

pest

The independent UK pest management magazine

Bed Bug
Special 2018

Bed bug challenge continues!



Issue 58
August & September 2018



Manchester shows it's
a great city to Bee in



5

Has he bitten off more
than he can chew?



10

Hotels count the bed
bug reputation cost



29

Traditional methods
still in demand



36



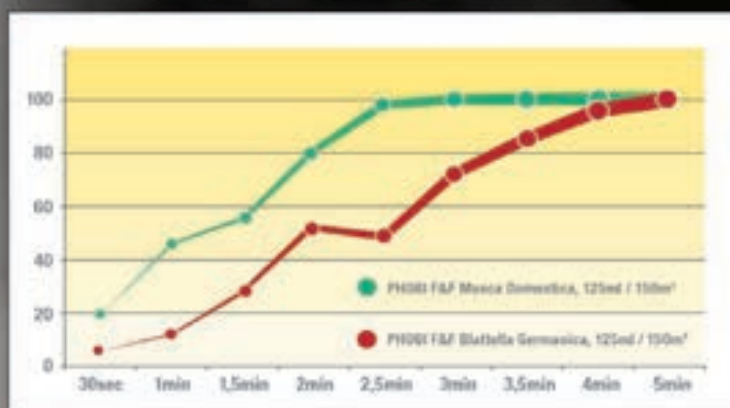
NEW! INTRODUCING THE **PHOBI F&F** **ONE SHOT**

AUTOMATIC FOGGING DEVICE

Proven 100% control within 3 minutes

The Phobi F&F One Shot fogging device is formulated with the proven combination of actives used in the Phobi range (Imiprothrin & Cyphenothrin). Faster and more effective than any other comparable product on the market. We are proud to release some of the test data that proves 100% efficacy against flies within 3 minutes and 100% efficacy against German cockroaches in 5 minutes. The increased strength and speed of control and large application area of 375m² makes it an essential product in any pest controller's armoury. For use in all indoor situations against flying and crawling insects - simply press and twist the nozzle to release and all pests will be controlled in minutes.

Data showing the percentage of insects dead after the aerosol was activated



	PHOBI F&F Musca Domestica, 125ml / 150m ²	PHOBI F&F Blattella Germanica 125ml / 150m ²
30sec	18.3%	4.5%
1min	45.5%	11.1%
1.5min	55%	26.6%
2 min	80%	51.1%
2.5 min	98.3%	47.8%
3min	100%	71.1%
3.5min	100%	84.5%
4min	100%	95.6%
5min	100%	100%

LodiUK

For a scientifically proven solution to infestations, call Lodi UK on:

01384 404242 sales@lodi-uk.com www.lodi-uk.com

Use biocides safely, always read the label and product information before use. Phobi F&F contains 0.11% Imiprothrin and 0.33% Cyphenothrin

Editorial contacts:

Editor & publisher: **Frances McKim**

Associate editor & publisher: **Helen Riby**



Helen Riby

Frances McKim

Technical advisory board

Dave Archer	Clive Boase
Dr Alan Buckle	John Charlton
Brian Duffin	Rob Fryatt
Adrian Meyer	Dr Richard Naylor
Dave Oldbury	Dr John Simmons
Richard Strand	Grahame Turner

Aims

As the industry's only independent magazine, **Pest** aims to deliver a mix of unbiased news, impartial advice and topical technical features. We are committed to being as inclusive as possible covering every sector of the pest management industry.

Send us your news

Send your news or views to:

Email: editor@pestmagazine.co.uk

Tel: 01509 233219

Or write to us at:

Pest, Foxhill, Stanford on Soar,
Loughborough, Leicestershire LE12 5PZ
We'd love to hear from you.

Advertisers

Please contact the editor as above or visit our website at www.pestmagazine.co.uk

The legal stuff

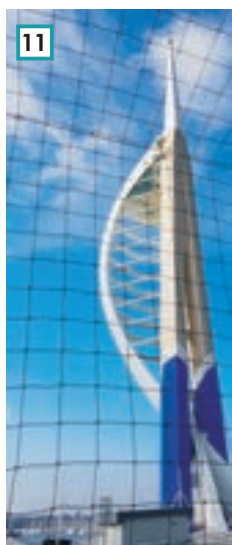
Whilst **Pest** is produced with great care, the publishers cannot accept any liability for inaccuracies or errors herein. Nor can **Pest** accept any responsibility for claims made in advertisements nor for any results or misadventures experienced from using the products advertised.

© **Pest** magazine 2018. All published material remains the copyright of the publisher. No part of this magazine may be reproduced, stored in a retrieval system, or transmitted, in any form without prior permission of the copyright holder.

Pest is published by Foxhill Publishing Limited
Registered in England No: 6737319

Printed by PPS Print, www.pps-print.com

Use pesticides & biocides safely.
Always read the label and product information before use.



Contents

Industry news	4
People in the news	6
Bumper summer... and autumn... for pests	9
Seagulls in the news	10
Do we need another CPD scheme?	13
Do bugs make us happy or disgusted?	17
Eyes fixed on China	18
Bed bug special	21
Bed bug catch-up	22
Can IPM help prevent insecticide resistance?	25
Bed bugs bad for hotel reputations	29
Be pro-active to keep bed bugs undercover	32
A roaring success for Abate	35
Run rabbit run!	36
What makes a successful servicing business?	39
Take the <i>Pest Test</i>	39
Products – what's new?	40
New resources	42
Diary dates	43

Summer over.... here comes autumn

With autumn rapidly approaching, we hope all our readers have had a good break over the summer and are now settling down to the autumn rush and round of exhibitions. **Pest** will be out and about reporting from the key events – notably PestWorld, PestTech and Parasitec – so we hope to see you there!

One thing we will all remember about this summer is the amazing spell of heat and lack of rain – this has been great for pest controllers, especially those who look towards a bumper wasp season to add the 'jam to the bread'. But, as we report in this edition, it's not just been wasps, hornets have also been in much greater evidence. And the results caused by the weather are likely to continue, with high numbers of rodents predicted this autumn.

As has become a trend for our summer issue, this edition is, once again, a bed bug special. We have included three technical feature articles and provide a run-down on news and product developments. With both PestWorld and the Global Bedbug Summit this autumn, it is highly likely more new developments will be revealed.

Just as we were going to press, the announcement of the Pelsis and Curtis Gilmour merger was released – so more, and not likely to be the last, consolidation within the industry.

Frances McKim

Interpreting the news at www.pestmagazine.co.uk

Pelsis and Curtis Gilmour merge

On 24 August the merger of two well known names in the pest control business was announced. Pelsis Holdings (UK) Ltd and Curtis Gilmour Inc have agreed to bring together the brand portfolios and operations of the two companies with immediate effect. The activities of the two companies are highly complementary to one another and together give access to a broader range of customers and geographies, for the consolidated product range.

Pelsis has leading brands in both the professional and consumer pest control categories such as Insect-O-Cutor, Network Bird control and Edialux. Curtis Gilmour's brands include the B&G Equipment line of professional sprayers, Curtis Dyna-Fog premium fogging products, as well as the Agrisense and Silvandersson trapping and monitoring brands.

