

# FUMIGATION UPDATE

## Far-flung fumigation

Company handles pest control on remote leper colony



As a fumigator in Hawai'i, operating the largest independently owned pest control company in the state, Michael Botha of Sandwich Isle Pest Solutions has done his fair share of interesting fumigation jobs. But the recent fumigation of the Kalaupapa

community on Moloka'i island was by far the most difficult, he says. Why? It is one of the world's only active leper colonies and very difficult to reach from the outside world.

In the late 1800s, the Kalaupapa community on Moloka'i, one of the most remote parts of the Hawai'ian Islands, became an island prison for sufferers of leprosy. In 1969, after treatment was discovered to stop the contagious disease, also known as Hansen's disease, it was no longer required for sufferers of leprosy to be quarantined on the nearly uninhabited island. Today, the small island is home to about 3,000 people. A remote peninsula isolated from the rest of the island by very tall cliffs, known as Kalaupapa National Historic Park,

serves as the residence for several lepers and their caregivers.

"We're one of the few companies that do pest management work on Moloka'i," Botha says. "We provide general pest management, structural fumigation and commodity fumigation on Moloka'i. We rent a warehouse from a coffee producer on the island, so we keep some of our fumigation and pest control equipment in storage there."

The area of Kalaupapa is difficult to reach because of some of the world's largest cliffs that surround the leper colony.

A Sandwich Isle crew of five, including Botha, spent three weeks on the island prepping and fumigating 30 historic

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# Success on a large scale

## Two companies join forces to fumigate 14 buildings simultaneously



*An aerial view shows all 14 buildings fumigated.*

Picture this: You're tasked with fumigating a condominium complex, home to 540 residents, that spans 14 buildings and 10 million cubic feet — all at once.

This was the task in California facing Willie Payne from Payne Pest Management and Manuel Aguilar from Your Way Fumigation. No strangers to large fumigation jobs — Payne says they are his specialty — both companies usually fumigate one or two buildings at a time. Not in this case.

Their need to cooperate seamlessly is important in California, which has strict fumigation laws. Typically in California, two companies are involved in a fumigation. Payne, the successful bidder on the job, served as the lead company overseeing the project, and Your Way Fumigation carried out the actual fumigation work. It was a big job with many moving parts.

"In California, it's required to have the municipalities turn off the utilities to a structure," Payne explains. "So we asked the local gas company to tell us if we could fumigate the buildings one at a time or two or three at a time. They came out and discovered some leaks in the pipes, and they also discovered because of the age of the piping, they couldn't separate or cut off any buildings. Everything would have to be done at one time."

The plan to fumigate the Lakeside Village complex was delayed seven months because those leaks needed to be repaired.

Once the gas lines were repaired and the date was set, Payne, Aguilar and their teams went to work. They held seven town hall meetings for the hundreds of residents who lived in the buildings. All residents were required to attend a meeting. As anticipated, though, not all of them were ready as the fumigation

date arrived. Payne, a veteran of large fumigation jobs, knew to expect this.

"We probably had 200 residents who needed help," Payne says. "Either they didn't double-bag their food or they left some food out. Then we had about 250 to 300 residents who needed help with anywhere from one to 10 heavy plants that had to be moved out. I brought in 32 of my own employees, and we went through every unit, in every building, one by one."

Aguilar, who called the fumigation job the biggest of his career, said the planning was the most challenging part.

"The most important thing was the timing for the 540 families that live there," he says. "We couldn't be wrong. We had to do everything by the book and in the time they wanted us to do it. We needed to make them happy."



The job intensified the weekend before the fumigation.

“We came in Saturday morning and started taping off the corners and putting carpeting on the sharp edges; we had to put sandbags around the buildings and move out the heavy plants,” Payne says. “Then we had to help people get out. We had people from our team go through each building and answer questions. That effort had to be precise and complete because we had to get to the point on Monday that we could do the tarping and nothing could stop us. We had to have the buildings tented that day.”

Residents left their homes by 8 a.m. on a Monday and were allowed back in by 3 p.m. Wednesday.

Aguilar brought two RVs to the site where he and his crew stayed, around the clock, monitoring the levels on the job.

“All through the night, I was checking the fumigant levels on all 14 buildings,” Aguilar says. “In the extra trailer, I had six guys just in

case anything happened during the night. Wind, tarp blow-opens, any inconvenience for the fumigation. Nothing happened. Everything was perfect, but we were prepared.”

In the final few hours Wednesday, Aguilar says, the Los Angeles Agricultural Commissioners Office sent an inspector to the site.

