

Fumigants & Pheromones

Issue 95
Spring 2010

Routing:



A Newsletter for the Insect Control & Pest Management Industry

EPA Announces New Restrictions on Phosphine Fumigants

WASHINGTON— The U.S. Environmental Protection Agency is requiring new restrictions on aluminum and magnesium phosphide products to better protect people, especially children, from dangerous exposures. The new restrictions prohibit all uses of the products around residential areas, increase buffer zones for treatment around non-residential buildings that could be occupied by people or animals, and create more protective product labeling. These actions are part of Administrator Lisa P. Jackson's comprehensive effort to strengthen the agency's chemical management program and assure the safety of chemicals.

"Phosphine fumigants are poisons and must be kept away from where our children live," said Steve Owens, assistant administrator of EPA's Office of Prevention, Pesticides and Toxic Substances. *"These new safeguards prohibit the use of these toxic pesticides near homes and impose restrictions to protect our families from exposure to them."*

Aluminum and magnesium phosphide fumigants are used primarily to control insects in stored grain and other agricultural commodities. They also are used



Because of recent accidents and fatalities from phosphine fumigants, EPA has made important changes in the label.

Phostoxin® flask; Phosphine is one of the most widely used fumigants in the world.

to control burrowing rodents in outdoor agricultural and other non-domestic areas. The fumigants are restricted to use by specially trained pesticide applicators and in only narrow circumstances.

EPA is expediting approval of the new labels to reduce the potential for accidental poisonings. The primary phosphine manufacturer is voluntarily implementing the changes. EPA will apply these changes to all aluminum and magnesium phosphide products.

To view the new label, please visit www.fumigationzone.com and click on MSDS Labels.

Source: EPA

IN THIS ISSUE:

- ✦ *Bad Bugs*
- ✦ *Dave's Soapbox*
- ✦ *Methyl Bromide Update*
- ✦ *Food Protection Alliance*
- ✦ *Preserving Our History*
- ✦ *Calendar of Events*

VISIT US AT: www.insectslimited.com

Bad Bugs...



By Alain VanRyckeghem, BCE
Technical Director

E-ntomology

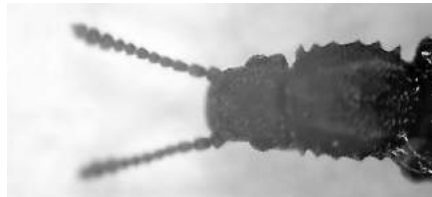
New technology helps identify the smallest pests in the field.

Stored product beetles are among the most difficult beetles to identify in the field. Very small features need to be observed in order to separate the common and serious beetles from the less important ones.

The pest control technician is often faced with separating two similar beetles such as: Red flour beetle (*Tribolium castaneum*) from the confused flour beetle (*T. confusum*); the saw-toothed

grain beetle (*Oryzaephilus surinamensis*) from the merchant grain beetle (*O. mercator*); the cigarette beetle from the drugstore beetle; and the ever difficult Trogoderma species (see *Bad Bugs* issue 92, pg 2).

These beetles are very small and proper identification should be done under a microscope. A new tool for field use is the palm sized microscope MiScope™. This device is connected to a laptop via a USB cord, and the image is displayed on the screen through software that comes with the microscope.



This shows the image quality that the MiScope can take.

Excellent magnification is possible (40X–140X). The field of view for whole insects is between 2 mm



and 10 mm; with larger insects, only portions of the specimen are visible. For small insects like the carpet beetles, the shapes of the scales which make up its varied colors are clearly visible at the highest magnification. Still photos or videos can be recorded on the computer and sent to knowledgeable entomologists for their identification.

The microscopes come in an affordable standard 1.3 mega pixel imaging unit for field use and a more expensive higher quality 2.0 mega pixel unit for lab/office use. The software has additional features that make it useful for publication such as the addition of a calibrated micron scale, contrast adjustments, drawing, and labeling.