The consolidated portfolio will be led by Pelsis Group CEO Peter Mangion and will continue to operate from its current facilities in the USA and in Europe.

read more
on the Web
[www](http://www.pestmagazine.co.uk)

Rentokil results and new 'green' partnership

On the same day (31 July) as Rentokil Initial announced its half year financial results, the company also revealed a new partnership with Cool Earth, the climate change charity.

The financial results showed ongoing operating profit growth of 13.1% with revenue in the pest control sector up 13.0%. A telling sign for the future is that CEO, Andy Ransom, commented that the mergers and acquisitions pipeline remains on track to spend £200m to £250m for the year, funded by cash held on the balance sheet.

Somewhat amusingly, Rentokil Initial has chosen to fund the programme with Cool Earth from unclaimed dividends, putting to good use the monies that have stayed on its balance sheet, unclaimed, for over 12 years. The money will support Cool Earth's Wabumari partnership in Papua New Guinea – protecting around 1,000 acres of rainforest and so preventing the release of at least 228,000 tonnes of CO₂, equivalent to the company's entire carbon footprint. By supporting the people of Wabumari, Rentokil Initial will transform the prospects of the community and halt deforestation. Cool Earth's Wabumari partnership is part of The Queen's Commonwealth Canopy Initiative, a network of forest conservation projects which celebrate Her Majesty's commitment to the Commonwealth and promote the value of forests.





GOING UNDERGROUND

Upgrade any IGEBA TF 35 with the new bent fog tube attachment



• public health • pest control • hygiene • animal health

THERMAL FOG GENERATORS

TF 34
TF 35
EVO 35
TF 65/20-E
TF 95 HD
TF 160 HD
TF F 160/150

ULV AEROSOL GENERATORS

U 5 M
U 15 HD-M
U 40 HD-M
NEBULO/NEBUROTOR
UNIPRO 2
UNIPRO 5
U 15 E
U 40 HD-E

COMPRESSED-AIR FOGGER

CF 1

IGEBA 

IGEBA Geraetebau GmbH
87480 Weitnau-Germany
info@igeba.de
www.igeba.de

Getting out and about

John Hope, the National Pest Technicians' Association's (NPTA) very first technical manager has been getting to grips with his new role. This has included visiting NPTA members up and down the country, listening to their points of view and discovering their objectives for the Association.

Member's thoughts on training courses has been one key topic, along with the creation of bespoke materials the Association could produce which would make member's activities easier. Good luck John.



John Hope (left) with NPTA chief executive, John Davison, right, drops in to hear the views of Richard Stables (centre) of Nottinghamshire-based Stables Pest Control

Chris faces the cameras

Technical manager, Chris Davis of Croydon-based Cleankill recently found himself in front of the cameras. His company had been called in to treat a very large colony of ants in Eastbourne. It didn't take the Cleankill staff long to realise there was something different about the behaviour of the ants. They turned out to be a colony of the imported ant, *Lasius Neglectus*, first recorded in Gloucestershire in 2009.



Giant bees in Manchester

A giant colony of super-sized bee sculptures made its way to Manchester this summer for one of the biggest public art exhibitions the city has ever seen.

There are over one hundred giant worker bee sculptures, each decorated with its own unique design make-up, an un-bee-lievable range of styles, techniques and themes, created by professional, emerging and community artists.

Organised by global public art producer Wild in Art in partnership with Manchester City Council, the Bee in the City trail will live in locations across the city and beyond for nine weeks from 23 July to 23 September 2018.



Get more news at
www.pestmagazine.co.uk
where you see
this symbol

read more
on the web
WWW

Rat-knapping

Readers may remember bed bug detector dog, Hector, who graced the front cover of **Pest 56**: April & May 2018 proudly holding his rat toy. Unfortunately all did not end happily.



Hector and his handler, Chloe Wheeler of Merlin Environmental, live near Aylesbury, an area now very well populated by red kites. One day the pair were in the garden, only to see a red kite swoop down and then fly off with Hector's toy rat, obviously thinking it would make a good snack!

Shrinking pack sizes

Regulatory changes mean that large 20kg packs of loose grain, pellets or granular rodenticide baits are being withdrawn from the market.

Ultimately all such rodenticides currently available in 20kg sacks will go, but the timing of the withdrawals will vary depending on when the product authorisations were renewed.

The new pack limits for professionals – maximum size 10kg (for loose grains and pellets) – are being introduced to comply with the STOP principle. STOP stands for Substitution, Technical measures, Organizational and Personal protective equipment (PPE). It means that, if possible, you must avoid exposure using engineering means, rather than relying on PPE.

The good news is that there is no limit to how many 10kg packs a user may purchase.

read more
on the web
WWW

A new name in the franchise market

Part of the Busters Group, Birmingham-based Pestbusters (Midlands) Ltd has decided to expand its activities by launching into the franchise market under the name of Pestbusters.

The company, started by Dave Nash in 2001, has always been based on a caring, family-run business model offering customers great value for money service. The aim of this exercise is to create a mirror image service that can cope with national coverage. All franchisees will benefit from three weeks practical and written pest control training and two weeks sales and marketing training.



Pestbusters managing director Darren Brough (left) with owner/chairman Dave Nash

Thermokil reorganisation

The specialist heat treatment company, originally set-up by Dave Hammond in 2001, has had a bit of a re-organisation.

Dave is taking a less active role in UK activities but remains at the helm of parent company Thermokil Ltd, which also encompasses interests in Thermokil International Ltd, Thermokil Iberia sl, and Thermokil Africa pty Ltd, working out of Cape Town.

In future he will manage the overseas businesses and consultancy. At the same time he will remain technical director of Thermokil Insect Control Services (TICS) in the UK.

Ryan Overton is managing director of TICS, based in Mansfield, Nottinghamshire. Ryan will continue to oversee the company's rapid expansion in heat treatment work in the residential and commercial sectors.



Dave Hammond



Ryan Overton

MOSTYN PTP 15 ULV

Tetramethrin (19.0 g/l), 1R-Trans-Phenothrin (39.4 g/l), PBO (68.8 g/l)



Works against flying and crawling insect pests!!



Rapid knockdown



Excellent coverage



Wide range of applications



Broad-spectrum insect control

Use biocides safely. Always read the label before use.



New Product

www.hockley.co.uk **hi**



No flies on David

In early August David Haskins took up a new business development role with Bower Products. David is already familiar with the Bower range of electronic fly killing products and has worked closely with the company, in his most recent role at Barretine.

David has been involved in the pest control industry for 15 years. First with Dorset-based Huck Nets before switching to Barretine in 2007 where he became sales director. Recently married, he is also a well-known figure on the music stage! Drumming since he was 14, he both plays in rock bands and performs as a solo artist throughout the UK.

New technical head at PelGar

PelGar International has appointed Sandy MacKay as the new head of its technical department following the retirement of company co-founder and director Dr Jonathan Wade.



A toxicologist, Sandy brings almost 30 years experience in research and product development to the business. He joins PelGar from Wickham Laboratories.

Sandy will be responsible for PelGar's insecticide formulation development laboratory at its Telford site in Shropshire and the Church Farm animal behaviour research and training facility in Hampshire.