“They don’t come to every job, but they pick the jobs to go to,” Aguilar says. “Everyone wants to see these big jobs, so I sort of knew someone would come out to inspect us.”

After aeration (CAP), the inspector tested the fumigant levels in every unit of one building. Aguilar watched the clock tick, knowing residents were eager to return to their homes.

“I think she left a half hour before we needed to complete the last building,” he says with a laugh. “I was shaking because people were waiting outside to get into their homes. The pressure was really on in that last two hours.”

Despite this monumental task, they met their 3 p.m. Wednesday deadline for residents to return. Payne says everything went according to plan.

“We had one broken window, one broken globe and a few ‘keep off grass’ signs knocked over. That’s it.”

Reflecting on this huge effort, Payne credits Aguilar and his company for tremendous cooperation and skill.

“Those guys just got on it, knocked it out and met the deadline,” he says of Your Way Fumigation employees. “It was truly a fantastic effort that they put out. They monitored the job around the clock. Remember, if we didn’t get the kill, we’d have to do that whole thing again, all at once. There was no room for any error.”

Though the work was stressful, Aguilar says he received a great reward for the hard work.

“Homeowners and tenants came to tell us what a good job we did,” he says. “That’s my payback. That made me feel really happy that they came out to say ‘Thank you for doing a good job.’”

As a testament to their planning and cooperation, both men were pleased the job was completed effectively, reinforced by the fact that there were no swarming calls this year.

“We had been servicing Lakeside Village for three years for swarm calls,” Payne says. “The next year after the fumigation, we didn’t get a single swarm call, and we were averaging 30 or 40 per year. So I knew when we didn’t get those swarm calls, we were in good shape.”



Two of the 14 buildings tented for the Lakeside Village fumigation.

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Michael Botha uses a tree and a hanging scale to do his calculations.

buildings for drywood termites. All of the buildings are or had been patient homes.

Getting the fumigation equipment to the remote portion of Moloka'i was a job in itself. First, additional equipment was shipped on a barge from O'ahu to Moloka'i. From there, it was trucked to an open field at the top of the mountains where a helicopter Botha chartered from Maui waited. Workers loaded the equipment in 1,000-pound loads and the helicopter flew it over the cliffs to the tiny airport in the Kalaupapa community. It took nine trips and four hours to deliver all of the tents, clips and other equipment necessary for fumigation. The crew also brought three weeks' worth of food plus bicycles, a necessary mode of transportation on the island.

"We took half our crew and dropped them off on the runway to wait for the helicopter," Botha says. "The

other half was responsible for loading the helicopter from the warehouse. The helicopter would lower the equipment on the ground at the airport, the crew would unhook it and then they'd fly off to get another load."

There was one glitch on the helicopter's final trip to the Kalaupapa runway. Botha thinks the basket dangling under the helicopter might have been a bit overloaded, and much of their food fell out of the net.

"In Kalaupapa, there is no grocery store or restaurant," he explains. "There's a small store where residents can buy things, but since a barge comes only once a year, they only allow the residents to buy things. We lost our coolers with all of our meat, milk, eggs, drinks and spices.

"We did have our fishing rods with us, so we were able to catch fish. We also made friends with some of the locals who work in the leper colony. Deer run wild on the island because there are no natural predators there and they are seen as a nuisance because they destroy people's gardens. The locals shot some deer, so we had fresh meat every night. The great Aloha Spirit extended to us by the locals was amazing. We felt very privileged to have shared the beautiful colony and to meet the caring people who call Kalaupapa home."

Fumigating structures on such a remote island calls for improvisation as well, says Botha.

"To measure the weight of the cylinder and do our calculations, we used trees and a hanging scale," he explains.

Worker safety is a concern on every fumigation job, but with this one, the

workers of Sandwich Isle were dealing with an area known for the presence of a contagious, debilitating disease. Was there concern that workers could be exposed to leprosy?

"When we got there, we were quickly informed as to the protocols of working with the patients," Botha explains. "The contract representative discouraged any contact at all with the patients. Basically, we had no interaction with them at all. When we fumigated the patients' homes, the state workers would go in there and move the patients so we never even saw them."

From a technical standpoint, Botha says the fumigation of that many buildings — mostly houses — was not difficult.

"Everything went great," he says. "We were very fortunate with the weather. Kalaupapa peninsula normally has 25 to 30 miles per hour winds every day, so we'd start shortly after sunrise when the wind was down and try to get everything done as fast as possible before the winds picked up in the afternoon."

In Hawai'i, it's best to fumigate for drywood termites every five to seven years due to reinfestation, according to Botha.



Sandwich Isle fumigators use bicycles to get around while working on Moloka'i.

# BACK TO THE BASICS

## ON THE FOREFRONT FOR BED BUG CONTROL WITH NEW RESEARCH, LABELING AND RESOURCES

By Ellen Thoms, Ph.D.  
Technical Expert, Dow AgroSciences

Fumigation with a fumigant, such as Vikane® gas fumigant, is considered by experts to be the most reliable treatment for eradication of bed bug infestations. The reason is the physical properties of sulfuryl fluoride, the active ingredient of Vikane. Dr. Thomas Phillips, a fumigation expert at Kansas State University, states, "Gasses penetrate all areas of a structure. If fumigation with sulfuryl fluoride is properly done, it can be the most effective method to control bed bugs available to the pest management professional." In addition, complete pest eradication can be documented through monitoring of the fumigant during a fumigation.

Phillips and Dr. Changlu Wang, a well-known bed bug researcher at Rutgers University, collaborated with Drs. Ellen Thoms and Joe DeMark at Dow AgroSciences to re-evaluate the dosage of Vikane required for control of bed bugs. Their extensive laboratory research, which tested more than 4,400 eggs and 600 adults and nymphs of bed bugs, verified that a 1.9X dosage factor of Vikane controlled all life stages of bed bugs. Prior to this research, a 3X dosage factor was required on the label for Vikane for control of bed bugs. The 3X dosage factor was based on limited laboratory trials conducted more than 50 years ago, when bed bugs had become a rare household pest in North America.

This new research was reviewed by scientists at the U.S. Environmental Protection Agency, resulting in a change in the labeling for Vikane® gas fumigant to reduce the dosage factor required for bed bug control to 1.9X. This research was recently published in the *Journal of Economic Entomology*, one of the leading scientific journals of the Entomological Society of America. A summary of this research is available in the Dow AgroSciences Technical Bulletin (Literature no.: U47-069-004). This research has refocused the pest control industry on the advantages offered by Vikane for bed bug control. These advantages include reliable elimination of all life stages of bed bugs with no adverse effects of the gas on electronics, fabrics, toys, furnishings and other items.

Fumigators using Vikane began to receive cylinders with the new labeling for the 1.9X dosage factor in 2014. The reduction in dosage factor can reduce the cost of Vikane for fumigation of bed bugs. The new labeling also permits a wider range of mattresses with waterproof coverings to be fumigated by stating, "Mattresses and pillows with waterproof coverings containing built-in vents designed to permit air passage are considered to have an open seal to the waterproof covering and can remain as-is in the fumigated space."

Dow AgroSciences also updated its "Facts About Bed Bugs" and packing checklist "How to Leave the Bed Bugs Behind," (Literature no.: U01-069-155). The packing checklist describes procedures for residents to follow to avoid taking bed bugs with them when they leave their home to have it fumigated. The updates are based on the most recent research on bed bug biology and behavior, and fumigators' experiences with preparing residents to have their homes fumigated with Vikane. The updates in the packing checklist include:

- Fumigating personal mobility devices, such as wheelchairs, walkers, baby strollers, child car seats and cars, which can be infested with bed bugs
- An expanded list of pet items, including fabric toys, clothing, and retractable leashes, which could contain bed bugs.
- Revised directions for washing and drying fabric items (such as clothes, toys, pet bedding, etc.) needed by residents when they temporarily leave their home
- Revised directions for preparation of pillows and mattresses

Dow AgroSciences continues to actively support and expand the use of Vikane® gas fumigant for medically important pests such as bed bugs. Please contact your distributor or Dow AgroSciences representative for Vikane to obtain the literature described above.

# REGRESANDO A LOS FUNDAMENTOS BÁSICOS:

## AL FRENTE DEL CONTROL DE CHINCHES DE CAMA CON INVESTIGACIONES NUEVAS, ETIQUETAS Y RECURSOS

Por Ellen Thoms, Ph.D., Experta técnica, Dow AgroSciences

Según los expertos, la fumigación con un fumigante, como el gas fumigante Vikane®, es el tratamiento más confiable para erradicar infestaciones de chinches de cama. El motivo son las propiedades físicas del fluoruro de sulfuro, el ingrediente activo de Vikane.

El Dr. Thomas Phillips, un experto en fumigación de la Universidad del Estado de Kansas, asegura que, “Los gases penetran todas las áreas de una estructura. Si la fumigación con fluoruro de sulfuro está bien hecha, puede ser el método más efectivo para el control de chinches de cama disponible para los profesionales de control de plagas”.

Además, se puede documentar la erradicación completa de la plaga a través del monitoreo del fumigante durante la fumigación.

Phillips y el Dr. Changlu Wang, un reconocido investigador de chinches, de la Universidad Rutgers, colaboraron con los Dres. Ellen Thoms y Joe DeMark de Dow AgroSciences a fin de reevaluar la dosis de Vikane requerida para el control de chinches. Su investigación de laboratorio extensiva, donde se evaluaron más de 4.400 huevos y 600 adultos y ninfas de chinches, verificó que con el factor de dosis de 1,9X de Vikane, se pueden controlar todas las etapas de la vida de las chinches. Antes de esta investigación, se requería una dosis de 3X en la etiqueta de Vikane para el control de chinches de cama. El factor de dosis de 3X se basó en pruebas de laboratorio limitadas realizadas hace más de 50 años, cuando las chinches se habían convirtieron en plagas raras en hogares de Norte América.

Esta nueva investigación fue revisada por científicos de la Agencia de Protección Ambiental de EE.UU., lo cual produjo un cambio en la etiqueta del gas fumigante Vikane® a fin de reducir el factor de dosis requerido para el control de chinches a 1,9X. Esta investigación fue publicada recientemente en el *Journal of Economic Entomology*, una de las publicaciones científicas más importantes de la Sociedad Entomológica de América. Un resumen de esta investigación está disponible en el Boletín Técnico de Dow AgroSciences (Numero de literatura: U47-069-004). Esta investigación hizo que la industria del control de plagas volviera a poner foco en las ventajas ofrecidas por Vikane, para el control de chinches de cama. Estas ventajas incluyen la eliminación segura de todas las etapas de la vida de las chinches, sin efectos adversos del gas en productos electrónicos, telas, juguetes, muebles y otros objetos.

Los fumigadores que utilizan Vikane comenzaron a recibir cilindros con las nuevas etiquetas con el factor de dosis de 1,9X en 2014. La reducción

en el factor de dosis puede reducir el costo de Vikane para la fumigación de chinches. Las nuevas etiquetas también permiten la fumigación en una gama más amplia de colchones con fundas impermeables ya que dicen: “Se considera que los colchones y almohadas con fundas impermeables con poros incorporados en su estructura para facilitar la circulación de aire tienen un sellado abierto hacia la funda impermeable y pueden permanecer tal cual están en el espacio a fumigar”.

Dow AgroSciences también actualizó sus “Datos sobre Chinches de Cama” y la lista de verificación de empaque “Cómo Deshacerse de la Chinches de Cama” (Numero de literatura: U01-069-155). La lista de verificación de empaque describe los procedimientos que los residentes deben seguir para evitar que las chinches se vayan con ellos cuando desocupan la casa para la fumigación. Las actualizaciones se basan en las investigaciones más recientes de la biología y el comportamiento de las chinches, y las experiencias de los fumigadores al preparar a los residentes para que sus hogares sean fumigados con Vikane. Las actualizaciones de la lista de verificación de empaque incluyen:

- La fumigación de dispositivos de movilidad personal, tales como sillas de ruedas, andadores, cochecitos de bebé, asientos para automóviles infantiles y automóviles, que pueden estar infestados con chinches
- Una lista más amplia de elementos de mascotas, incluyendo juguetes de tela, ropa y correas retráctiles, que podrían contener chinches
- Indicaciones revisadas para el lavado y secado de artículos de tela (tales como ropa, juguetes, camas de mascotas, etc.) necesarias para los residentes cuando desocupan el hogar temporalmente
- Indicaciones revisadas para la preparación de almohadas y colchones

Dow AgroSciences continúa apoyando activamente el uso del gas fumigante Vikane® para plagas importantes desde el punto de vista médico tales como las chinches de cama. Por favor contacte a su distribuidor o representante de Dow AgroSciences de Vikane para obtener la literatura descripta anteriormente.

Vikane es un pesticida de uso restringido a nivel federal.



## Killroy's redesign pays off with Banner Contest win

The Pest Control Operators of California's annual Banner Contest awarded first prize this year to Killroy Pest Control of Campbell, California. This is the 11th year of the contest, sponsored by Dow AgroSciences.

The judging panel commented that Killroy's winning banner was professional and easy to read, plus the judges liked how it showed a photo of happy customers.

Killroy Pest Control Vice President and Co-owner Richard Schmidt says the company was inspired to update its branding and banner because of this contest.

"We've been doing a lot of rebranding in our company and have been looking at things from a different perspective," Schmidt says. "We changed a few things on our logo, and this contest inspired us to make more changes."

