Bed Bug Global Summit 2020

A virtual event featuring latest and greatest from the world of bed bugs

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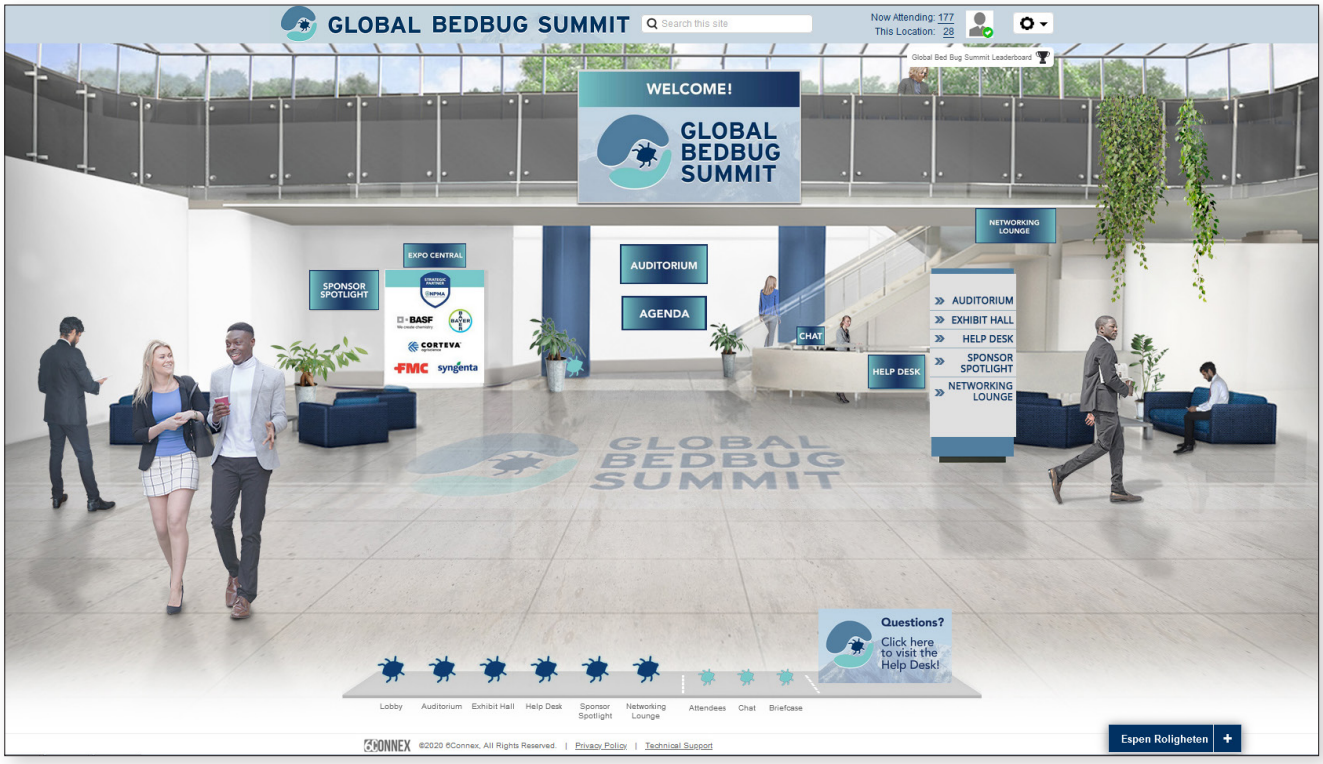
The Global Bed Bug Summit (GBBS) has been a biennial event held in the US since 2010. It was initially called the North American Bed Bug Summit and was established by Bed Bug Central, one of the leading pest management firms involved in bed bug management. In more recent times, the National Pest Management Association (NPMA) has joined forces with Bed Bug Central, and as a consequence the meeting changed its name, although there is still a very strong emphasis on what happens in the US. I have attended most of these over the years and been honoured to speak on three occasions at the event.

Unfortunately like the majority of pest management conferences in 2020, the GBBS had to be held virtually for the safety of all and the event was run over two days, 2-3 December, with some 280 participants attending. There is no question that the presentations by the experts in the field is the greatest attraction to the meeting, however there were also a number of virtual exhibition booths, and other attractions including networking sessions and the opportunity to speak with the experts.