Jonathan Wade had a long and distinguished career in public health and pest control including head of pest control for the Dubai municipality and then technical manager with Zeneca Public Health, culminating in the partnership with Dr Gareth Capel-Williams in 1995 and the launch of PelGar International.

New co-ordinator for PROMPT

In June, Chrissie Webster took on the role of PROMPT coordinator. She will be responsible for the administration of the PROMPT register including processing new memberships and responding to any queries from PROMPT members or those wanting to join the PROMPT register. Chrissie will also be the main contact to help members gain their CPD points, as well as being the voice at the other end of the phone for the newly launched PROMPT CPD hotline.



She has a degree in sports (physio) therapy from Birmingham University and originally joined BASIS in October 2016 looking after exams, training and CPD. She has recently completed the Foundation Certificate in Pest Control and looks forward to meeting members at PestTech.

Russell IPM
INTEGRATED PEST MANAGEMENT

Dismate^{PE}

Management by confusion!

The mating disruption system
with years of practical experience

Russell IPM Ltd.
Unit 45, First Avenue
Deeside Industrial Park, Flintshire, CH5 2NU
Phone: +44 (0) 1244 281 333, Fax: +44 (0) 1244 281 878
Email: info@russellipm.com
www.russellipm.com



Ultrabait VR

Manufacturing Quality



Quicklock Ultra

Steel Bait Stations



Steel Microbait

For over 20 Years

Bumper summer... and autumn... for pests

The summer of 2018 will be going down as a 'good wasp year' for professional pest controllers. Reports of unprecedented numbers of call-outs to nests have come from throughout the country. For example, Jon Blake from Abate Pest Management in Norfolk said: "Abate has gone crazy with requests. It will certainly be a record in the 19 years I have been in business."

But it's not just wasps. It's been an extraordinary year for call-outs to hornets too.

All this has put a strain on the producers of the relevant products. Supplies of Ficam D are like gold dust – in fact the product was mentioned by name in the national press and on *BBC Radio 4*. Sorry – replacement supplies are not due in until late September, says Bayer.

Karol Pazik from WaspBane reports that sales of the product have increased 300% this year, not only due to the wasp numbers themselves but also following their work with the Chartered Institute of Environmental Health (CIEH) and the resulting adoption of the theory of Integrated Wasp Management (IWM) by numerous clients, particularly restaurants. Likewise GPS Sprayers, who manufacture the PA2 powder applicator, have three times had to replace their stock.

Bed bugs too have hit the headlines, hardly surprising really as the hot weather has meant a shorter reproductive cycle for them. David Cain of Bed Bugs Limited found himself in demand for radio interviews, not only on the national stations but also on over 20 regional stations up and down the country.

And with autumn approaching, the omens are for bumper rodent numbers too. "The unusually hot, dry summer has encouraged rodents to breed over an extended period and enabled a high proportion of their offspring to survive, so numbers are likely to be well above average this autumn," forecasts Roger Simpson of Lodi UK.

A view echoed by Kai Sievert, technical manager for Syngenta: "Whilst the early natural bounty has increased rodent numbers now, it will also mean an early migration into buildings when the food sources dry up. Attracting rodents to take bait in situations where there are alternative food sources is always a significant challenge for operators, particularly with mice."

Educating your customers

A wasps' nest in an unusual situation has provided Gary Leek of PestForce East Yorks with an ideal visual aid when talking to customers!

Gary was called out to a property where the lady owner was being stung by wasps in her greenhouse, but she couldn't work out where they were coming from. Gary's first thought was that they were simply foraging wasps. However, on arrival there were a number of wasps active in the greenhouse and after watching them for a short while it was evident they were going to the back of one of the stagings (shelves) in the greenhouse.

"After removing a number of items from under the staging, I was surprised to see the wasps entering an old box of organic slug pellets through a small gap on the top. Concealed within the box I was amazed to find an active wasps' nest.

"We now use this to show our customers the anatomy of a wasp nest which makes it a bit more interesting for them when we deal with wasps' nests at their properties," concluded a satisfied Gary.



The wasps chose a 'safe pesticide-free' old organic slug pellet packet!



Wasp watch

As *Pest* went to press another example of people's science was underway, led by Professor Adam Hart, from the University of Gloucester, the Big Wasp Survey.

Between 25 August and 8 September the public was asked to put out a simple wasp trap for seven days. Whatever was caught was then sent to the researchers.

This is the Big Wasp Survey's second year. It aims to gather important scientific data to help to quantify wasp species' abundance, diversity and distribution.

We expect they may find it has been a bumper wasp year, this year!

A nest within a nest

In the *Pest* office we have had numerous wasps' nest pictures sent in. Although maybe not the best photographically, this one from Colin Lyon, pest control officer for West Lancashire Borough Council caught our attention.

As Colin explained: "I came across this on a local wasp nest removal job. As I started to break up the old nest I noticed the new nest inside. In over ten years of treating and removing wasps' nests I have never seen this before. It also goes against all the textbook information about wasps reusing an old nest, apart from maybe recycling materials. I have seen nests adjacent to each other, and even attached, but never a new nest within an old one."



The new nest surrounded by the old

More than a mouthful

Isle of Man resident, Belinda Leach, was stunned when she looked out of her kitchen window whilst preparing the family supper. A herring gull landed carrying a freshly killed, fully grown rat, which it then promptly tried to devour!

The first two attempts to swallow the rat were unsuccessful as it simply wouldn't fit down its throat. An approach from either end was attempted. After these two failures, the gull 'tenderised' the rodent by crunching its spine with its beak to make it a more 'flexible' meal.

As Belinda, who keeps poultry on a small scale, explains: "After about five minutes of battling the whole rat down, the gull simply stood there for a couple more, then flew off and landed on the chimney pot. The gull's neck was distended and it had that little bit of tail sticking out of its beak. It didn't phase the bird at all. It was quite confident."

This particular herring gull was a native of the Isle of Man as it had been ringed at the



1. Going...



3. ...almost there...



2. ...going...



4. ...and it's gone!

nearby gravel pits at Point of Ayre as a chick in 2013. Residents on the Isle never refer to

rats as rats – they are known as either longtails, ringies or queer fellas.

Contraception proposed

Having read about a proposed trial in the Belgian resort of Blankenberge, residents from seaside towns up and down the UK have been proposing the same bird contraception programme be introduced into the UK to control those vicious feathered fiends.

Often used in Europe to control pigeons, and seen at PestEx 2017 (See **Pest 50**: April & May 2017), the product in question is likely to be nicarbazin, which controls fertility and is administered via pre-treated feed. Aberdeen North MP Kirsty Blackman, was one of the many proposing this treatment. What she neglected to realise is nicarbazin, or similar, falls under the veterinary medicines regulations and is not yet registered for use in the UK.

Commenting on the situation in Aberdeen, and readers are sure to agree this is the position nationwide, Stuart Presly of Oldmeldrum-based Presly Pest Control said: "We have done a lot of egg and nest removal for Aberdeenshire Council over the years, in my opinion stopping the birds breeding is the only long term option, not only will it reduce the population but it will also alleviate the aggressive behaviour from the adult birds as the chick are fledging.

"We have carried out an egg and nest removal programme in Peterhead town centre for the last three years and over this period we have seen a drop of 42% in eggs laid."



Great postcard

Well done Conwy Council. This amusing postcard sums it all up so well!



Drunk and disorderly!

The resident gulls in Taunton, Somerset have been 'partying' on the many half-finished glasses of beer and cider left around the town. During the course of a fortnight at the beginning of July, the local RSPCA treated no fewer than 30 gulls that had passed out, 'reeking of alcohol', after lapping up the left-overs.

One of these tanked-up gulls was spotted stumbling about this way and that on a rooftop and concerned onlookers called the emergency services. Unfortunately, the gull then had the bad manners to throw up over the poor firefighter who had come to its rescue.

Rising to the challenge

We Came, We Saw, We Conquered is the tag line for Adam Leonard's company, Advance Pest Control Bristol and this was certainly the case for a bird netting contract he was awarded for the prestigious Gunwharf Quays in Portsmouth.

The brief was to prevent the entry of gulls and pigeons to the roof plant areas. This involved the proofing of four massive roof trench areas measuring over 70 metres by 20 metres, with roof plant machinery jutting proudly skyward in each trench. It was, by far, the largest bird proofing challenge undertaken by Adam and came on the back of another contract already completed for the same building management firm, Lancer Scott in Bristol.

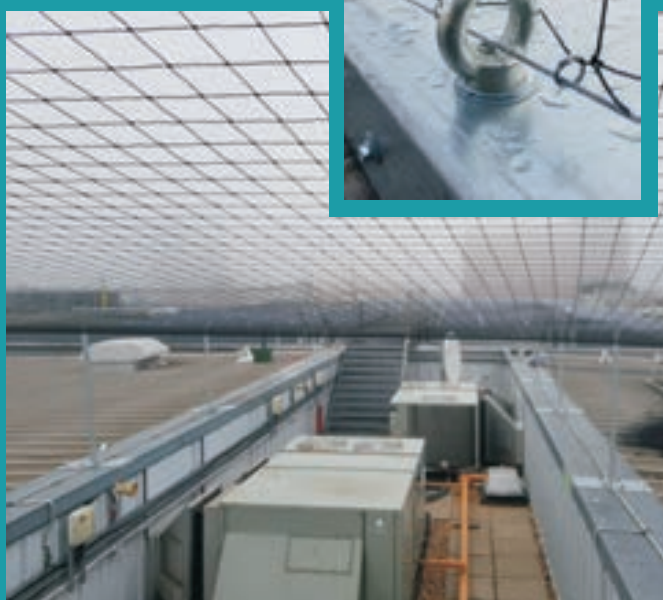
On such big jobs Adam teams up with Scott Mayes of Wiltshire Pest Services and the two of them worked on the project over three consecutive weeks earlier in the year. As is the way in the UK, Mother Nature laid on the full range of weather conditions from brilliant blazing sunshine to torrential rain and even one week a snow blizzard!

The work involved securing wires around each individual piece of plant machinery, which took the majority of the time whilst the fitting of zips around the access ladders was a difficult and arduous task. Bird netting came from Pelsis with spikes from Barrettine.

All went well and a thank you letter has recently been received from the client reporting complete success. A job well done.



All wrapped-up. Adam Leonard, left, with Scott Mayes



The scale of the project is clear. No wonder it took Adam and Scott three weeks to complete

PROFESSIONAL
PEST MANAGEMENT

HIGHLY PALATABLE RESISTANCE BREAKER.

Highly attractive
paste-like formulation
for professional use in
homes and businesses,
delivering freedom
from the nuisance of
mice and rats.

- ▶ Single feed bait against rats and mice
- ▶ Control of resistant rodents
- ▶ Maximum value
- ▶ Quick and easy to use

LEARN MORE about Talon Soft at
www.syngentappm.com

FOR LIFE UNINTERRUPTED™

 **Talon Soft**
Rodenticide

syngenta.

USE BIOCIDES SAFELY. ALWAYS READ THE LABEL AND
PRODUCT INFORMATION BEFORE USE. Talon contains 0.005%
w/w Brodifacoum. Talon, For Life Uninterrupted™, the Alliance
frame, the Purpose Icon and the Syngenta logo are trademarks
of a Syngenta Group Company. ©2017 Syngenta, Syngenta Crop
Protection AG, Basel, Switzerland

Email: ppm.eame@syngenta.com Web: www.syngentappm.com

Do we need another CPD scheme?

Our criticism in the August 2018 **Pest**⁺ e-news of the British Pest Control Association's (BPCA) decision to launch its own version of BASIS PROMPT certainly hit a nerve. We've set the cat amongst the pigeons but we've had more positive than negative reactions from readers, although BPCA tell us they received a lot of complaints about our article. What's the fuss all about?

To recap, this all began back in June when, at its AGM, BPCA announced that it would be introducing its own 'professional recognition scheme incorporating Continuing Professional Development (CPD) as a new member benefit from 2019 onwards.'

As we reported in our online article, in the **Pest** office we were speechless. We couldn't understand why BPCA had decided to undermine the PROMPT system it had worked so hard to establish. Since then we've thought long and hard about the idea and, to be honest, we are still struggling. What is it that is so wrong with BASIS PROMPT that the baby is now about to be tipped out with the bath water.

Whilst we'd be among the first to agree that PROMPT is not perfect, on the whole, it is effective. There are gripes about missing points and, more recently from some, about it being too easy to get the points – not that many years ago there were mutterings about how difficult that was – you can't win!

However, where it really matters, in the eyes of government, regulators, and, increasingly, customers and the public, BASIS PROMPT will always outscore a trade association. This is because the organisation that runs PROMPT is an independent, not for profit, charity, exclusively focussed on the

training and professional development.

Opening doors

Because it runs professional registers across a whole range of sectors – farm agronomists, fertiliser advisers and amenity experts as well as pest management professionals – it can open doors to government and regulators that the pest management sector could not hope to achieve on its own.

Indeed the Chemical Regulations Division (CRD) of the Health & Safety Executive (HSE) is an 'observer member' on the BASIS board of 15 independent trustees. Chief executive Stephen Jacob also visits both CRD/HSE York and Bootle offices regularly to update them on BASIS activities, including PROMPT.

Providing data to power

Stephen commented: "It's part of my job to keep CRD/HSE and Defra up-to-date and whilst it's the crop protection register and agrochemical store inspection scheme that opens the door, it provides an opportunity for me to raise public health pest control issues at the same time. And it's not just CRD, it's MPs, MEPs and other legislators/regulators.

"We are probably guilty of not letting our own internal audiences, such as PROMPT register members, know what we do on their behalf."

No matter how hard a trade association tries to be independent, it will always be subject to the 'they would say



versus



that wouldn't they' criticism and rightly, because, if there's one thing a trade association must do, it is represent its members.

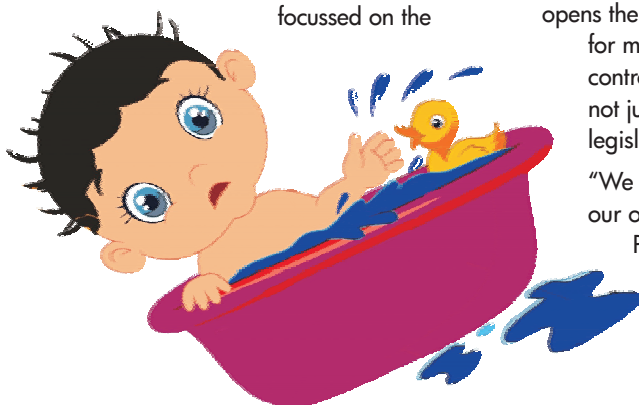
Is competition always good?

One of the arguments for another CPD scheme is that 'a bit of competition is good'. We would normally agree, as healthy competition often results in lower prices and better customer service.

However, in what is a very small sector and, where frankly, the price of membership is already very low (£25 for trade association members and £30 for non-members), having two competitive CPD schemes makes no sense. It simply duplicates costs and means that both schemes risk not reaching sufficient scale to fund development without either cross subsidisation, or a substantial increase in the fees levied. Where's the sense in that?

PROMPT is now in its eighteenth year but it has only been in more recent times that the register has taken off.

Membership was boosted when BPCA took the brave decision, applauded loudly by **Pest**, to make membership of a CPD scheme compulsory. Even then PROMPT did not breakeven. It was only last year that the register became self-funding and no longer required extra support from the industry and the other professional registers operated by BASIS.



As Stephen Jacob told us: "I'm a great believer in transparency so if you want to see the figures, go to Companies House and they are there for all to see."

Will BPCA be splitting out the costs associated with running its own scheme? We hope so. If not then BPCA members who choose to stick with PROMPT will always be left wondering whether they are cross subsidising the competitor scheme. But then looking further into the future there's always the possibility that BPCA will make membership of its own scheme compulsory. That may not happen immediately, not least because the big companies – e.g. Mitie and Ecolab – already have their own in-house systems but...it's not such a far-fetched idea.

Industry initiative

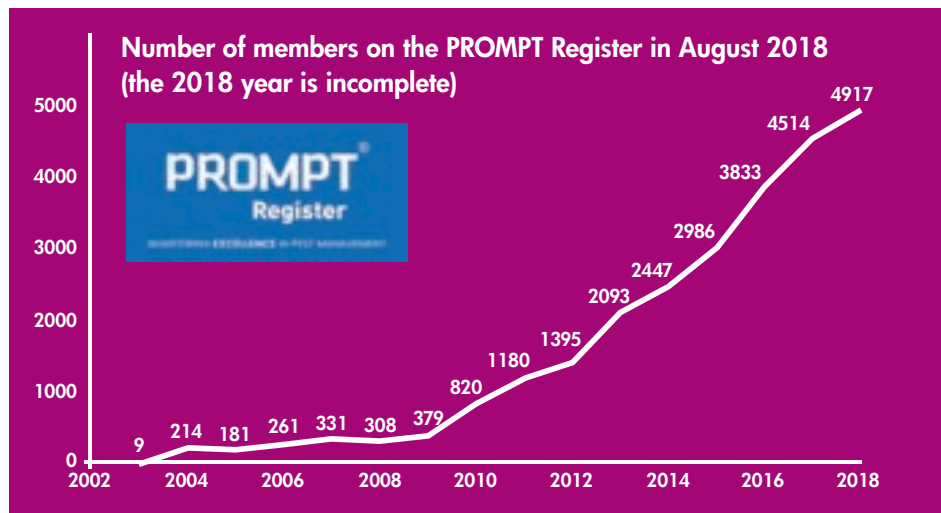
Let's not forget that PROMPT was an industry initiative and it was the industry, (with BPCA very much in the driving seat) that asked BASIS to set up the register. For the 16 years that PROMPT turned in a loss, there was no money for development. With the register finally attaining the scale needed, and prior to the BPCA announcement, a significant long term investment plan for PROMPT (over £100,000) had already been approved by the Trustees.

Included in those plans is a major IT investment which has already seen the appointment of IT specialist Andrew Boulding and there are also some exciting developments for the PROMPT app planned.

PROMPT also has a newly appointed co-ordinator, Chrissie Webster to work alongside professional register assistant, Linda Miller. Providing extra cover from the other registers are four members of staff who can usually deal with PROMPT queries.

Also in the later stages of development is the establishment of a membership committee to sit alongside the other committees, such as the one for PROMPT chaired by Sabra Everett of Killgerm. This will include elected representatives from each of the professional registers and will give members a direct route through to the Trustees as the chairman of the membership committee will also have a seat on the Board of Trustees.

BPCA has always been a member of the PROMPT management committee, although we expect that may be under review at present! So why has BPCA not been able to raise and resolve its servicing members concerns in that forum and so avoid a situation where the industry is, once again, presenting a divided front to regulators and customers.



Confusion for customers

From the customers' perspective pest control is already a very confusing landscape. To kick off there are two major trade associations, BPCA and the National Pest Technician's Association (NPTA). Then there's the Campaign for Responsible Rodenticide Use and the Think Wildlife scheme, the PROMPT professional register and, more recently, CEPA-certified. Now to add to the mix we will have BPCA registered.

To conclude

As BPCA may be about to find out, running a professional register is not as easy as it looks. There are some enormous peaks and troughs, for example, when members are scrambling to get their CPD activity registered before the year end. Then there are literally hundreds of events that need to have CPD points allocated to them and those tens of thousands of points must be added to the correct accounts.

Yes a good IT system will help and with improvements in IT constantly appearing, BPCA may well benefit from starting from scratch. However, new IT systems and a full time administrator don't come without cost. At the time of writing, our understanding is that an offer has been made for the new

post of BPCA registered administrator. Of course, if it's what the members want that is their choice and the BPCA chief executive must deliver.

We are not trying to be controversial for the sake of it. We genuinely believe this is a counterproductive move. BASIS has worked hard and subsidised PROMPT for many years to get it to work. Why have a second scheme when an independent one has finally got the momentum together?.

There's also an element of déjà vu. At PestTech 2015 NPTA announced it was looking to set up a CPD scheme with the agricultural training organisation, Lantra (called if we remember correctly Pest Passport). In the event, NPTA (wisely in our view) decided to stick with PROMPT.

Now, from 1 January 2019, NPTA has followed BPCA and all its members will have to be members of a CPD scheme. Cynics might say that's another driver for the BPCA move – the need to be different!

Ironically, NPTA members may rescue PROMPT by adding sufficient numbers to keep it viable. Of course, long-standing PROMPT members, who also happen to be members of BPCA, may see the benefit of sticking with the independent scheme. Time will tell.

Make up your own mind

Is BASIS PROMPT really so broken that the only solution is to start another scheme? We think it's still got a lot going for it:

- Independently run;
- Track record in other industries;
- Opens doors to HSE and Government;
- Run by specialists in professional registers;
- Tried and tested;
- Size and scale to fund development just achieved;
- Over £100,000 earmarked for investment;
- New IT expert recruited and in post;
- Plans to involve elected members well developed.

Why is BPCA introducing its own CPD scheme?

In the interests of balance and to allow our readers to make up their own minds, we wanted to explore both sides of the argument. We offered BPCA a full page to explain. Our main question was: What is so wrong with what we have now that it cannot be made to work effectively for the whole industry? We were disappointed with the response which is reproduced below in full. Did anyone actually read the question?

Phil Halpin, BPCA Vice President and the board member who is charged with overseeing the introduction, commented: "Yes, BPCA is creating a new scheme which includes CPD for member's employees. It'll join a list of five external and in-house CPD schemes currently recognised for membership criteria, including BASIS PROMPT. (Editor's note: there are currently four internal schemes recognised by BPCA so only PROMPT is open to all)

"We're excited about BPCA Registered. It's a different approach to professional development in the pest management sector and I look forward to being able to present it to **Pest** readers next year.

"With the help of our members, through our consultation, I'm confident we'll have a scheme fit for purpose on launch and into the future. All employees of member companies are welcome to provide feedback to Karen Dawes, BPCA's training development manager."

Howard Taffs, the servicing committee chairman said: "Members have been asking for a BPCA scheme for a long time now, and it's a good thing the Association is listening to its members. It's not for everybody, there are alternatives, and it's up to the member organisation who they use to demonstrate CPD criteria."

Ian Andrew, BPCA chief executive added: "At this time, we're the only Association to have CPD built into our membership criteria. It has been this way since January 2015. NPTA are only getting round to this from 2019 and so it is fair to say that BPCA has been instrumental in embedding CPD in the sector, particularly for our members.

The rationale for this is that we recognise that it's the front-line staff that deliver professional excellence to customers and BPCA Registered is our way of enabling our member organisations to

enhance the professionalism of their most valuable assets – their staff.

If you're a BPCA member company, you will be eligible to join BPCA Registered from the New Year. The scheme recognises employees' professional qualifications and commitment to professional development, as well as presenting another way members can demonstrate their credentials to prospective customers. As is the case currently, we will continue to recognise other CPD schemes for membership purposes.

As we are still in the development stage with BPCA Registered, I look forward to being able to share more detailed information on the scheme once we have worked through the ongoing consultation activities and spoken to the BPCA membership community to ensure that BPCA Registered meets their needs."



Philip Halpin



Howard Taffs



Ian Andrew




ServSuite™
www.PestControlSoftware.co.uk

BUSINESS AUTOMATION

➤ Marketing Solutions

➤ Office Automation

➤ Mobile Apps

➤ GPS Vehicle Tracking

➤ Scheduling & Routing

➤ Online Payments

➤ Invoicing

➤ Visual Mapping

➤ ...and Many More!

Call 020 8816 7164

globalsales@servsuite.net


ServicePro™



1env
Global Pest Control Products



rotech



SENTRY

VERSATILE METAL BAIT STATION



Introductory price only £16.75 each. Comes complete with rods and liner. Supplied with 2 keys per box of 6.

IT'S TIME TO UPGRADE YOUR EXTERNAL BAIT STATIONS



www.1env.co.uk

01702 525 202

sales@1env.co.uk

UK research shows bugs make us happier...

Giant bugs have been visiting Intu shopping centres throughout the UK this summer in a bid to reconnect kids and, indeed, their parents, with nature and make them happier.

The initiative came on the back of new research that revealed that being closer to nature makes you 67% happier, but one in six British kids had not seen a single bug in the past six months. The display featured 12 super-sized, indigenous bugs including the honey bee, ladybird, hornet, swallowtail butterfly and the nut weevil.

The campaign comes as reports show children are now better at identifying Pokemon characters than British wildlife.



The research found that 78% of parents want their children to be more connected to nature, but that just one in six children had not set foot in a park or forest in the last 12 months.

One in five children were unable to correctly identify a bee, while one in four have not

seen a caterpillar in over a year. One in ten kids did not know honey came from bees.

Adults were also lacking in their bug knowledge, with one in four unable to tell the difference between a bee and a wasp and the same proportion unable to correctly identify a grasshopper.

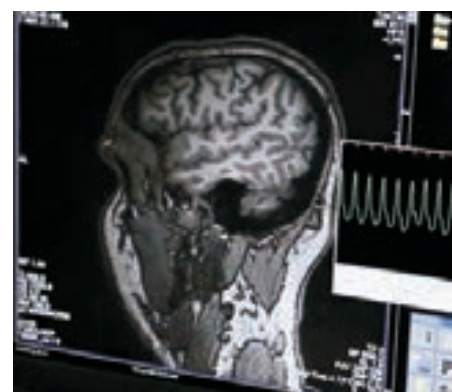
... whilst in the USA, bugs disgust!

Research backed by pest management giant, Orkin, has revealed a very different reaction.

Georgia Institute of Technology researchers discovered that bugs seen in a home elicited the neurological reaction of 'strong disgust,' an emotion associated with avoiding contamination and disease.

"We expected to find that the study participants were afraid of pests," said Orkin entomologist Mark Beavers. "The reaction of disgust is actually very significant, as many of the common household pests shown in the study can contaminate food and spread disease. It's amazing how the human brain has adapted to the potential problems posed by many of these pests, and reinforces why we all should take precautions to keep such pests away from where we live, work and play."

The researchers used a functional Magnetic Resonance Imaging (fMRI) machine to monitor participants' brain activity and heart rate when shown a series of videos. With nearly every participant, the pest videos triggered a reaction in the brain's insula, a region deep in the cerebral cortex associated with disgust. The amygdala, a portion of the brain associated with fear, was only triggered by videos of frightening animals.



Our conclusion

It rather depends which bugs we are talking about. As pest professionals know they can indeed be both friend and foe!

SMART AND SILENT

#OVI-1






FIND OUT MORE!
Contact Sean Paker: sean@catchmaster.com
Visit: www.catchmaster.com







The author, Rob Fryatt, presenting in China

Globetrotting again, Rob Fryatt of Xenex Associates and also a member of the Pest Technical Advisory Board, has been back to China. Some eight years since he first filed a report on the state of pest control in China (See **Pest 7**: January & February 2010) and with updates in 2012 and 2016 (See **Pest 20**: March & April 2012 and **Pest 44**: April & May 2016), he now reports on how much has changed.

Three times before I have shared with **Pest** readers my perspective on the dynamics within the Chinese pest management industry. Eight years since my initial report seems a long time ago, especially at the rate of change in China. Indeed, by the way the Chinese measure things today, this is far more than one whole government five year plan!

So, what has changed in that period? How does the industry look today and where is it going now that even major US pest management corporations have realised that, in time, the market will exceed that of the USA!

Indeed, by 2030 it could be that the global market splits into three clear regions of broadly equal size: namely China, the USA and the rest of the planet, including Europe.

Value of Chinese market

It is so hard to value the Chinese national market with estimates ranging from £500m up to £1,000m depending on whether you just look at the private market, or include government procurement as well.

But, there is broad agreement that the market is growing at 25-30% each year and now accelerating fast as the government puts food and environmental hygiene as a higher priority to meet the increasing expectations of its population. GDP per capita has now reached £5,000 per annum and in 'Tier 1' cities, like Shanghai and

Shenzhen, as much as £18,000.

Big numbers

In China the numbers are always big and the change, dynamic. When I wrote my first article, 'Open Your Eyes to China' in 2010, the Chinese Pest Control Association (CPCA) had 400 member companies. Today it has over 2,000! Then there are a further 1,000 companies that are members of regional, or city, local associations.

Estimates by Dr Jiang of Wuhan University, who runs the annual SINOPMP (Chinese Pest Management Summit) conference and exhibition, are that there are 10,000 companies with an average of 15 employees, giving a total workforce of 150,000.

More than the USA

There could easily be a further 10,000 smaller companies. So, China already has more pest management companies than the USA. And, before moving on, one final interesting 'big statistic' is that even at this

Eyes fixed on China

number there is only one pest management company for each 650,000 of the population. In Europe that same number is per 70,000 and in the USA around 25,000. Clearly there is space for many more companies yet!

Away from the numbers what is actually happening in this dynamic market?

Leading companies in China

The leading companies have not changed. Ecolab is still the market leader, followed by Rentokil but, even between them, they only have around 6% of the market. If you add in the three largest Chinese companies: Guardian, Bang Bang and Mars (all alliterations of their actual Chinese names) this only doubles to around 12% of the market. This is very different to other markets where the top five companies would expect to have a combined 40-50% market share.

The lack of any company with a dominant market share creates problems for many of the client companies who operate at a national level, such as the hotel chains, fast food outlets and food processors.

Again Dr Jiang comments that less than 20 companies are believed to have the capabilities to operate at a national level and many of these through regional partnerships.

The next 'leap forward' will surely be significant consolidation but, for that to happen, large sums of money will need to be invested and, right now, Chinese banks find investing in any service company a challenge!

So what are they funding? Banks are well used to investing in capital equipment and factory units. A client list on a computer and a file of service contracts is often not seen as a secure investment.

Driving forward

You may well ask then, what are the key factors driving the industry forward?

First, there is regulation: Increasing government standards around food hygiene following a succession of high profile lethal failures. Along with this is an improving regulatory scheme and, only recently, the Chinese government is now following the European model of separate regulatory schemes for agriculture and biocides.

Alongside this, the industry has developed certification schemes and categories of company to help the purchasers of services. Nothing yet to the level of the CEPA/CEN European Standard (EN16636), but I can honestly say I have lost count of the number of presentations I have given and the articles written, on raising industry standards in China. Regulation is without doubt top of the industry agenda.

Second are the requirements of the multinational client base. Major global hotel chains operate literally thousands of establishments and expect the same standards as elsewhere in the world the length and breadth of China!

Starbucks, KFC and McDonalds are even more regular sights in the 100+ cities with a population of over one million inhabitants. They are challenged by the need to standardise processes.

Starbucks shares its contract between two of the leading national companies, but McDonalds operates through more than 40 companies to get a national footprint. Standardised processes and expectation for service is the key to the future.

Urbanisation

The third factor is the increasingly affluent urban population. Today it is thought that around 300 million Chinese are considered 'middle class'. By 2022 that will have doubled to over 630 million, give or take a few million, or a few new cities!

The figures I quoted at the start of this article for market size, include very low levels of residential pest control. To date it has not been a government priority and it presents unique challenges.

A significant percentage of the urban population live in massive residential blocks, but with increasing income levels, the desire

to live in houses is increasing. In addition, the market figures I quoted did not include termite control which only recently has been deregulated from government control and opened up to the commercial sector. Just another £200 million market that is now available!

Social media

Finally, there is the impact of social media. Still under tight government control, this means that Twitter and Facebook are almost impossible to access and Google just does not exist! But within China alone, the mandarin character-based WeChat has almost as many subscribers as Facebook and Twitter combined have outside China. Indeed in March this year it reached one billion users a month!

Add to that the Alibaba commercial trading platform and it soon becomes clear that the Chinese are totally obsessed with social media. Going viral has an even more powerful effect in China.

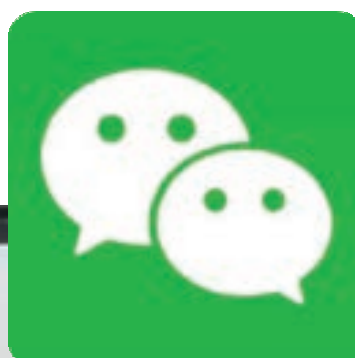
Chuck Jiang, managing director of Guardian, the number one Chinese operator, tells the story of a leading national restaurant chain, Haidilao, that found itself

under severe pressure. A rat was filmed in one of its restaurants and posted on WeChat. The result was that it had to hire a nationally known pest management company the next day and make daily social media posts about this action to recover its image.

Some readers may have visited China already, but if you haven't I urge you to consider it. At home, over the next 10 years you will certainly continue to see more and more middle class Chinese visitors in the UK, helping to boost our own domestic tourism industry.

Young Chinese pest control companies are hungry to capture this growth opportunity. Amongst them is a thirst for new and novel pest management, all within a nation that every day is more and more certain of its place in the world. But the market still lacks significant experience, skills and knowledge.

Having opened your eyes to China, it's now a case of fresh eyes on China, or, indeed, as the market is soon to be the number one in pest management – perhaps the better headline is keep your eyes firmly focused on China.



WeChat has a billion active users



Dr Chuck Jiang, managing director of Guardian

Neosorexa® Gold

The UK's No 1 rat and mouse bait containing Fortec technology for increased consumption.



- Multi-purpose, cut wheat bait for fast, effective and consistent control
- Extremely palatable to both rats and mice with Fortec technology
- A lethal dose consumed within just one day
- Proven superior performance to ordinary baits
- Achieves superior control under a wide range of baiting conditions

BASF
We create chemistry

Bed bug special 2018

Welcome to our annual bed bug special. We begin on this page with a look into what the future might hold for bed bugs. This is followed by a round-up of news. Then there's a technical look at how IPM can be used to prevent insecticide resistance. This is followed by two features on bed bugs and the hotel sector. The first summarises research into the reputational cost of bed bug infestations whilst the second offers some useful practical advice on how to keep hotels bed bug free.

Short and sweet – *Bedbug*

As its simple title indicates – *Bedbug* – this compact book not only provides a good scientific run down of this pest, but offers it in an amusing, and often light hearted, manner.

However, the author, Klaus Reinhardt, knows his stuff as he cut his bed bug teeth working in the labs for Sheffield University's Dr Mike Siva-Jothy, alongside Dr Richard Naylor, who is credited for most of the photographs. It was here he was bitten by the bed bug bug. Today, Klaus Reinhardt is professor of applied zoology at Technische Universität Dresden in Germany,

The book traces bed bugs from fossils to ancient Greek theatre, modern horror fiction and the bitter battles of recent scientific research. It investigates the animal's natural history and examines how ordinary people, travellers, artists and scientists have experienced and confronted bed bugs over the centuries.

The author explores how the fear of bed bugs has been institutionalised, leading not only to the development of pest control and research laboratories, but to bed bugs becoming the 'Other', used to represent personal enemies, denigrate social classes and characterise parasitical villains. With a mix of amusing, repulsive and illuminating illustrations, *Bedbug* informs, entertains and even asks for tolerance for a surprising and misunderstood insect.

192-pages. ISBN 978-1-780239736

Price £12.95 but a 20% discount is offered by the publisher, Reaktion Books, if this code is quoted PEST20.



www.reaktionbooks.co.uk



The future for bed bugs

If you are a pest professional involved in bed bug management then you could say the future is bright. In the final chapter of *Advances in the Biology and Management of Modern Bed Bug* the authors Stephen Dogget, Dr Dini Miller and Prof Chow-Yang-Lee, see no visible light at the end of the bed bug tunnel.

The global resurgence continues apace, although there is perhaps one exception. In Australia current evidence suggests that bed bugs are no longer on the increase and could even be in decline.

Modern bed bugs are increasingly resistant to insecticides and have evolved many resistance mechanisms. The obvious outcome has been treatment failures. Many of these failures can be linked back to inadequate pesticide efficacy testing, where modern field strains of bed bugs were not used. This situation continues so new formulations may show good efficacy in the laboratory, but may not provide the desired level of control in the field.

Yet, it is still possible to eradicate **any infestation** with current technologies by following Integrated Pest Management (IPM) practices. The widespread use of IPM, however, is largely confined to Australia, Europe, the USA and Canada. Large parts of the world still rely on chemical control, often the pyrethroids, even though resistance to this class of compounds is widespread.

The authors conclude: In spite of the steady increase in the number of published studies that have deepened our understanding of bed bugs, the challenge of finding low-toxicity, cost-effective and time-efficient management strategies remains. This means that bed bug control is prohibitively expensive to a large proportion of society and, while it is so, it can only be envisaged that bed bugs will continue to be an important insect pest of human society for many years to come.

Everything you need to know...

The review of the future, above, is summarised from the final chapter in the 472-page 'bed bug bible', *Advances in the Biology and Management of Modern Bed Bugs*.

Readers can get a 20% discount – by using the code BUG18 at the checkout. ISBN 978-1-119-17152-2



www.wiley.com/WileyCDA/WileyTitle/productCd-1119171520

Global Summit

Get your fix of bed bugs before Christmas and go to the bi-annual Global Bed Bug Summit to be held on 27-29 November 2018 at the Sheraton Denver Downtown Hotel in Denver, Colorado, USA.

Organised by the USA's National Pest Management Association (NPMA) with sponsors BedBug Central, the three-day conference features new research from the top bed bug experts worldwide. The meeting boasts the largest trade floor dedicated to bed bug products and services for pest control companies. In addition, the 'Night Out with the Experts', networking event is back by popular demand.

Full details at:

www.npmapestworld.org/education-events/upcoming-events/global-bed-bug-summit/



Bed bugs going digital

It had to come....the industry now has numerous rodent boxes that offer Wi-Fi enabled remote sensing... so no surprise that now there's one for bed bugs!

First out of the traps comes a digital device from the USA. It is manufactured by Delta Five – a technology innovator of robotics, automation and unattended sensors. The company's Automated Insect Monitoring System is the first and, so far only, Wi-Fi-enabled bed bug monitor.

The manufacturers say it is compact, standing only three inches high (around 7.5 cms), it attaches easily to out-of-sight surfaces to provide remote 24/7 monitoring with real-time notification.

It uses an all-natural, odourless lure to attract bed bugs and other insects. These are seen by the device's internal cameras that, in turn, activate the traps.

The system then notifies users via email or SMS.

Word on the block is that another system is in development in the UK. We'll bring you news of that as soon as we have it.



Bed bug focus closer to home...



Jeff White from BedBug Central

Killgerm is organising two one-day training programmes featuring bed bug expert Jeff White, technical director at BedBug Central, USA. The full day's programme offers delegates a unique insight into his experience in the US regarding bed bug treatment and science-based protocols; all leading to successful commercial strategies.

Jeff spoke at PestEx 2017, so this is another opportunity to meet the renowned US bed bug expert. The dates are: 2 October at Killgerm Training, Ossett (but this is unfortunately believed to be fully subscribed) and 4 October at Ruislip Golf Club, Ickenham Road, Ruislip. Price £135.

As Jeff's company developed and sells the SenSci Volcano bed bug monitor this will no doubt feature. It is worth recording that the former parent company of BedBug Central, Cooper Pest Solutions, was acquired by Terminix in May this year. However,

New Jersey-based BedBug Central continues to operate financially and strategically as a separate and distinct entity.



Scout them out

Since our last bed bug special (see **Pest 52**: August & September 2018) the Nattaro Scout monitor, developed by Nattaro Labs in Sweden and seen at several trade exhibitions around the globe, is now widely available, including in the UK, via Edialux.

Nattaro Scout is a bed bug monitoring system that uses an aggregation pheromone to capture bed bugs at all stages of development.

The design, explains Nattaro, makes the product easy to work with and it fits well under a bed, between mattresses or on the floor. Nattaro Scout can be used to identify an infestation before treatment and to confirm success after treatment.

It is recommended to use two to four traps per bed and to check the traps within 15 days. For longer term use, the lures can be changed and consideration given to moving the traps to a new spot in the room, based on the user's professional experience.



Grant for bed bug pheromone development

In early July Innovate UK announced that a grant of £220,034 had been won by the London School of Hygiene & Tropical Medicine (LSHTM) to help the commercialisation of a new bed bug aggregation pheromone it had identified. The grant actually goes to Vecotech, a spin-out company from LSHTM.

Professor James Logan, of Vecotech and head of department of disease control at LSHTM, said: "Bed bug control remains one of the most lucrative and growing markets in the pest management industry globally and insect numbers are also reported to be increasing rapidly.

"There are a few bed bug detection methods and monitoring devices available, but there are no established products with proven reliability and efficacy for detecting low level infestations quickly."



Professor James Logan

Mary Cameron, founder and director of Vecotech explained: "After years of painstaking research on bed bug behaviour we have discovered the essential components of the chemical signals used by bed bugs to attract one another.

"We have patented our novel bed bug pheromone composition and are now focusing on creating a highly effective lure to trap bed bugs."

Watch this space....

Is bed bug work for specialists?

When bed bugs are on the agenda at industry gatherings there is generally a consensus that bed bug work has become a more specialised area of pest control. Comments such as "That's something for the bigger companies," are often heard. However recent analysis of the data from the National UK Pest Management Survey 2018 reveals a rather different picture.

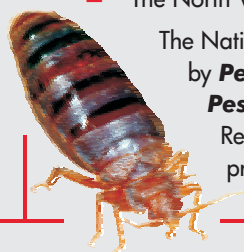
The 2018 results show that all types of pest professionals get involved in controlling bed bugs – self employed pest controllers, private pest control companies and local authority pest control units. Indeed, 90% of local authorities do bed bug work, 87% of private companies and 78% of self-employed pest controllers.

Despite all the media coverage generated by this pest – in the general media as well as within our pages – bed bugs only take up a relatively small proportion (5%) of a pest professionals time.

We make no apology for the space devoted to this often difficult to control pest as, since it made its reappearance on the world stage, there has been a lot of new research and developments in products and control techniques to cover. As is plain to see from this 2018 Bed Bug Special those activities continue apace.

The bed bug data has also been analysed by geographical region. It has to be said that in doing this the sample sizes for some regions are small. However, the top three broad regions where almost two thirds of the bed bug work recorded in the survey took place are:

- London and the South East – 38%
- The Midlands – 17%
- The North West – 10%



The National UK Pest Management survey is run annually by **Pest** with 2018 being its eighth year. For 2018 **Pest** teamed up with market research professionals, