn Carter, former First Lady*

***"Pest control is a matter of elimination—it can be a real trial and error exercise."***
*—Dustin Corlett,*
*Fumigation Service & Supply, Inc.*




**Any event that will affect us for ten years or more.**

## $4.70/gallon

As alternative fuels are developed to decrease our dependency on gasoline, it is important to stop and understand the impact this can have on our planet, our countries, our industries, and our personal safety.

The cost of developing these alternative Biofuels will no doubt become more efficient in the coming years. Today, US grown corn is the product of choice to make bioenergy, but in the future we will see many organic materials step in to lower the cost.

One cost that has not been discussed very much is the cost of securing the oil rich region of the world with our military forces and resources. It has been estimated that the tangible cost to secure the Middle East region is $1.70 per gallon of gasoline. So if the present gallon of gasoline is about US$ 3.00. The true cost with military security involved is US$ 4.70/gallon. This is something to think about when we move forward to the challenges of reducing our need for precious fuel while we strive to find alternatives to gasoline and diesel fuel.

Bioenergy, renewable fuels, ethanol, biodiesel, DDGS—these terms and others like them have been in the news as we realize that the U.S. must reduce its dependence on foreign oil and petroleum-based fuel. But how can we do this, and what will be the impacts of our efforts? Purdue Agriculture researchers are hard at work on these issues.

The link to the publications in the Purdue Extension BioEnergy series will answer many of your questions. For best performance please make sure you have the latest version of Adobe Acrobat Reader. Purdue Extension BioEnergy Series: If you want to learn more about biofuels, go to this website to find interesting and comprehensive topics: http://www.ces.purdue.edu/bioenergy/

***Source: Purdue Extension***



# 2nd Latin America Fumigants & Pheromones

CONFERENCE & WORKSHOP

MARCH 2009 ARGENTINA

NEWSLETTER

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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