The presentations were many and varied, and covered technical aspects in bed bug management, the latest research in clinical aspects and insecticide resistance, there were presentations on bed bug monitoring and use of canines for detection, control in specific situations such as offices, legal aspects and policy, challenges caused by the COVID-19 pandemic, proactive control, biopesticides, and more. Thus there was an extremely comprehensive range of talks to suit all stakeholders involved in bed bug management.

Due to the large time zone difference, I did not listen to the talks live (and there were some disadvantages in this), but fortunately all presentations were made available for later viewing. Thus I will review the talks more or less in the order I watched them.

The first presentation I watched was by Dr Zachary DeVries of the University of Kentucky, whose title was "Understanding the full potential of bed bugs as an important public health pest". It is well known that cockroach allergens contains substances such as histamine that can trigger respiratory issues including asthma, and Zach raised the question if bed bug allergens (which also contain histamines) can also lead to respiratory distress. Importantly, it is known that cockroach control can lead to a reduction in allergens. Zach sampled for histamines bother before and after bed bug management. Even 12 weeks after the bed bugs were eradicated, histamine levels still remained very high with no decline. Thus histamines appears very stable in the environment. Furthermore, as bed bugs are so linked with our sleeping habits, there is a great potential for humans to be exposed to the

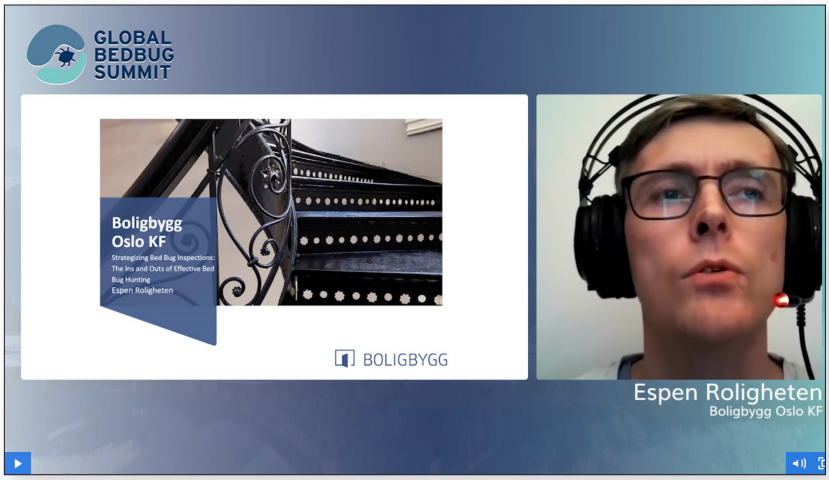


The virtual atrium of the Bed Bug Global Summit 2020.

allergens. Thus it appears that that histamine accumulates in household dust from bed bugs and if histamine does trigger respiratory issues, then bed bugs could be a serious risk to our health. It may be that deep cleaning will be needed in order to remove the histamines. However to date, there no link between bed bug histamines and adverse health effects, and further research is required.

The next talk was by someone I was unfamiliar with; Sarah Latyn, from Bed Bug Central, Lawrenceville, NJ, who provided an overview on bed bugs. Sarah admitted at the start of her presentation that she had only worked with Bed Bug Central for two years and her talk reflected this lack of experience. When she mentioned *Cimex tropicalis* towards the start of the talk instead of the correct species name, *Cimex hemipterus*, I knew we were in trouble! She then suggested that the widespread application of DDT may have led to the resistance we see today, but completely ignored the fact that natural pyrethrin had been used for decades and this chemical confers cross resistance to the organochlorides. Next she stated that "body odor" attracted bed bugs…umm not quite…Overall, it was a poorly structured talk, with little discussion on the factors behind the resurgence. Unfortunately worse was to come. Following each presentations are a series of questions to allow pest managers in the US to earn Continuing Education Units (CEUs) for recertification. The problem was that several of Sarah Latyn's questions had the wrong answer, which may have compromised some attendees who were aiming for recertification. In my opinion it was not appropriate to have someone with such little experience speak at a conference when conference fees were so high; this is simply unfair to paying registrants.

Fortunately the program went from not so good to brilliant and next up was the living legend, Prof. Dini Miller from Virginia Tech, USA, who examined fumigation for bed bugs. Dini initially provided an overview of the history of fumigation, which included sulfur dioxide and hydrogen cyanide, both being widely used prior to WWII. Unfortunately, sulfur dioxide is a poor ovicide, while hydrogen cyanide is very toxic and resulted in the deaths of a number of applicators. DDT and the organochlorides changed the way bed bug control was undertaken and introduced a safer and highly effective means of bed bug



Espen Rolighten from Norway describing his 'Building Wide' strategy to combat bed bugs.

management. That is, until resistance surfaced, particularly in the modern strains associated with the current resurgence. Now it is very challenging to control bed bugs especially when they infest people's belongings. Thus Dini and her team looked at using the fumigant, sulfuryl fluoride, to control bed bugs in challenging situations. Basically a number of vehicles and trailers where obtained, which were filled with belongings, and bed bugs held in containers placed inside. Everything was then covered in tents for the fumigation process and the gaseous insecticide applied. Fumigation was conducted for six hours, the tents were aired, and the bed bugs removed and inspected for mortality. None of the bed bugs, nor their eggs survived, which demonstrated the effectiveness of fumigation in difficult to treat situations. Expect to see a publication from this work in the near future.

A good colleague of mine, Espen Rolighten from Norway, gave a presentation on strategizing bed bug inspections. He is responsible for pest control in some 11,000 apartments in the capital of Norway, Oslo. Since 2013, there has been a dramatic increase in pest control costs due to bed bugs. Thus Espen implemented a process of Building Wide Inspections (BWI), whereby teams of two will inspect up to 50 apartments in a day. They will spend five minutes per apartment looking for bed bugs, and if none are found, will schedule a reinspection for some 10-12 weeks later. This protocol is used when more than three rooms are infested in the same apartment. Effect of implementing the BWI process is that the number of infested rooms in buildings have declined and control costs have decreased; a terrific outcome for all!

Similarly, Dr Karen Vail from the University of Tennessee in Knoxville, undertook Building Wide Inspections (BWI) in a number of properties. By employing two pitfall style monitors, and undertaking a 'quick' inspections that involve a three minute check of the exterior of the mattresses and furniture, they were able to detect bed bug infestations that were missed on 80% of occasions. Incorporating this method into BWIs in three buildings, up to 85% of the infestations were identified that were previously unknown.

Both Espen Rolighten and Karen Vail face a similar situation; a lack of money to undertake the job properly. Thus they both had to compromise with the available resources and ended up with a remarkably similar protocol.

Prof. Chow-Yang Lee, University of California, provided a global perspective of insecticide resistance in bed bugs. He noted that around $USD1 billion is spent on bed bug control in the US alone. Unfortunately resistance can evolve very rapidly, as quickly as 7-10 generations in the field and 15 generations in the laboratory. Due to insecticide resistance issues, the challenge is now managing bed bug reservoirs, namely low income housing, especially as the budget for treatment maybe only $USD5 per resident. What is needed is a low toxic, cost effective and time efficient management strategy, but sadly none are on the horizon.

A colleague of Prof. Lee from the University of California, Dr Dong-Hwan Choe, presented on a new Bayer bed bug detection product. This device is called a 'lateral flow test' that detected bb specific proteins and is based on urine home pregnancy tests. Dong-Hwan collected samples from a bed bug infestation and sent them for

Bayer for testing. The device was accurate 87.8% of the time when bed bugs were present and 97.5% accurate with no bed bugs. Personally, I cannot see the point of such a system when bed bugs are mostly easily detected. Perhaps it could be used for validation that no bed bugs are present in the hospitality sector. Clearly we require more information on this utility of this device.