The company banner was designed by Steve Marsh of Be Competition Free, a local marketing company. Marsh worked with



Killroy Pest Control's winning banner.

Killroy owners Richard and Lynn Schmidt to help update the company's brand work.

"I like that the family on our banner shows that we're a family-friendly business," Schmidt says. "I think that the tent on a home sometimes scares people, so this banner helps make fumigation look friendlier."

In second place was Brezden Pest Control of San Luis Obispo, California, with a colorful banner boasting the company's name and phone number. Taking third was a banner from Craig & Sons Termite & Pest Control Inc. of Ontario, California. The banner shows a termite holding an American flag and features the Vikane® gas fumigant logo. Fourth place was awarded to Ecola of Mission Hills California, which boasts, "The Ecola way is the better way!"

Participating fumigation companies submitted photos of their banners, which included their business name, logo and contact information. A panel of communications specialists judged the banners based upon readability from a distance, professionalism, visual impact and attractiveness. Pest control companies with the winning banners will be given prizes in the following amounts: first place, \$1,250; second, \$1,000; third, \$500; and fourth, \$250.

"Dow AgroSciences has sponsored the PCOC Banner Contest for over a decade," says Heather Kern, Dow AgroSciences product manager

for Vikane gas fumigant. "The contest allows our fumigator partners to take pride in their banners, engage in some friendly competition and promote the value of structural fumigation with Vikane gas fumigant."

## California DPR research update

In order to provide information for an ongoing California Department of Pesticide Regulation (CA DPR) review of sulfuryl fluoride, Dow AgroSciences is investing in additional research in two general areas.

One area of focus includes state-of-the-art toxicology studies for the U.S. Environmental Protection Agency and CA DPR evaluations. To date, Dow AgroSciences has completed 14 studies in this area of research and will complete even more research next year.

A second area of study involves additional research on ambient air concentrations of sulfuryl fluoride indoors and outdoors during fumigation, aeration and post-aeration. These studies are currently being conducted by CA DPR and Dow AgroSciences to demonstrate acceptable exposures to the bystander and re-occupant populations.

At this time, Dow AgroSciences expects all studies to be complete in the spring of 2015 and this data will allow for a more informed evaluation by DPR. Watch for more information on this topic in the next issue of *Fumigation Update*.

# Slow and steady

## How the historic Thomas Center became termite-free

When the Thomas Center, a historic building that holds a museum and hosts civic functions in Gainesville, Florida, decided to do something about their 25-year drywood termite infestation, Southern Fumigation stepped up to the plate. Owner James Yeomans says the most difficult part of the fumigation was ensuring nothing was damaged while fumigating the 4-million-cubic-foot building.

“The building has an almost new slate tile roof,” he explains. “I was responsible for any damage done to the building. We had to remove plants from inside the building, and we had to guarantee that we wouldn’t harm the landscaping outside.”

To ensure the job was done safely, without damaging anything, Yeomans’ crew members took their time, moved a little more slowly and were very careful about each step they made.

“I walked around and took pictures of the whole roof, prior to us going on it,” he explains. “There were three or four broken tiles on the entire building, so I took pictures of those and showed them to the city’s liaison. After the fumigation was done, we went around and checked again. We had only cracked a tile that

was already cracked. The liaison was able to repair it with silicone.”

It was evident that the termites had been taking up residence in the Thomas Center for a long time, says Yeomans.

“I would say the infestation has been there for 20 to 25 years,” Yeomans says. “It’s an old building, but it’s had good maintenance. The drywoods were everywhere.”

In fact, the Thomas Center experienced swarming termites every year.

Although the employees at the Thomas Center were aware of fumigation, their knowledge was based on outdated methods.

“They had never heard of the things we were talking about, so I had to educate them prior so they understood what we were going to do,” Yeomans says. “I would assume they talked to someone about fumigation years ago and had a basic list of questions to ask about fumigation.”

Yeomans worked with Eric Hobelmann, his sales representative from Dow AgroSciences, to share literature about Vikane® gas fumigant with the city



The Thomas Center is carefully tented during its fumigation by Southern Fumigation.

manager. Next, Southern Fumigation held a mini town hall meeting to talk about concerns and expectations.

One thing was certain, this building had many failed spot treatments over the years.

“There’s no telling how many times it was spot-treated before,” Yeomans says. “I’m almost positive it had been liquid-treated for years, and there’s no way to liquid-treat a building of that size.”

The results spoke for themselves.

“The city was pretty happy,” Yeomans says. “We took extra care. It took us a little longer, but we did it.”

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