WHAT'S BUZZING?

Pest Management Association of New Zealand (PMANZ)

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From The President's Pen

Greetings to All!

As I write this I am reflecting on the year we have all had, I sincerely hope it has been a very profitable for all and of course, more importantly, a very interesting year for all concerned.

I would like to thank all members for their continued support of PMANZ and to all members of the committee who have given so much of their time helping with the day-to-day running of the organisation.

We have been working with the various government groups and throughout the year re the re-organisation of our training material and this has resulted in a new training group being formed and the need to re-write all of

Continued on next page 2

the current material. This is being led by the one of our committee members, Steve Hunn, who is also an industry assessor. This will be one of our first objectives to complete in 2013.

With the weather now improving which tells us, I believe, summer has finally arrived. I sincerely hope this brings with it a much need boost to the last month of the year, which also sets the right tone for the beginning of the new year.

I would like to take this opportunity to wish everybody a very Merry Christmas and a prosperous New Year.

Rowan Washer

President, PMANZ
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PEST NEWS: Here and There - Codling moth patrol apple orchards

Biological control, the use of living organisms to control pest populations dated back in ancient times. The recorded history of biological control may be considered as dating from Egyptian records of 4,000 years ago, where domestic cats were depicted as useful in rodent control.[1] It has carried on centuries later as people found the important role it plays in native biodiversity and invasive species.

The most common problems with biological control occur via predation or other attacks on non-target species—which can sometimes happen as the introduced control agent does not always target its intended species and can also target native species. Hence, biological control initiatives can potentially have positive and negative effects on biodiversity.[2]

The media release by the EPA on the codling moth—as the new insect patrolling apple orchards is no different to how Hawai'i is using the arctidae moths as its state's 'weapons for mass defoliation'. These two instances are important components of an integrated pest management program in place relying on predation and natural mechanisms and involves an active human management role. The increased use of biological control agents ensures a reduction of chemical interventions alternatives in this situation. Further on, you will also find another article contributed by ALPECO, which prefers natural alternatives over chemical interventions in pest control management. — ***Editor***

Media Release: New insect to patrol apple orchards

Hawkes Bay, New Zealand. 1 November 2012

New Zealand pipfruit growers are enhancing their management options for one of the key pests for the pipfruit industry – the codling moth – with the release of a new biocontrol agent.

Plant & Food Research scientists, with support from Pipfruit New Zealand, have been investigating the potential for Mastrus ridens, a small parasitoid wasp, to control the codling moth, one of the major pests affecting the New Zealand pipfruit industry. Following EPA approval, field appraisal will take place over the next few years to measure the effectiveness of the wasp as a long term biological control agent. The first release in commercial orchards, of 1,000 individuals, has been/will be made in Hawke's Bay today/this week.

"Codling moth is a major issue for the pipfruit industry, with control of the pest costing between $8 and $12 million each year," says Mike Butcher, Technical Manager of Pipfruit New Zealand. "Whilst the presence of a single moth in a shipment can impact on market access for all New Zealand apple exports to codling moth sensitive markets, the industry is also focused on reducing the use of chemical pesticides. This ultimately means we must find new ways to control pests, and the introduction of the Mastrus wasp as a biological control agent is an important new component to our system that currently includes mating disruption, a codling moth specific virus and selective chemistry. This release is an important step in meeting quarantine requirements for our premium markets."

PEST NEWS: Here and There - Hawaii's weapons of mass defoliation

The Mastrus female attacks the cocoons of codling moths, laying its eggs on the moth larvae. When the wasp larvae hatch, they feed on, and eventually kill, the codling moth larva. They then emerge as adult wasps to disperse and seek new codling moth larvae on which to lay their eggs.

"Biological control agents, such as parasitoid wasps, play an increasingly important role in controlling pests as chemical interventions are reduced," says scientist John Charles from Plant & Food Research. "This species, which originated in Kazakhstan, has been established in other countries, particularly in the USA, for control of codling moth, and these initial releases in New Zealand will help us to determine how well they survive in our environment and control the pest."

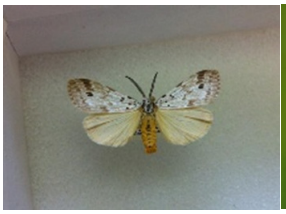
The Mastrus wasp was approved for release by the Environmental Protection Agency in June, and thousands have since been reared in captivity.

A video showing the female Mastrus wasp laying her eggs can be found at http://plantandfood.us5.list-manage.com/track/click?u=1b46d14e528ad30bae8b3663c&id=4098e51aff&e=5b367992d8.

Link: © Scoop Media *http://www.scoop.co.nz/stories/SC1211/S00008/new-insect-to-patrol-apple-orchards.htm*

Hawaii's State Weapons of Mass Defoliation

KITV News, Jill Kuramoto, Dec 13, 2012



What is a fireweed? According to Jill Kuramoto from Honolulu KITV News, "fireweed originates from Madagascar and it's believed to have arrived in Hawaii in the 1980s through imported mulch. It can kill cattle and horses and has infected about 850,000 acres, mostly on Maui and the Big Island."

In Hawaii, fireweed has no natural predators so releasing arctiidae moths to fight this weed that is toxic to cattle and horses seems to be a solution to the state's problems. And, in their very catchy phrase, these moths are the *'state's weapons of mass defoliation'*.

According to the KITV News, Dr. Neil Reimer, plant pest control branch manager with the state Department of Agriculture, envisaged a 'dramatic impact' on fighting this fast-spreading weed on all affected areas. The only other concern and 'unknown variable' they believe is that there may be other predators or parasites that may attack the moths.

Watch the video on and to read KITV News, refer to: http://www.kitv.com/news/hawaii/State-battles-invasive-species-with-moth/-/8905354/17772248/-/vk73c4/-/index.html

LIVE: Mr Key ate live bugs at Vector Arena

6:20 AM Monday Dec 3, 2012

As part of *Man vs Wild* star Bear Grylls' show at Vector Arena in Auckland, John Key ate bugs.

Mr Key promptly chewed and swallowed the insect before putting out his hand for more. In the NZ Herald news online, he said,

> *"You couldn't bite them fast enough to kill them so they're wriggling down the back of your throat, then they're wriggling back up, and I had to pull them out from in between my teeth."*

Link: *http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10851507*

Biodiversity funds hotel for insects

© Fairfax NZ. Jo Belworthy. 03 October 2012

What's happening in Northland's river town Dargaville?

> *"The cheapest hotels in town are open for business.*
>
> *All are set in a prime location and offer guests the perfect place to rest their weary heads.*
>
> *No resource consent was needed, there are no rates to pay and the residents might not be everyone's cup of tea. But that's because these are no ordinary hotels.*
>
> *The walls are made of ponga, the beds don't sport luxury sheets and the showers are only available when it rains."*[1]

[1] *http://www.stuff.co.nz/auckland/local-news/northland/dargaville-districts/7756766/Strictly-for-bugs*

Biodiversity funds hotel for insects cont'd…

The hotels were built strictly for **INSECTS**!

A $1400 Kaipara District Council biodiversity fund paved the way for the plans of some Year 10 students from Dargaville High School to build, complete and install insect hotels.

So, why build a hotel for insects you might ask?

According to the Fairfax report, the students researched and came up with an idea of using a ponga and tota-ra log hollowed out, drilled and bolted with a Perspex glass viewing area on top. It will then be hanged on a chain from a tree. The log is meant to be a safe haven for the insects to increase. It says in the report -

> *"By providing the right habitat, the number of beneficial insects can be increased, restoring the balance in the garden and reducing the number of so-called pests."* [2]

[2] *http://www.stuff.co.nz/auckland/local-news/northland/dargaville-districts/7756766/Strictly-for-bugs*

Miniature intelligent insect spy drones not to be swat away

In a Weekend Review, something extraordinary got a headline.

"What might appear to be a mosquito or something similar could, in fact, be a miniature spy drone which is snooping on you and being controlled by someone thousands of kilometres away."

Now, this is not some sci-fi movie in the making. This is the development of the first micro aerial vehicle (MAV) also known as insect spy drones because of the way they mimic the appearance and flight patterns of winged insects. And to our naked eyes, they would look like the real thing.

Bigger versions of these drones known as unmanned aerial vehicles (UAVs) are already deployed around the world to gather intelligence on enemy activities. What are these vehicles capable of doing? They can fly above a battle zone for up to 14 hours taking HD images; equipped with camera and microphone, they can land on you and take samples of your DNA or leave tracking nanotechnology on your skin.

Now, that can give anyone a nasty surprise. These works on 'miniaturism' is a complex intelligence system and insect spy drones have many applications. NZ is keen on using these drones. To read more about this, refer to *http://www.nbr.co.nz/article/beware-intelligent-insects-they-are-spying-you-weekend-review-rv-131241*

MEDIA RELEASE: MPI investigation into clinical cases of anaemia in cattle in Northland

7 December 2012

Ministry for Primary Industries (MPI) has received reports of anaemia in cattle in the Northland region, with the presence of *Theileria orientalis* in some of these sick animals. Although *Theileria orientalis* may cause anaemia it is not necessarily the cause of this condition because the parasite is often also found incidentally in healthy animals.

Clinical symptoms of anaemia in cattle include lethargy, exercise intolerance and increased respiratory and heart rates.

Theileria orientalis has been known to be present in northern New Zealand since the 1980s. It is a tick borne parasite that may cause anaemia in cattle. There are no human health or food safety risks associated with *Theileria orientalis*.

Theileria is transmitted by ticks and reports from veterinarians in the Northland region indicate an increase in tick numbers this year.

The current investigation and laboratory analysis carried out by MPI indicates other factors may be associated with this condition (e.g., trace element deficiency and metabolic disease). Laboratory work is ongoing and the investigation will explore the role of these factors.

There is no evidence that a new strain or an exotic organism is involved in this condition.
MPI, veterinarians and industry representatives are working closely together to determine the extent and cause of this condition.

Farmers that suspect their cattle may have this condition should contact their veterinarian for advice. This will inform the investigation and identification of the cause of the anaemia and will help determine the extent of the problem.

Northland veterinarians have been asked to report on suspected cases.

For media queries please contact: MPI media line 029 894 0328

What is *Theileria orientalis* ?

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The Ministry for Primary Industries (MPI) released a media release on the reported anaemia cases in cattle in the Northland region. While it appeared that there are no human health and safety risks associated with it, the increasing number of ticks this year alarmed MPI and lab analysis are being carried out to assist their further understanding of the disease.

So what is *Theileria orientalis*? NSW DPI (http://www.dpi.nsw.gov.au) defines *Theileria orientalis* as protozoan parasites carried by ticks. So, how does the infection get spread? Generally ticks are the carriers (vectors) responsible for spread of Theileria throughout the world. In the case of the Northland region, it is paramount that the parasitic disease is distinguished from the far more serious diseases caused by other species of *Theileria* such as east coast fever (caused by *Theileria parva)* that occurs in Africa and Tropical *Theileriosis (caused by T. annulata).* The disease occurring in the Northland region is referred to as Bovine Anaemia caused by *Theileria orientalis group.*

When ticks carrying *Theileria orientalis* feed on cattle, the parasite gets into their bloodstream and enters red blood cells. When sufficient red blood cells are destroyed, this condition can cause anaemia- a reduction in the red blood cell numbers. This reduction affects the inability of blood to carry oxygen and therefore makes the animal ill and show symptoms such as lethargic, lack of appetite, exercise intolerant (weak cattle that lag behind the mob if moved). If forced to run they may stagger and gasp for breath and some may collapse and die. Their gums will be pale and/or yellow. Pregnant cows may abort and still births are common. In dairy cows a drop in milk production will occur. Death rates are highest in heavily pregnant cows.[1]

Australia has had a share of this problem from 2010. http://www.dpi.nsw.gov.au/biosecurity/animal/info-vets/theileria and DPI NSW had recommended certain precautionary measures and general management measures of susceptible animals.

General management

If cattle are in good condition and are on good feed, they will be less susceptible to disease. Careful attention to nutrition, worm control and trace element supplementation (if required) will minimise susceptibility to disease.

What is *Theileria orientalis* ? *Continuation...*

If possible, avoid mustering or otherwise stressing stock at times when there is a high risk of disease.

At this stage it is not known if infection can be transferred from animal to animal by management procedures such as multiuse needles, castration knives, etc. If practicable, items such as castration knives should be cleaned and then disinfected between animals. Where not possible such as vaccinating a mob of cattle, use sharp needles and change regularly to minimise blood transfer.

Reference: [1]http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0003/404679/Bovine-anaemia-caused-by-Theileria-orientalis-group-Primefact-1110.pdf

The most recent Bovine anaemia in Australia was in March 2012. These cases were incurred as a result of infection with *Theileria orientalis* group. According to the Flock and Herd Case Notes (http://www.flockandherd.net.au/cattle/reader/bovine%20anaemia%20theileria.html),

On the first property a group of 12 cows and two bulls were affected and on the second, two cows died and two calves were still born. Both properties had introduced cattle from Southern NSW or Victoria in the preceding three to four months.

Reference:
http://www.flockandherd.net.au/cattle/reader/bovine%20anaemia%20theileria.html, p1.

How do they plan to control the vector (ticks)?

Laboratory and investigation analyses are underway. We might learn from the experience in Australia whereby the strategy was to reduce the tick numbers. DPI NSW believes reduction in tick numbers will also reduce the likelihood of cattle becoming infected. The Bush tick is suspected as the main vector and its control is described in:

http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/50377/three_ticks_of_concern_to_nsw_stockowners_-_primefact_84-final.pdf

MEDIA RELEASE: Two men sentenced for biosecurity breaches

28 November 2012

As the result of two successful prosecutions by the Ministry for Primary Industries (MPI), two men have been sentenced for separate breaches to the Biosecurity Act after being caught with prohibited plant material.

In the first of two cases, Yaping Wang was intercepted on January 12 at Auckland Airport with a number of packets of seeds concealed in his jacket and luggage after arriving on a flight from China.

The court heard that Wang blamed his mother for the seeds and believed that she had packed them to ensure he had food on his journey. Judge McElrea was not impressed considering the seeds were wrapped up in 14 socks and buried at the bottom his luggage.

Last Friday 23 November, Mr Wang pleaded guilty to one charge of attempting to possess unauthorised goods under section 154 of the Biosecurity Act 1993. He was convicted and fined $2,000, and ordered to pay Court costs of $132.89.

In the second case, Philip Chong was caught importing prohibited plant material after packages were intercepted by MPI staff at the international mail centre in Auckland under a false name. In March MPI investigators executed a search warrant at Chong's address and seized a number of seeds as well as cuttings that had been planted in his garden.

On Monday 26 November, Mr Chong pleaded guilty to two charges of possessing unauthorised goods under section 154 of the Biosecurity Act 1993. He was convicted and sentenced to 200 hours community work for the plant-related charge and 80 hours for the seeds-related charge to be served concurrently.

Craig Hughes, Manager North Passenger and Mail, Border Clearance and Services, MPI says, "both of these cases are blatant breaches of the Biosecurity act and we are happy to see successful convictions for both men."

"It is neither legal nor wise to import plant material into the country without approval and doing presents a very real threat to New Zealand's biosecurity. These are two examples that show there is a significant price to pay for those who choose to ignore the rules that protect our country from exotic pests and diseases."

Media contact: James Sygrove, Senior Communications Adviser Phone: 04-894 0255 or 021 195 0255

Blatant breaches of Sec54 of the Biosecurity Act 1993

The media release on two successful prosecutions of men who breached the Biosecurity Law on separate instances made it clear to the public how MPI and Biosecurity take breaches to the Act seriously.

So what was stated in Section 54 of the Biosecurity Act 1993?

Compliance orders

Heading: inserted, on 18 September 2012, by section 66 of the Biosecurity Law Reform Act 2012 (2012 No 73).

154 Scope

(1) An inspector or authorised person may make a compliance order against a person.

(2) A compliance order may—

(a) require the person to cease doing something that, in the opinion of the inspector or authorised person, contravenes or is likely to contravene biosecurity law; or

(b) prohibit the person from starting something that, in the opinion of the inspector or authorised person, contravenes or is likely to contravene biosecurity law; or

(c) prohibit the person from doing something again that, in the opinion of the inspector or authorised person, contravenes or is likely to contravene biosecurity law; or

(d) prohibit the person from having something done on the person's behalf that, in the opinion of the inspector or authorised person, contravenes or is likely to contravene biosecurity law; or

(e) prohibit the person from having something done on the person's behalf again that, in the opinion of the inspector or authorised person, contravenes or is likely to contravene biosecurity law; or

(f) require the person to do something that, in the opinion of the inspector or authorised person, is necessary to ensure that the person complies with biosecurity law.

Section 154: replaced, on 18 September 2012, by section 66 of the Biosecurity Law Reform Act 2012 (2012 No 73).

By virtue of this section of the Biosecurity Law, importing plant material (other than pest and diseases) into the country without appropriate approval can pose a real threat to New Zealand—its economy, environment, health and cultural identity.

Successful convictions of people intercepted at the airport for arriving on a flight with a number of packet of seeds concealed in a jacket or wrapped in 14 socks and buried in a luggage.

MPI works at three levels to reduce biosecurity threats to NZ: overseas - to stop travellers and importers bringing pests to New Zealand; at the border - to identify and eliminate pests that do arrive; and in New Zealand - to find, manage or eliminate pests that have established here. It is therefore, a joint effort involving central government, regional councils, industry, community groups and of course us.

Why Use Chemicals When Alternatives Exist?

In my school, I have had a long year of focused learning on sustainability issues that affect our environment to our primary school students. We discussed e-wastes, carbon footprints, energy use, water usage and natural alternatives among other topics and discussed lengthily how they impact on the world we live in.

One of our members, ***ALPECO Managing Director, Heiko Kaiser*** *would like to share experience and facts from their latest research and feedback for the Bed Bugs & Co. - Pro & Con. The research findings are great opportunities to educate our PMANZ membership and has a sustainability concept that recognises their responsibilities towards the environment apart from its interest in pest control.*

The following contribution outlines the rampant bed bug problems, some basic facts about bed bugs, how to ID bed bugs, ALPECO's views on canine scent detection, bed bug domes, other bed bug treatments and the company's Thermo Bug and Cryonite solutions.