MiScope Handheld Digital Microscope

Imagine that you find a small insect or fragment during one of your inspections and are not 100% sure what it is. Knowing that half the battle of controlling a pest is knowing what it is, you now need a second opinion. A portable digital microscope can take a picture of the insect or insect fragment and download it to your laptop computer. Then you can email this digital picture to your main office, technical director, or local university for positive identification. After you receive the ID you can then forward it to your customer with timely recommendations. A portable digital microscope can help identify pests and pest fragments in 'real time.'

Digital microscope with 40 - 140x variable magnification that fits in the palm of your hand. Built-in color-balanced LED lighting. USB 1.1 computer interface. Includes Video Toolbox software. One year warranty (designed for field applications). Price: \$295.

MiScope Megapixel Digital Microscope: Digital microscope with enhanced optics and 2 megapixel camera, 12 - 140x variable magnification with built-in LED lighting, on/off switch, USB 2.0 computer interface, includes Video Toolbox PRO software. One year warranty. (designed for laboratory applications). Price: \$795.

For more information on these digital microscopes or to place an order, contact: 1-800-992-1991.

Dave's Soapbox

...for what it's worth



brand integrity is essential. The expectations of food purity laws and food safety standards are changing. Recently, highly published deaths and human suffering from food borne diseases will force manufacturers to review their food safety programs and make adjustments. It will force pest managers to be better than ever before.

Fumigation Trends

A trend has occurred in the last two decades to contract pesticide applications in post harvest stored product protection to a select few specialized fumigation and food safety companies. General pest control companies that perform pest management and pest control for residential accounts have gotten out of the fumigation business for

Reducing Customer Complaints

*This is an excerpt from the new book **Reducing Customer Complaints in Stored Products** by David K. Mueller. It is intended to help you solve pest problems in stored products.*

Pest management is not about a "product." It is about a path of continuous quality improvement. Stored products are threatened by pests from the time they leave the field to the time they are consumed.

The future generation will control pests by managing environmental conditions.

Insects are a symptom of a problem. The problem solvers and pest managers must interpret the clues that permit the conditions in which these pests thrive and control these conditions to discourage these unwanted guests.

If we **begin with the insect or other pests first** and study what they like and don't like, we then can offer them an environment in which they are uncomfortable and will then leave or die.

Companies that put their brand on their products are selling more than just the product in the package, they are selling their reputation. Protecting this



Photo: Kim Kemp

After food and debris accumulates under retail shelving, it becomes a place where stored product insects, mice, and spiders live. Cleaning or removing this harborage is important in reducing consumer complaints.

Pest management is about long term solutions to pest problems. In the past hundred years it has been convenient to fumigate or spray away a pest problem only to have it come back in days or months. However, the conditions that caused the problem to occur in the first place remain. The survivors begin reproducing to restock the problem in a short period of time. These conditions still offer an optimum environment and will surely attract more pests from the surrounding area, including outdoors. **Again, the long term solution is to identify and correct the problem and offer the conditions that the insects or other pests cannot survive in. They then will leave or die.**

the most part. The cost of the license, minimum insurance, continued education, and capitol cost of new fumigation equipment, including expensive monitoring equipment, has eliminated the small player from this expensive, educational intensive and potentially high risk business. Fumigations are performed mostly on major holidays and weekends when the food plants are closed. In the past, most pest control companies carried fumigation and food processing licenses, but today only a few very specialized companies exist in North America.

D. K. Mueller

International Developments in Quarantine and Pre-shipment Policies

By Tom Batchelor, Ph.D.

**Touchdown Consulting,
Brussels**

The Montreal Protocol explains the terms “quarantine” and “pre-shipment” and how they relate to the QPS exemption under the Protocol.

