

Fumigants & Pheromones

Issue 30

Winter
1993

A Newsletter for the Insect Control & Pest Management Industry

Insect of the Year

Time magazine has the Man of the Year, Sports Illustrated has its Sportsman of the Year... Well, Fumigants & Pheromones has its "Pest of the Year". The 1992 Insect of the Year is – the envelope please, Gasp...The Hairy Fungus Beetle.

The year 1992 was especially wet. Rains were responsible for good wheat and corn crops, but that same rain gave an advantage to a certain group of fungi-vores throughout North America. These fungus feeders were found on railcars, on roofs of recently fumigated flour mills, in and around grain facilities, and yes, the homeowner found them too.

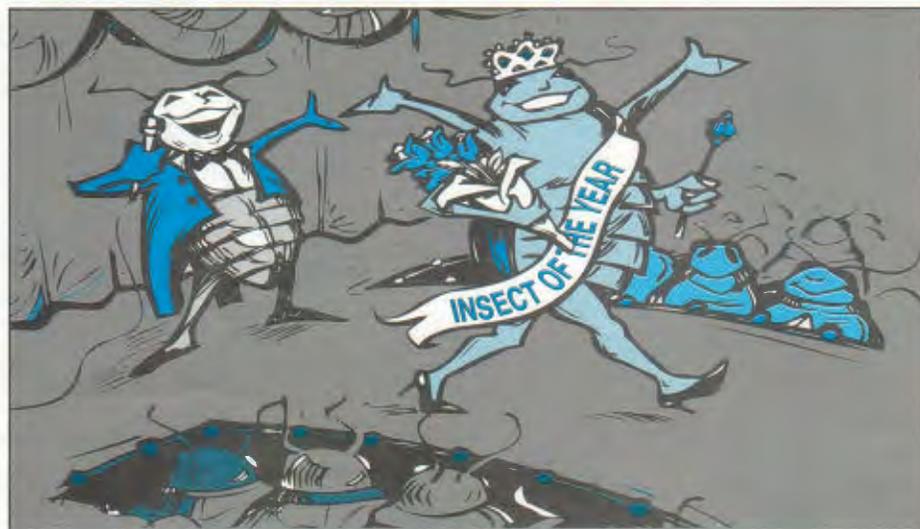
Insects Limited, Inc. offers an insect identification service. We receive hundreds of specimens each year to identify for our customers. The hairy fungus beetle was submitted more than any other insect species. The 1992 runner-up was the 1991 Insect of the Year; cigarette beetle. The Mrs. Congeniality award goes to that itchy-bitsy microscopic Psocid (Booklice).



The hairy fungus beetle - larva and adult

And to tell you about this year's winner is Mr. Beetle Parks:

The hairy fungus beetle, *Typhaea stercorea* (L.), is frequently found in corn fields where it is apparently attracted to decaying kernels of exposed ears. After corn is harvested and shelled, it is often found heavily infested by this insect, although little feeding on undamaged



grain is experienced. The beetle is cosmopolitan in distribution and is found in all parts of the United States in dwellings, warehouses, stores, flour mills, granaries, etc. It is a pest of stored grain and seeds, tobacco, peanuts, cocoa, etc.

It is a small brownish beetle about one-tenth of an inch long and covered with hairs. It rather closely resembles the drug store and cigarette beetles in general appearance, but is slightly smaller and has different shaped antennae.

Miss Hairy Fungus Beetle stated in her all important interview:

"My goal is fly into a nice railcar full of food, lay thousands of eggs, and leave a legacy of thousands of microscopic insect fragments in someone's rebolt-sifter someday, and to solve the world hunger problem for all insects."

1993 will to be an interesting year. We can't predict the weather yet, but we can predict high levels of fungivores invading the large amounts of stored grain that was harvested this year. This year's crop was

generally "put-up" with low test weights, high moisture levels, and with above average breakage problems. Compound this with the fact that this year's corn crop was 9 billion bushels (140 bushel/acre average yield). Look forward to meeting the foreign grain beetle, the hairy fungus beetle, flat grain beetle, psocids, mealworms, etc. this summer. ❄

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Methyl Bromide Phaseout

On January 20, 1993, one day before the Clinton administration was to take control, the departing EPA chief ordered the phase out of the popular fumigant, methyl bromide. In one of his final acts before leaving office, Environmental Protection Agency Administrator William K. Reilly ordered that U.S. companies phase out, by the year 2000, the production and importation of methyl bromide.

Reilly's directive on the chemical, methyl bromide, complies with provisions of the 1990 amendments to the Clean Air Act that require the EPA to update its list of ozone depleting chemicals and take steps to eliminate their use. Several environmental groups petitioned the EPA more than a year ago to list methyl bromide as a Class I ozone depleting chemical, and last September they filed suit against the agency to force a decision. Unfortunately, the Clean Air Act bases its restriction on production of methyl bromide and not to emissions. Otherwise, there would be ways to scrub it after it is used.

Methyl bromide is widely used, and the United States consumes about 43% of the worldwide total each year. It is used as a fumigant in soil to kill pests that attack vegetables and fruits, to protect commodities such as grains while in storage, to fumigate food processing facilities, fresh fruits and vegetables that are imported and to kill termites in dwellings.

Reilly also announced that products manufactured with ozone depleting chemicals need to contain consumer warning labels.

EPA intends that these warning labels will help clear up some of the confusion about 'ozone friendly' claims by clearly informing consumers which products use ozone depleting substances," Reilly said in a prepared statement. ✻

(source: Washington Post)



(For more information about the assessment of methyl bromide on the environment, read the article from Dr. Robert Watson's lecture.)

Excerpts from Dr. Robert Watson at the 1992 Fumigants & Pheromones Seminar

Submitted by: June
Beasley, Fumiga-
tion Service &
Supply, Inc.

Dr. Robert Watson of NASA, Co-Chairman for the Science Assessment United Nations Environmental Programme (UNEP) on December 16, 1992, at the Fumigants & Pheromones Technical Seminar in Indianapolis, Indiana, in a clipped, rapid-fire delivery gave his state-of-the-knowledge of atmospheric ozone and why he thinks it's being disturbed by human activities and the specific role of methyl bromide.

The following are excerpts from Dr. Watson's speech:

"Why do we care about ozone? Ozone filters the ultraviolet rays of the sun from reaching the earth's surface. If we have an increase in radiation, it could potentially lead to adverse health effects such as skin cancer and cataracts. There also seems to be a relationship between ultraviolet radiation and the suppression of the immune response system. Should we care about ozone? Yes!

We have damaged the ozone layer. We've caused an Antarctic ozone hole and even with the new Copenhagen regulations that come into play, which is a ban on all chlorine and bromide early in the next century, we will not get rid of the Antarctic ozone hole until the year 2050, maybe 2060.

In the last 12 years, 1979-1991, there was ozone depletion year round including the

summer period.

What came out of the 1991 assessment: There is year-round depletion in the southern hemisphere and in the northern hemisphere.

The trends are getting worse—there is a rapidly accelerating decrease of ozone primarily in the lower stratosphere.

For every 1% ozone depletion there is a 2.5% increase in non-melanoma skin cancer.

Even with the Montreal Protocol that bans chlorine and bromine-containing compounds and even with the regulations enacted in Copenhagen a week ago, ozone depletion will get worse before it gets better. The ozone will recover over many decades. It will not happen quickly because the lifetime of these CFC's is many tens of years even a hundred or so years.

Five of the last 6 years, we've had a very deep, extensive Antarctic ozone hole—even saw some localized levels in the Arctic. Fortunately for us, meteorological conditions over Antarctica are truly unique. We understand why they occur. We do not expect them to occur at mid-latitudes.

There is no more ozone to destroy!

The weight of scientific evidence suggests that observed mid and high latitude losses are largely due to bromide and Chlorine. That is why governments of the world acted very strongly two weeks ago in Copenhagen to basically ban chlorine and bromide chemicals.

In some parts of the world, we've seen increases of ultra-violet radiation. In other parts of the world, we haven't. We've seen a significant increase of skin cancers in America and Europe in the last decade. Is it due to the decrease of ozone? In my opinion, 'No'. Many environmentalists have attributed the large increase of melanoma and non-melanoma skin cancer over the last decade to a decrease in ozone. I personally believe that is incorrect, that it is due to the cumulative amount of ultra-violet radiation in our bodies over a lifetime. Incidence of skin cancer in old people is far larger than the incidence per capita in people 20, 30, 40.



Robert Watson,
Ph.D.
Director
Co-Chairman; United
Nations
Environment Pro-
gramme (UNEP)
NASA, Washington, DC

"Methyl Bromide and
the Ozone Layer: A
Summary of Current
Understanding"

Methyl Bromide

Sources of Methyl Bromide—There are both natural and anthropogenic (man-made) sources of atmospheric methyl bromide. Methyl bromide is used as a soil commodity that is both pre-shipment and quarantined and as a structural fumigant.

There is more methyl bromide in the northern hemisphere than southern hemisphere—about 30% more. This suggests more use in the north than the south. It is a short-lived gas—2 years. *Of methyl bromide in the atmosphere today, 25% plus or minus 10% of total emissions are due effectively to fumigation use.*

*A key question—Is methyl bromide removed from the atmosphere on oceanic surfaces or terrestrial surfaces both vegetation and/or soil?

Methyl bromide is clearly a superb fumigant. There is no single alternative or chemical substitute to methyl bromide.

There are no foreseeable alternatives for quarantine where you need 100% quick-kill.

Our challenge is that it should not be emitted to the atmosphere.

So, methyl bromide is on the front list of all policymakers throughout the world to see whether the freeze is the appropriate regulation or whether it should be phased out by the year 2000 (which is the Clean Air Act).

Seminar Tapes Available

Cassette tapes were made of the 1992 Fumigants & Pheromones Technical Seminar. A ten tape set includes 21 speakers' presentations.

A limited number of copies can be purchased from Fumigation Service & Supply, Inc. If you were unable to attend this year's program but would like to purchase the 10 tape set, call Pat Kelley at 1-800-992-1991 or FAX 1-317-846-9799. Cost: \$175. or \$25./tape (minimum two tapes).

What will push it in one direction or more will be science and effectively what the states of technology and the economics of methyl bromide substitutions are.”



Dave's Soapbox

for what it's worth...



Whether you agree or disagree with the outcome of the elections on November 4, 1992 – it will have a major impact on you personally, your company, our industry, and the world for the next four, eight or maybe sixteen years.

President Clinton and his teammate Vice-President Al Gore, Jr. will lead this country in new directions. Many of those directions will be positive for a lot of people here and abroad. Some of those directions, no doubt, will be negative.

One area that you can be assured that will be the focus of this administration is the topic of the environment. Al Gore, nicknamed by some as Mr. Greenjeans, will have a major influence on many policies in this administration. He has a personal crusade of slowing the effects of environmental degradation in this country and throughout the world. He alone, added over 350 environmental amendments in Congress last year. In my opinion, he is not doing this as a political grandstand, but rather as a sincere crusade for a just cause that he believes in wholeheartedly.

WAR

In the absence of a villainous enemy, I predict that the United States will challenge the environment and those that deface it.

Environmental Vandalism is the new enemy. This attack will sound much like the attack that the Reagan Administration had on stemming the tide of drugs or

what Truman implemented after WWII with the Marshall Plan to stop communism from spreading.

Chapter 14, *Earth in the Balance*; A New Common Purpose states: “Modern industrial civilization, as presently organized, is colliding violently with our planet's ecological system. The ferocity of its assault on the earth is breathtaking, and the horrific consequences are occurring so quickly as to defy our capacity to recognize them, comprehend their global implications, and organize an appropriate and timely response.”

“I have come to believe that we must take bold and unequivocal action; we must make the rescue of the environment the central organizing principle for civilization. Whether we realize it or not, we are now engaged in an epic battle to right the balance of our earth, and the tide of this battle will turn only when the majority of people in the world become sufficiently aroused by a shared sense of urgent danger to join an all-out effort. It is time to come to terms with exactly how this can be accomplished.” It makes sense for a country to have an enemy. Especially a somewhat intangible one which can't drop thousands of atomic bombs. The devastation is more chronic than acute. It makes good cents economically too. Superfund clean ups, research into new ozone harmless products, incinerators, new vehicles, scrubbers, water purifiers, etc. Governmental fines for those caught in the act of Environmental Vandalism will be a revenue generating source. It will be proposed early in the 103rd Congress that an excise tax on methyl bromide could mean an immediate increase of nearly \$3.00 per pound (200% increase). This could realize 260 million additional dollars to our government. The Clean Air Act could do to present day business what the Stamp Act did to Merry Ol' England.

THE OZONE

Pesticides are barely mentioned in *Earth in the Balance*. Ozone depletion and global warming are the main thrust. Al Gore states in the conclusion: “The ozone hole is a case in point, since it represents an unpredictable consequence of a global pattern by which civilization has accumulated chemical gases in the atmosphere. The general phenomenon of ozone depletion was anticipated, but the sudden

'avalanche' of nearly total depletion above Antarctica came as a complete surprise. Since we are continuing to pile up larger quantities of the same gasses, more such changes are certain to take place."

THE BOOK

Earth in the Balance by Vice-President Al Gore, Jr. et.al. gave me the same feeling that I got when I read Silent Spring by Rachel Carson.

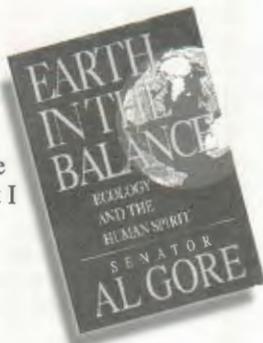
Thirty years ago Rachel Carson shocked the world when she disclosed her findings and feelings. Al Gore does the exact same thing in his book; *Earth in the Balance*, but on a global scale.

I predict that *Earth in the Balance* (over 300,000 in print) will be the next Silent Spring. It is a blueprint for political action from an individual who truly believes that man is on the brink of self-destruction. He now has a vehicle to drive his cause for environmental protection and an acceptance, if not encouragement from the people who put him and President Clinton in office.

Vice-President Al Gore, Jr. has a chance to be the most powerful Vice-President ever. His boss seems to want him by his side. Imagine what they will be talking about when they are together? Environmental issues no doubt. And if Al Gore does a good job for this administration and this team gets reelected, who gets to be President in the year 2000? (hint, age 53)

I highly recommend that *EARTH IN THE BALANCE* be read. It is not fun reading. It is thought provoking, somewhat educational, and shocking. Some think that it should have been placed in the fiction trash novel listing rather than the non-fiction best seller category. It has direct references to our industry and the products that we use in our jobs. It will give you some insight to how Vice-President Al Gore, Jr. thinks and what his plan is for the future.

W. K. Mueller



GUEST WRITER

New, But Old Insect Control Method

By James D. Harmon
University of California, Los Angeles

Ask any museum curator or Librarian, and they'll tell you that their collection contains some very unique and priceless items. Biodeterioration, damage and/or destruction of something by biological means such as insect or fungi, is one of the most important parts of collection management. The tried and true methods of fumigation with Ethylene Oxide, Methyl Bromide or Vikane are starting to go by the wayside with increased environmental awareness and concern. In addition, more evidence has come to light of the detrimental effects of exposure to these fumigants has on such artifacts. Most museum conservators and curators are unwilling to take such a risk. Also, usually an infestation may involve only 1 or 2 small or large pieces. Hardly enough to fill a fumigation chamber, but the charge for the fumigation is the same. Thus, a low cost, environmental and object friendly, and easy to use method of controlling insects is called for.



Low oxygen atmospheres for the control of insects in stored grains have been used for many years. Museum researchers decided to try their hand at such control methods. Carbon dioxide was not effective as was hoped, but Nitrogen was tried with excellent success. Through substituting Nitrogen for Oxygen in a confined atmosphere, museum researchers were able to kill all test insects. To scavenge the minimal available oxygen that might

leak into the chamber over the exposure period, a material known as Ageless (Cryovac, Inc.) was placed in the chamber. Ageless is commonly incorporated into food packages as small packets to reduce oxygen in the container, reduce spoilage of the product and therefore increase shelf life.

The Ageless product seemed to work so well that more work has gone into the utilization of Ageless alone in a vacuum atmosphere. An item was encased in an Oxygen impermeable plastic membrane under a slight vacuum. Ageless was placed in the "chamber" to scavenge the available Oxygen, thereby suffocating the insects. Exposure time was 2 to 3 weeks, with 100% effectiveness. Cost for each treatment was minimal.

Research at UCLA, UC-Riverside, the Getty Conservation Institute and many other institutions indicates an excellent potential for this method. The museum and library industries as well as researchers are excited at the prospect of this new, but old approach to eradicating insect infestations. In the future, we can expect to see more treatments such as this being developed and decreased usage of traditional fumigants. ✨

Jim Harmon has a B.S. and M.S. in Urban Entomology. He is a Pest Management Specialist for the University of California, Los Angeles and Private Pest Management Consultant to the museum and library industries.

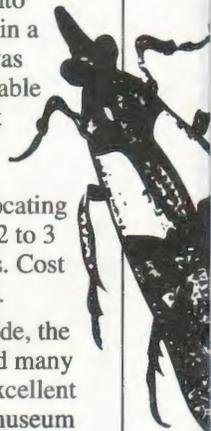
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Pest Monitoring Software can easily be incorporated into your present rodent trapping programs. No matter if it's automatic wind-up traps, snap traps, glue boards or anything else to catch mice and rats, this program will fit your needs. Pest Monitoring Software will give your customers or your superiors a professional report every time. It also gives you the advantage of knowing where potential "Hot Spots" exist and when they may become a problem.

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DDVP Update

Dennis Utterback, Special Review Manager for EPA, recently stated: "The EPA filed a notice to revoke tolerances for dichlorvos (DDVP, Vapona) for packaged and bagged food commodities. We are moving ahead in the near future

to revoke the 409 (tolerances) for dichlorvos. The near future means some time in the next two months and in the first quarter of 1993 most probably."

"I'm starting the wheels rolling to file for the revocation of dichlorvos on bagged and packaged food products. At the same time we will be proposing the cancellation of uses. This will be in a position paper."

"The new scientific data on risk assessment has not been thoroughly reviewed yet. The internal review process is slow. We hope to have that completed by spring time."

"Since 1987 the dichlorvos strip (Vapona Resin Strip) has maintained a label for use in the headspace of grain bins. This use will not be affected by this revocation. It is just for packaged and bagged products."

"We are talking alot to Amvak (dichlorvos registrant). Amvak is now deciding what part of the label they want to support."

Dennis Utterback
EPA, Special Review
401 M Street SW H-7508
Washington, DC 20460

DDVP Eliminated

Micro-Gen, of San Antonio, Texas has announced the following changes, "In a move to comply with our Environmental Mission, we will be eliminating all metal 5 gallon containers at the end of December 1992. These will be replaced with 2 1/2 gallon plastic containers which are packaged 2 per case at the same price as the 5 gallon container. Another move in keeping with our strategic Environmental Mission will be the elimination of V-500, our 5% Vapona product, by the end of December 1992. Due to environmental concerns over the carcinogenic issues of the dichlorvos and 1-1-1 trichloroethane as a potential ozone depleter, we feel as a responsible manufacturer of chemicals and a leader in the industry, the time for this move is now - - not when we are dictated to do so by the government." ✨



1992 Fumigants & Pheromones Technical Seminar

Welcome...
to Indianapolis
David K. Mueller
Program Chairman



Robert Watson, Ph.D.

"For every one percent decrease in ozone, you can expect a two-and-a-half percent increase in skin cancer."



Tom Turpin, Ph.D.

"Perception is reality, and reality is a moving target."



John Osmun, Ph.D.
and Arlene Blessing,
Purdue University



Full House, 250+ attend this two-day seminar

Rick Weinzierl, Ph.D.

"As we try to change the perceptions of the general public, we should also allow the public to shape our opinions."



Pat Kelley,
New Pheromone Software



John Mueller,
Modified Fumigation Techniques



Larry Pierce, Using pheromones as a control tool is a possibility.

BOOK REVIEWS

Ecology and Management of Food-Industry Pests

J. Richard Gorham, Editor

We live in a paradoxical world, a world in which a large proportion of agricultural production is lost between the farm and the consumer, while millions of people suffer from hunger and malnutrition, and some —far too many— simply starve to death. These dramatic losses can be largely attributed to deprivations by pests, spoilage by microorgan-

Definition of IPM by the EPA

"Coordinated use of pest and environmental information with available pest control methods to prevent unacceptable levels of pest damage by the most economical means, and



with the least possible hazard to people, property, and the environment. The goal of the IPM approach is to manage pests and the environment so as to balance costs, benefits, public health and environmental quality."

EPA, 1990

isms, and spillage and wastage of food during handling, storage, transportation, and processing. Given these circumstances, the need for expertise in the ecology and management of stored-food pests and microorganisms becomes obvious.

This manual, Ecology and Management of Food-Industry Pests, produced under the direction of the U.S. Food and Drug Administration, is designed to advance our knowledge in this vital field. It will certainly help to adapt and utilize the wealth of information available, mainly from the developed world, and transform it into action to preserve and provide adequate food supplies for the undernourished millions in the Third World. I heartily recommend it to your attention.

Edouard Saouma, Director General, Food and Agriculture Organization of the United Nations, Rome.

Chapter 10; Beetles: Coleoptera by Richard Arbogast of the Stored-Product Insects Research and Development Laboratory in Savannah, GA.

I have been using the information published in this chapter for a number of years. It provides all of the vital information one might need to know about the habits and conditions for growth of these insect pests. It also lists the environmental conditions that a pest insect can't develop. This is most important in developing an IPM program.