If you want further clarifications about the research findings, please contact Heiko directly on email info@alpeco.co.nz / or web www.alpeco.co.nz . I hope you find the feedback of high interest as much as I have enjoyed the read. —— ***Editor***

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Who is ALPECO? ALPECO is specialized in Bed Bugs & Co. treatments with solutions Thermo Bug and Cryonite. It is one of the leaders in high tech pest control technology in New Zealand and Pacific. ALPECO's interest is the education opportunity for latest, natural, environmentally friendly and effective methods. *Why use chemicals when alternatives exist?*

Bed Bugs & Co. Pro and Contra

Customer Feedback

"Well, add me to the long list of people who may have been taken in by a K9 bed bug inspection. Two days ago we had a dog come in our house after our 4 month old daughter was getting red welts for a week or so.

The dog spent all of 15 minutes looking around "hitting" on two areas in our daughter's room and our bed but we have yet to find evidence and the inspectors didn't have anything to show us. They kept saying that we were probably in the very early stages of an infestation and that these bugs were very small and are good at hiding. I understand these things, but that is precisely why I hired what I thought were professionals and specialists.

The whole thing has left a bad taste in my mouth. We still don't know whether we have bedbugs, our daughter hasn't had any bites in about 4 or 5 days but I don't know if that is just because the bugs are taking a break. My husband's work place won't let him back to work until he has confirmation either way. So, while neither my husband nor I are getting bitten we're still losing sleep at the thought of our baby being feasted on by these bugs. And it's a no-win situation: if we move her into our room the bugs may migrate and she'll still get bitten. I am also making a plea to "rat out" dishonest or underperforming K9 inspections. It is unconscionable for these companies to be making money off the legitimate fear and anguish of people who think they have bedbugs. I am angry, upset, and out of pocket by $350."

Continued next page….

Why Use Chemicals When Alternatives Exist? *continuation....*

The growing bed bug epidemic

Bed bugs existed back when we lived in caves and were eradicated over a period of many years due the use of strong pesticides and other chemical in our households.

With the return of bed bugs and the over use of toxic chemical to eradicate them, they are building a resistance to chemical treatments and as a result are starting to spread throughout hotels, apartments, hitching rides via luggage, and clothing thereby spreading around the world.
Now pest controllers are trying to cash-in on your fear, trying to offer you the perfect solution to the problem. In reality few pest controllers understand what is really required to eradicate bed bugs making promises they cannot keep.

Some basic facts about bed bugs

- Travelers pick bed bugs up in airplanes, taxis, cinemas, hotels, motels and backpackers.
- It takes 6-10 days for a bed bug to hatch and a further 35-48 days for a bed bug to become an adult.
- Females lay 1-5 eggs after each blood meal and can lay up to 200 eggs during its lifetime of approximately 9-18 months.
- Bed bugs can survive for 500 days with no blood.
- They can travel up to 20 meters in a night and spread by walking from room to room along skirting, under gaps in walls, through electrical socket ducting and hitching a ride in the laundry bin
- The eggs of bed bugs do not get killed when toxic chemicals are used due to the tough outer shell and will hatch 10 days later.
- Bed bugs cannot survive when frozen or experience heat of over 52.8°C.

Identification of bed bugs

Bed bugs are quite easy to see once they have reached adulthood. They are similar in shape and size as an apple seed and easy to see, however until a large infestation has taken hold it can be difficult to find the odd bed bug that has hitched a ride and is hiding under the bed, but is coming out to munch on you at night.

The truth about canine scent detection and bed bugs

Bed bugs emit a strong odour which can be identified by a trained sniffer dog and some pest handlers promote the use of dogs to identify bed bugs.

It is our opinion and experience that the dogs are far from 100% reliable in identifying bed bugs. Published claims about the reliability of dogs have been greatly exaggerated; these claims are based on a clinical trial done by the University of Florida. The experiment was conducted under controlled circumstances and did not reflect real world conditions and variables such as bugs which have crawled into the dark area behind kitchen cupboards, hiding in power sockets or walls and dogs often are seen to mistake blood on sheets for bed bugs.

We do not use our dog because of a number of experiences where we have gone in after a sniffer dog has failed to identify bed bugs and after a thorough inspection identified their existence. We also have experience where the dog

Continued next page.....

identified bugs were present but no bed bugs were found. In other instances, the dogs alerted to carpet beetle larvae.

It should be noted that dogs do have their place and can be an effective tool if the handler works behind the dog conducting its own visual inspection; this is vital in particular after inconclusive visual inspection. We have had reports from consumers advising us that the handler refused to complete a visual inspection or show the occupant any evidence of bed bugs before recommending a toxic chemical treatment. It is therefore important when employing the services of a bed bug sniffer dog and its handler that:

- The handler has been properly trained to identify bed bugs and eggs
- The handler has no financial interest in the outcome of the inspection (preferably the dog handler is not in the pest control business)
- The handler takes time to verify bed bugs exist where dog alerts
- The dog's training is reinforced daily for optimum K-9 performance
- The dogs are certified by a reputable K-9 academy/organisation and not by a pest control company

In our view, the reliability of K-9 detection is questionable and dependent on who trained the dog.

Bed bug domes

Electronic monitoring devices such as Bed Bug Domes or the latest Bed Bug Monitor from Frohwein, have the advantage of finding proof of bed bugs as the bugs are attracted to the device and are captured inside. However the devices tend to work better on an empty property rather than one where people are living as the bugs are more likely to be attracted to the Co2 emitted by the body. So they are not fool proof.

Visual Inspections

Visual inspections are an effective method to detect bed bugs, however in very low-level infestations it can be tedious and time consuming. Multiple inspections may be necessary to ultimately discover live bed bugs, eggs, fecal, or exoskeletons. Anxious people may be impatient for answers. For these people the dogs or mechanical bed bug detection devices may make sense or certainly assist. For others who are less emotional and process the situation more rationally, we say this: Stay on high alert. Sleep on white (or light coloured) bedding to make it easy to see fecal stains. Inspect your bedding each morning when you wake-up. Use a flashlight to examine cracks & crevices in & around the sleeping areas. Bed bugs are often found in crevices in the headboard, bed frame, box spring, seams of the mattress, and other crevices immediately around the bed. Make note of any lesions that appear on you or others in the home that could be bites. Look for exoskeletons of the bugs on the floor beneath beds, couches, and futons. If there's a bed bug problem in your home, evidence will turn up soon. These bugs do not stay hidden for extended periods of time. No one wakes-up to an infestation overnight. Do not let unscrupulous salespeople use fear to coerce you into buying products or services.

Once an active bed bug problem has been positively confirmed, treatment should begin as soon as possible. Do not treat your home for bed bugs without evidence of an active infestation. Do not treat your home with over-the-counter remedies, bug bombs, or cedar oils & sprays as these do not work and only help the bugs become resistant to chemicals. Be discerning with your selection of pest control services. Not everyone is the bed bug expert they claim to be and some pest controllers even refuse to treat for bed bugs because they are so difficult to eradicate that they find themselves constantly returning to back up the first treatment. Be wary of any pest controller who advises that one

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Why Use Chemicals When Alternatives Exist? *continuation....*

application of chemical will resolve your problem because bed bug eggs do not die with chemical and the eggs will hatch 10 days later requiring a second treatment to occur. Be wary of any pest controller using chemical as a treatment who advises you do not need to wash and tumble dry your clothing to back up their treatment. Also be wary of any company that advises they remove your mattress to place it in a container to heat treat it, this will work on the mattress but it requires a follow up treatment of chemical in the property.

We recommend you read up on the methods of how to treat bed bugs and vet a number of pest control companies to get a feeling of what kind of experience they have and the type of solution they employ to rid you of the problem.

Bed Bug Treatments

There are several methods currently employed by pest management companies for the control and elimination of bed bugs. Chemical insecticide treatments are by far the most common methods used by the industry as they are cheap but require repeat treatments. Successful alternative chemical free treatments are available some of which are starting to be recognised by the accommodation sector as being the most successful.

Below is a brief description of the most common methods available, along with the pros and cons of each type of treatment. With the notable exception of true fumigation, no method is 100% effective, 100% of the time and is also reliant on whether the technician or pest control person knows what to do and if they are thorough with the job in hand.

Chemical Insecticide Treatments

The use of chemical insecticides is the most prevalent method of bed bug control worldwide. Depending on where you live in the world, the choice of insecticides varies. In the U.S. and NZ, the majority of insecticides used are from the synthetic pyrethroid chemistry of insecticides. These products, many of which were developed in the late seventies and eighties, work by opening sodium-ion channels in neurons at the insect's nerve axon, which causes the nerves to fire spontaneously, and ultimately leads to spasms and expiration. These products when used properly generally have had good safety records. The University of Kentucky and others have confirmed that these products aren't without problems though. Strains of bed bugs have been found to be resistant to some of these insecticides, causing some experts to call for bringing back some of the previously available, now band chemical treatments. What this means we do not have to explain!

Some of the other available insecticides include mitochondrial poisons such as chlorfenapyr. Chlorfenapyr is a pesticide, and specifically a pro-insecticide (meaning it is metabolized into an active insecticide after entering the host), (http://en.wikipedia.org/wiki/Chlorfenapyr) and natural desiccant dusts such as silica or limestone which dehydrate the insect.

Insecticide treatments are tedious, labor-intensive, and repetitious. The treatment seems inexpensive but then as repeat treatments become needed when the first treatment does not work, the costs can rise substantially. The treatment also requires a lot of preparation by the consumer prior to the application. Success is largely dependent on the strength of the chemical used, which can be toxic to your health and the diligence of the pest control service technician. This work involves heavy lifting, cutting open the base of box spring mattresses and sofas and an acute attention

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Why Use Chemicals When Alternatives Exist? *continuation....*

to detail. Service techs must also be able to effectively communicate with customers, explaining every aspect of the preparation and post-treatment actions required.

Pros
- Readily available.
- Affordable for most.

Cons
- Resistance problems with some insecticides.
- Heavily dependent on the applicator's diligence.
- High treatment failures especially in homes with lots of clutter Insecticides objectionable to some with
- lingering chemical odours and residue and possible toxic effect on customers.

Steam Treatments

Steam is a viable option for some situations. Direct contact with an appropriate steamer will kill bed bugs and eggs. This is tedious work as the bugs and eggs must come in direct contact with the steam but if the outbreak is not too large and if done methodically it can be an effective method of control. Many pest control vendors use this method in tandem with chemical insecticide treatments to kills bugs and eggs they cannot reach. Hospitals and nursing homes, where rooms are institutional (and much less complicated and clutter-free than a residential property for example) may have greater success using this method.

Pros
- Chemical free.
- Anyone can do it if diligent.
- Effective as long as direct contact is made to the bug or egg.

Cons
- Because steam must make direct contact with the bug or egg, there's a high probability that some will be missed.
- Labour intensive and therefore expensive for a no guarantee result.
- Follow up treatment may be necessary and very often chemical are still used to finish the job which negates the reason for using a chemical free solution in the first place.

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Why Use Chemicals When Alternatives Exist? *continuation....*

Vacuuming

Vacuuming is a mechanical method of bed bug elimination. Every bug collected in a vacuum is one less bug biting someone tonight and it can be successful if the infestation has not taken hold. It's paramount that the bags be removed afterwards and discarded from the building completely. Canister-type vacuums should be emptied outside the building and washed with a detergent solution prior to returning to the building. When vacuuming, use the crevice tool at the edges of mattresses and box springs. Be sure to vacuum crevices in the bed frame, seams on couches and cushions, and along baseboards especially near beds and couches.

Pros
- Method readily available to anyone
- Chemical free.
- Instant suppression of the problem.
- A good pre-treatment and follow up treatment!

Cons
- Not generally regarded as a stand-alone solution.
- Labour intensive and laborious.

Fumigation Treatments

True fumigation is a rarity in New Zealand. We are working on new ways and eco friendly fumigation processes. Some people confuse aerosol "bombs" with fumigation, they are not the same. True fumigation is serious work that involves a tremendous amount of human and financial resources. Fumigation is the introduction of gases to confined spaces that permeates all contents to achieve a one-hundred percent kill of all living creatures inside. Fumigation is a gas. Bug bombs are tiny liquid droplets.

Pros
- Generally considered one-hundred percent effective.
- New eco-friendly treatments are tested!

Cons
- Availability in the NZ is rare.
- Expensive.
- Requires specially trained person to perform treatment.
- Can be dangerous if not well planned & executed.
- Has no residual to prevent future infestations.

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Why Use Chemicals When Alternatives Exist? *continuation....*

Thermal Remediation (Heat Treatments)

Thermal remediation involves introducing a high temperature (heat) to an area for a prolonged period of time to reach the thermal "death" point for bed bugs. Generally heat treatment professionals strive for a temperature of 55ºC to 60ºC for a prolonged period of time to kill bed bugs and their eggs. It's not enough to simply raise the temperature; the air must be moved to achieve a uniform saturation of the area. Special technology is needed and it may take up to 24 hours to uniformly saturate the treatment area with the required temperature. It is a very seamless and clean way to achieve 100% kill as the heat reaches inside power points, furniture, walls etc. Non or little movement of furniture, no damage and 100% elimination guarantee can be provided if done by a technician. This is the future of bed bug elimination and is new to New Zealand and operated exclusively by ALPECO's qualified team

Pros

- Kills insects in one treatment with 100% elimination guarantee.
- Chemical free
- Eliminates all life stages including eggs, larvae and nymphs.
- Discreet method, safe, quiet and easy to operate.
- No need to remove electronic devices where bugs can hide.
- Very little preparation required and no need to wash and tumble dry clothing.
- No need to cut open furniture bases as heat permeates all furniture.
- Method is perfect for larger areas or heavily infested locations.
- Very little down-time, the room can be used straight away with no pesticides in sensitive areas, no residue build up, odours or fumes
- No development of resistance.
- Intense heat penetrates into small cracks and crevices.
- Generally effective if performed by highly experienced persons

Cons

- Technology has its price.
- Can be prohibited in some locales.
- Requires trained technicians.
- Risk of premature aging of some building materials.
- Risk of fire sprinkler activation.
- Can be challenging in multi-family housing properties.

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Why Use Chemicals When Alternatives Exist? *continuation....*

Dry Ice rapid freeze treatments - Cryonite®

Cryonite is a system that utilises carbon dioxide to produce a rapidly deployed "snow" (dry ice) delivered through a patented Cryonite gun, freezing unwanted insects on contact. The method is best suited to smaller infestations, where the location of the pests is known or suspected. Treated areas are ready for use immediately after treatment is completed. Treatment is odourless, quiet and chemical-free. This treatment is new to New Zealand and operated exclusively by ALPECO's qualified team.

Pros

- Chemical free, non-toxic and non-allergic.
- The snow penetrates crevices easily.
- Low cost Co2 makes it affordable to some in certain areas.
- Internationally proven and tested technology.
- Patented nozzle discharges at optimal particle size and stream velocity.
- Kills insects immediately on contact.
- 100 % effective with no development of resistance.
- Eliminates all life stages including eggs, larvae and nymphs.
- Hygienic, no odours, fumes, or liquid chemical residues.
- Safe to use on all surfaces including electronic devices
- Method is perfect for private homes, hotels, the food and other industries.
- Limited room down time, the room can be used straight away;

Cons

- Direct contact with snow is required.
- Qualified technician needed.
- Likelihood of direct contact with one-hundred percent of population is not likely and repeat treatments may be required.
- Only suitable for light infestations.

Botanicals (cedar oils, etc.)

There are many botanical oils for sale on the internet for the control of bed bugs. Most of these products make claims of questionable validity. These products work by asphyxiating or suffocating the bugs by covering their spiracles (analogous to nostrils of a human being). One purveyor of these products has built a substantial business by selling these oils with spray and fogging equipment as "packages." Ecologic Entomology knows of no one that has eliminated a bed bug infestation using these products.

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Why Use Chemicals When Alternatives Exist? *continuation....*

Pros
- Naturally-derived and generally regarded as safe.

Cons
- Questionable efficacy and claims by manufacturers.

Other comments

At **ALPECO** we specialise in chemical, toxic free eco alternative solutions to eradicate bed bugs. We are building up a reputation in Auckland with hoteliers as providing the most effective solution to their increasing bed bug problem. 80% of our work is following up work on failed treatments.

We have even had one hotelier advises us they believe their pest controller was spreading the infestation of bed bugs to create repeat business and they wondered why the problem never seemed to reduce!

We have a sniffer dog and yet we believe a dog has limitations and promote visual checks as being the most effective method for finding bed bugs. We recently were called into a hotel where a dog had just inspected and reported there were no bed bugs. We checked the room 30min after the dog and it took us 1 min and 53 sec to find the first bug (video on file).

We do not have call backs as heat elimination comes with a 100% elimination guarantee and freezing is a very effective method for small infestations (testimonials available).

There is a lot to think about the truth and quality of the Bed Bug & Co but we believe you will make the right decision for you.

We hope the above information is helpful!

Yours truly

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OUR MISSION STATEMENT

Pest Management Association of New Zealand primary focus is to the integrity, ethics and professionalism of its membership, providing registration, industry knowledge and training.

- A registration process for industry training standards
- Promotion of the safe application of products and substances
- Providing the opportunity to network and promote industry knowledge to our members
- Ongoing training, support, seminars and conferences to enhance the practical skills and knowledge of our members

Working with and lobbying government departments and agencies for the betterment of our members, the public and the environment.

OUR VISION

Pest Management Association is the recognised voice of the Pest Management Industry in New Zealand. Pest Management Association of New Zealand balances the needs, of its members, the public, Government Authorities and the Environment.

Disclaimer: Please note that the views/opinions expressed in the submitted articles do not necessary reflect the views of the Pest Management Association of New Zealand (PMANZ) council or the membership.

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