In summary:

(a) ‘Quarantine applications’, with respect to methyl bromide, are treatments to prevent the introduction, establishment and/or spread of quarantine pests (including diseases), or to ensure their official control, where:

(i) Official control is that performed by, or authorized by, a national plant, animal or environmental protection or health authority;

(ii) Quarantine pests are pests of potential importance to the areas endangered thereby and not yet present there, or present but not widely distributed and being officially controlled;

(b) ‘Pre-shipment applications’ are those non-quarantine applications applied within **21 days** prior to export to meet the official requirements of the importing country or existing official requirements of the exporting country. Official requirements are those which are performed by, or authorized by, a national plant, animal, environmental, health or stored product authority.

The use of methyl bromide for quarantine and pre-shipment (QPS) remains the only major use of an emissive ozone-depleting substance for which the Parties to the Montreal Protocol have yet to agree a reduction and phase out schedule. For this reason,

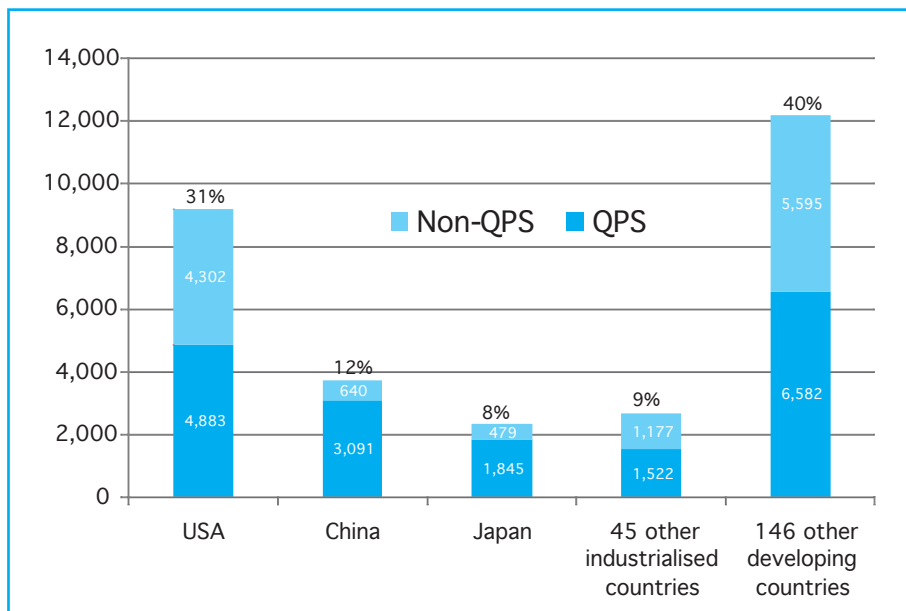


Figure 1: Global consumption of methyl bromide (tonnes) for QPS and Non-QPS in USA, China, Japan and other countries.

the Parties (governments) to the Montreal Protocol have recently requested further technical reports to examine in more detail methyl bromide used for QPS and alternatives.

Some countries have already limited methyl bromide use for many years which encouraged alternatives, or banned methyl bromide for QPS altogether. Others are continuing to use more of it, sometimes in response to regulations that demand the specific use of methyl bromide rather than an alternative.

The Protocol’s Technology and Economic Assessment Panel (TEAP) reported in 2009 that consumption of methyl bromide for QPS has remained relatively stable over the past 10 years. However, this overall stability is masking some significant regional changes. Industrialized countries have in general decreased their consumption of

QPS and some have phased out, whereas developing countries have increased their consumption significantly.

Developing countries used about 12,984 tonnes for QPS in 2007, which exceeded the use in industrialized countries (12,232 tonnes) for the first time. China, India, Indonesia, Malaysia, Republic of Korea, Singapore, Thailand and Vietnam were the dominant users in Asia. Latin American and African countries on the other hand used relatively little.