In the US, litigation is an ongoing concern and typically the GBBS meeting has a number of presentations focusing on legal aspects. One of the better talks was by Gail Getty of Getty Entomological Research and Consulting, CA. Gail spoke on bed bug litigation and how to keep yourself out of hot water. The essence of staying 'legal-safe' in a litigious country such as the US is through documentation, and cases can take 2-7 years before they appear in court. It is important to record everything including work orders, public health records, pest company service records, invoices, and even tenant files. Work orders and bed bug complaints should include the unit number, date/time received and date/time pest control scheduled, if it is ok to enter home, description of work requested, the job status (temporary repair, parts on order), etc. Your service record may include the order number and invoice, location and full address, full date including scheduled date, and list the targeted pest. Include the results of each unit separately. If no evidence is found this should be documented individually. It is important to write out the full date rather than just numbers. The service record should include time in and out, as the court often asks if this time is long enough to complete the job. It is important to describe any challenges to the inspection and the job (e.g. clutter, rushed by tenant). The technician's name and licence number should always be recorded. The service record should also include the service description; details of the initial inspection and follow up inspections, along with if the surrounding units were inspected. Record when the request was made to undertake the inspection and to whom the request was made. Always record the conditions and observations, such as if tenants have done what was requested. Record level of clutter, sanitation, and other conditions impeding prevention or treatment. The service record should define the 'infestation', such as where you found the bed bugs, as well as the level of the infestation, and even the number of bugs seen. Include a comment section, such as discussion points with the tenant/management, the treated areas in units, if the surrounding areas were inspected, if clutter needs to be removed, management/tenant compliance, and any other findings. Even record why a unit could not be inspected. With the treatment, list the product name or product number, and record how much was applied. All of this advice from Gail is really relevant to any job you do, even in countries that have little litigation.

Certificate received upon the successful completion of the 15 question test attached to the presentation.

A session was held where three pest control companies discussed the impact of the COVID-19 pandemic on their bed bug work. Most felt that bed bug work has declined in recent years, even before the start

of the pandemic, yet during the pandemic bed bug work decreased by around 30%. Generally people were more reluctant to have bed bug work done, especially during lockdown times as they had nowhere to go while the treatment was occurring. Some housing groups cancelled all canine inspections, although the reasons behind this were not stated.

As always, Dr Rick Cooper one of the founders of Bed Bug Central always provides a terrific presentation. In his talk he focused on how to effectively use low-prep or no-prep protocols for managing bed bugs. Many pest managers advise clients to undertake a lot of preparatory work prior to a bed bug treatment. This may include stripping beds, removing items from under the bed, laundering clothes, from dressers, closets, and removing items from walls. However, this is a lot of work and unreasonable if the client is elderly or disabled. Plus the client may not know how to handle infested materials properly and if they are asked to do a lot of work, they simply may not do it. The reality is, is that prep work by the client can disturb the bed bug infestation, leading to its spreading and making control that much more difficult. The alternative is limited or no-prep prior to the treatment. Rick would prefer that the client does not disrupt anything so that the infestation can be more properly assessed in the initial inspection. Yet some level of cooperation will be required, which has be tailored made to the situation and the abilities of the client. The aim of the initial treatment is to eliminate as many bed bugs as possible as most will be on or close to the bed. Then obstacles are created for blood seeking bugs, including the use of encasements, interceptors, and targeted chemical treatment. The goals of the follow up visits include; determining if activity is still present, to identify and address the reasons for continued activity, and to make additional requests for cooperation that could be hampering the elimination of the infestation. Thus while cooperation is essential from the client, we cannot expect them to do too much, otherwise treatment failure will occur.

These are just some of the presentations that were available at the meeting. All up, I would have to say that the program was somewhat 'safe'. Personally, I would have liked to have heard from authors behind some of the more controversial methods of control such as systemic pharmaceuticals (i.e. drugs taken by people that will kill bed bugs when they feed) and bed bug baits. Also, it would have been nice if the Global meeting was more Global and to hear of some of the interesting work going on with bed bugs in Africa and Europe. However, I will admit much of this work has little relevance towards the American pest control industry, the group targeted by thus conference.

As to the conference platform itself, there were a couple of niggling issues. Embedded videos did not play on the recorded presentations. It was not possible to scroll through a presentation; you could only pause or play it once started. There was no indication of where in the talk you are and how much time was left. Most annoying was that if you closed a talk before the end, then you had to sit through the whole thing again to access the password at the end in order to access the exam for the Continuing Education Units for recertification. As talks were around an hour each (and arguably a bit long for a virtual conference), this was a very frustrating! Another curious aspect was the final score for the exam; I was awarded 100.05/100.05 for having all 15 questions correct; not sure about the "0.05". The talks were only available until 31/Dec; perhaps more time seems not unreasonable, plus the registration cost was USD$300, which seems a bit high when the industry is struggling during the COVID-19 pandemic (this costs also highlights the incredible value of the 2020 FAOPMA-Pest Summit Virtual Conference at only USD$50!).

Ok, as per usual I am being hypercritical in the last paragraph, however constructive critique leads to improvement and I will admit to looking forward to attending the Global Bed Bug Summit in the future…when it is safe to do so. ■

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Social Distancing tips from Australia