This well illustrated book is somewhat expensive at \$170. but a must for your reference library. ✱

Current Books Available from THE BOOK STORE:

No.	Title	Price
1.	Earth in the Balance , Al Gore, Jr.....	25.00
2.	Mallis Handbook of Pest Control , 7th ed. (out of print)	89.00
3.	Insect and Mite Pests in Food , USDA, FDA (2 volume set)....	65.00
4.	Scientific Guide to Pest Control Operations , 4th ed., Bennett, et.al (text for Purdue Correspondence Course).....	65.00
5.	Common Sense Pest Control , Least-toxic solutions for your home, garden, pets, and community, Olkowski.....	65.00
6.	PCT Technicians Handbook , Christensen.....	4.95
7.	Managing Service for Success , J. Beck, Pest control business self- help manual	30.00
8.	Principles of Food Analysis for Filth, Decomposition and Foreign Matter , FDA.....	85.00
9.	Ecology and Management of Food-Industry Pests , FDA, J.R. Gorham	170.00
10.	Silent Spring by Rachel Carson	\$16.95

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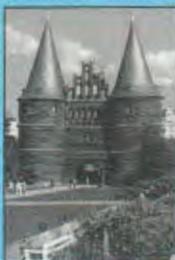
Upcoming Seminars

International Fumigants & Pheromones Technical Seminar & Workshop Lübeck, Germany December 1-3, 1993 will be the date for an international seminar for food and grain protection. It will be held at the Mövenpeck Hotel.

Anyone interested in attending, presenting a paper, or displaying should contact: Co-Chairmans:

David K. Mueller
Insects Limited, Inc.
10540 Jessup Blvd.
Indianapolis, IN
46280 USA

Dr. Ulrich W. Schwarz
BfK, GmbH I.G.
Saseler-Str. 188a
W-2000 Hamburg 72
Fax 49-40-6447199



This seminar will bring together scientists and industry to present new and innovative ways to control insects in food, tobacco and grain.

Invited speakers from the European Community and the Western Hemisphere will discuss their methods for controlling pests around the world. Methyl Bromide and its role as a ozone depletor will be a major topic of this conference. With the Montreal Protocol group meeting in Copenhagen in November, current information on this subject will be available.

Fumigants & Pheromones Regional Training Program

April 20, 1993

Bowling Green State University
Bowling Green, Ohio

A one day training program for continued education in the field of food and grain protection. For more information, call Program Chairman John Mueller at 1-317-846-5444.

Carbon Monoxide



The new threshold limit value (TLV) for carbon monoxide is 35 ppm. The level prior to January 1, 1993 was 50 ppm. This change affects workers in confined areas. This directly affects seed companies where forklifts are used extensively in the winter months when

roll up doors are closed. It also affects people using gasoline operating fogging machines in the summer when the food warehouse is sealed tight. If you have conditions which could be affected by carbon monoxide, gas monitoring equipment is available from FSS.

Draeger Tube CH-25601 (0 - 700 ppm) or a CO diffusion tube for continuous monitoring during the work day. ✱

QUOTABLE QUOTES

"Chemical safety depends on man's intelligent usage." Walter Weber

"Education is the recycling of knowledge." Al Gore Jr., Earth in the Balance

"Four out of every five common diseases in developing countries are caused either by dirty water or lack of sanitation, and

water-borne diseases cause an average of twenty-five thousand deaths a day in the Third World." according to a report by United Nations Environmental Programme, Earth in the Balance

"Don't overestimate how an isolated event can change the whole picture."

"If we only listen to people who agree with our opinion, then we only see one side of the story." Rick Weinzierl, Ph.D., speaker, 1992 Fumigants & Pheromones Technical Seminar

Tom Turpin, Ph.D., Keynote speaker, 1992 Fumigants & Pheromones Technical Conference:

1. Get a good education.
2. Enjoy what you are doing.
3. Look for reasons to be happy.



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.



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OPPORTUNITY

Fumigation Service & Supply, Inc. seeking Pest Management oriented person with a B.S. in biological sciences or the equivalent with experience preferred. Start on the ground by learning fumigation of grain and food processing facilities. Progress to supervisor of own fumigation crew and sales territory. Position will be in Indianapolis area and/or N.W. Ohio. Good salary (commensurate with exper.), Paid medical, paid life, paid disability, paid vacation, pension program. Travel, week-end, and holiday work expected. Join a progressive and innovative company which is on the grow. Career opportunity.

Send resume and salary history to: David K. Mueller, P.O. Box 40641, Indianapolis, IN 46280. No phone calls, please.

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