In industrialized countries, the United States dominated all uses of methyl bromide (QPS + non-QPS). The consumption of methyl bromide in the US was about 31% of the world total; three times more than 45 other industrialized countries; and about 75% of all the methyl bromide used in 146 other developing countries (Figure 1). Countries that consume methyl bromide for QPS are now in the

minority. Only 22% of all countries in the world consume methyl bromide for QPS, compared to 49% that once consumed and have now stopped using it, or 29% that never used it at all for QPS. Countries that do not use methyl bromide for QPS, or have given it up, have replaced it with alternatives. TEAP reported that more than half to almost all of the methyl bromide used for the five major categories of QPS use categories could be replaced by alternatives¹ (Table 1). TEAP's report listed many alternatives that were considered as available in many countries to replace methyl bromide.

¹ TEAP QPS Report in 2009. Table 9-1 Page 138

Table 1: Preliminary estimates of technically replaceable uses of methyl bromide for Quarantine and Pre-shipment globally (TEAP 2009)

Category	Tonnes (estimated)	Main Alternative	Estimated Tonnes Replaceable
Logs	2,236	Alternative fumigants	Most
Sawn timber & wood packaging	1,629	Heat treatment (ISPM-15), alternative fumigants	Almost all
Grains & similar food	1,492	Alternative fumigants & controlled atmospheres	Almost all
Soils	1,531	Alternative soil fumigants	Almost all
Fruit & vegetables	646	Systems approach, heat, cold, alternative fumigants	About half

Book Review



REDUCING CUSTOMER COMPLAINTS in Stored Products

This colorful hardback book is fully illustrated with case studies, practical tips, and practical solutions to help you understand and solve pest issues in stored products.

Cost: \$89.95 plus shipping

Order online by visiting The Bookstore: www.insectslimited.com or Phone orders: 1-800-992-1991

David's attempt to cover a broad range of topics, but present enough details in each section to walk away very knowledgeable is achieved. Photos, tables (including a master cleaning schedule, defective action level and pheromone trapping system) plus technical information is at your fingertips. In the end you will achieve what the title says through the knowledge gained by reading the book.

His reference section indicates the great extent to cover the latest information on a global basis. His simplicity in writing makes it easy to understand. His love of practical solutions for the subject serves the book well.

The timing is right both from the standpoint of the author's experience and the need for such a publication. The book is peppered with favorite Dave Mueller quotes and philosophy as how to conduct integrated pest management in the food industry. It is backed up with technical information and success stories that allow you to actually implement this philosophy.

From cover to cover you can feel the tone of practical application. His hands on approach of tackling challenging pest situations allows him to use the same approach in writing this book. It is not a book that will sit on a shelf unused. It is for people needing real answers to real situations.

Austin M. Frishman

Austin M. Frishman, Ph.D., BCE
Specialist in Structural Pest Control



Food Protection Alliance covers most of North America with its 22 members with pest management and fumigation.

In 2004, a group of regional service providers decided to join forces to expand its geographical footprint. Led by John Mueller with Fumigation Service & Supply, this group consisted of regional companies that performed specialty work in food pest management and fumigation. There are no real national fumigation companies in North America. There are some larger companies that have fumigation crews that travel nationwide to perform fumigations.

It wasn't long before each realized that a formal organized entity composed of industry leading, respected, regionally based companies that were customer focused, education driven, quality bound, technology based, and improvement oriented was not only necessary, but urgent.

Clark Pest Control, Fumigation Service & Supply, Research Fumigation Company, and The Royal Group became original founding members of FPA in 2005. In 2007, Stephen Roy was hired as the FPA director to manage marketing and national accounts. Today, Food Protection Alliance's 22 members covers much of North America with pest management and fumigation.

To learn more about FPA, go to www.FoodProtectionAlliance.com

Kelley Celebrates 25th Year at Insects Limited/FSS



In the mid eighties, when Pat Kelley graduated from Purdue University, he was looking for a rising company that could use his unique talents. Some 25 years later, he believes that he found those companies in Insects Limited and FSS. Kelley, now Vice President of Insects Limited, continues to grow his responsibilities within the company as new products and technologies have changed the market landscape.

Kelley says, *"It has been a great place to work for all of these years. Our unique work environment cultivates creativity and then bounces those creative ideas against good sound science to come up with an innovative and effective product line. I have been blessed to work with some of the best people in the business over the years!"*

The latest fumigation equipment can be hard to find.

Fumigation Service & Supply is your resource to find the latest fumigation equipment and products.

Make sure your company is ahead of the game—and the competition.

With over 200 products, FSS is the only company you need that specializes in the newest solutions for your fumigation needs. We know how to set you up for success because we successfully use this same equipment.

Visit our website for a product catalog.



FSS

Fumigation Service & Supply, Inc.
800-992-1991
www.FumigationZone.com

FOOD
PROTECTION
ALLIANCE
MEMBER



Tomorrow's technology—today.

Errata

Please note these additions and corrections to the book *Reducing Customer Complaints in Stored Products*.

- Page 46 *Tribolium castaneum*
- Page 53 *Trogoderma variabile*
- Page 58 *Lasioderma serricorne*
- Page 63 *Oryzaephilus surinamensis*
Oryzaephilus mercator
- Page 66 *Sitophilus granarius*
Sitophilus zeamais
- Page 72 *Ahasverus advena*
Cladosporium

Preserving Our History

Barrier Films vs. The Bugs

By Patrick Kelley, ACE

Those lucky enough to be attending the 9th Fumigants & Pheromones Conference in Valencia, Spain, were treated to Insects Limited's Technical Director, Alain Van Ryckeghem, giving an informative talk about insect resistant packaging for food products. This topic explored which products worked best to keep pests out of our finished food, as some materials are much easier for insect pests to chew through than others.

In a museum setting, wrapping or bagging objects in a protective film is commonly done for several different reasons:

Sensitive Objects: If a sensitive museum object is being stored closely to other items known to be infested, a protective film will keep the insects out and prevent pests from infesting that particular piece.

Infested Objects: If a certain object on exhibit or in storage is found to be infested, the first thing that can be done to prevent the spread of the infestation is to "bag" the object in a protective film. In this circumstance, the procedure would keep the pests inside the bag until an appropriate treatment could be performed.

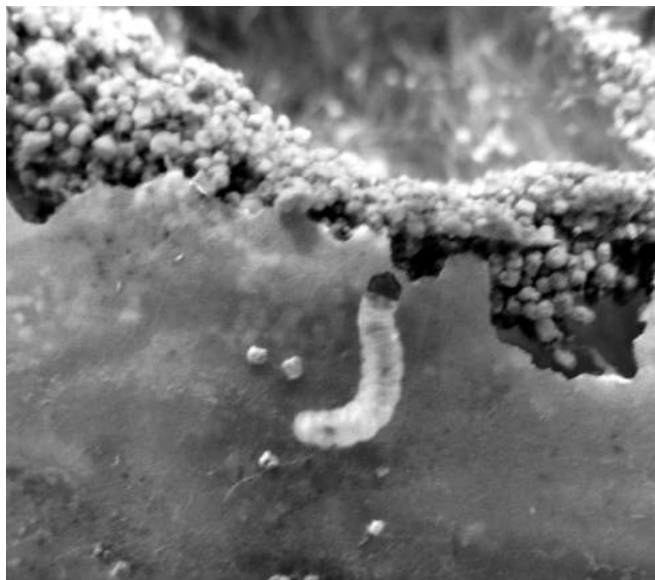
Freezing Treatments: Prior to freezing an object that is suspected to have pests, objects are wrapped to maintain humidity levels before and after freezing.

Anoxic Treatments: For low oxygen treatments, objects must be completely sealed with a barrier

film that does not allow the passage of oxygen in or out. Some museums will even store certain objects for years in an oxygen free environment within a barrier film.

Question: What are the best films that can do the above tasks while keeping pests from penetrating at the same time? Below are some of the choices¹:

- 1. Polyethylene films** having a thickness of >10 mil work well for short or long term storage. Polyethylene alone cannot be used as an oxygen barrier. You can see from the photo image above that the thinner PE films are easily penetrated. This is also generally the cheapest alternative. Cost = \$0.10/sq.ft.
- 2. Polyester films** work well as a barrier for insects and oxygen. Polyester films are those films that use Polyethylene terephthalate or (PET). These can have the brand names of Terphane[®], Melinex[®], Hostaphan[®] or Mylar D[®] (*Note: Mylar D is no longer being manufactured by Du Pont*). These can safely be used for long term storage. Cost = \$0.26/sq.ft.
- 3. Aluminized barrier films** such as the brand name Marvelseal 360[®] or U.S. military specification packaging (MIL-PRF-131K-Class I) are



A Webbing Clothes Moth larva easily chews through a thin Low Density Polyethylene (LDPE) film that is commonly used as grocery bags in the U.S.A.

Photo by P.Kelley

extremely pest resistant and can also be used in anoxic treatments. Cost = \$0.48/sq.ft.

- 4. Ceramic coated transparent barrier films** such as the brand names, Escal[®] and SuperEscal[®] (puncture resistant) are also extremely insect resistant and can be used in anoxic treatments. Cost = \$1.76/sq.ft.

It is important to keep in mind that certain plastics can adversely affect collection materials. Plasticizers or other compounds can migrate to the surface of some types of plastic and eventually damage the objects that they are touching. Stay away from plastic films using poly vinyl chloride (PVC), polyvinylidene chloride (PVDC, better known as Saran[®] Wrap) or cellulose diacetate.

¹ Information regarding the interaction between flexible films and art/collection objects was generously supplied by Éléonore Kissel, In Extensio...Paris, France.

MEETING CALENDAR:

** June 25-26, 2010
AgroSpeCom
Stored Product Workshop
Athens, Greece

** June 27-July 2, 2010
10th International Working
Conference on Stored Product
Protection (IWCSPP)
Lisbon, Portugal

*** August 4, 2010
Fumigation Training
Bloomington, IL

*** August 5, 2010
Fumigation Training
DeKalb, IL

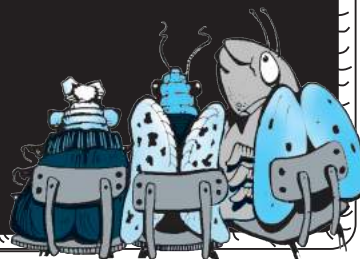
*** August 11, 2010
Fumigation Training
Findlay, OH

** October 20-23, 2010
PestWorld
Honolulu, Hawaii

*** May, 2012
10th Fumigants &
Pheromones Conference
and Workshop
Indianapolis, IN

See You There!

*we will attend, ** we will speak,
*** we will organize this meeting



Sharing Thru Education!

A series of continuing education seminars have been organized by Insects Limited, Inc. for Summer/Fall of 2010. These continuing education seminars will discuss updates and review current pest management and fumigation techniques.

The sessions that contain the Fumigation Updates will discuss: ***Stored Product Insects and their Pheromones, Updates to New Phosphine Labels, Mating Disruption, Fumigation, Pesticides and Their Importance, Sulfuryl Flouride, Grain and Seed Management***, and much more!

Speakers will include experts in the pest management industry along with professors from local universities.

To register or receive more information and details about these training seminars, please go to www.insectslimited.com contact Kalah at k.schmitz@insectslimited.com, (800)992-1991.

Quotable Quotes

"The secret to managing a baseball club is to keep the five guys who hate you away from the five who are undecided."

— Casey Stengel

INSECTSLIMITED

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: Kalah Schmitz, Fumigation Service & Supply, Inc., 16950 Westfield Park Rd., Westfield, IN 46074 USA.



© Copyright 2010 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.

Fumigation Service & Supply, Inc.

16950 Westfield Park Road
Westfield, IN 46074-9374 USA
(1) 317-896-9300
e-mail: insectsltd@aol.com
websites: www.insectslimited.com
www.fumigationzone.com

Presorted Standard
U.S. Postage
PAID
Carmel, Indiana
Permit #14

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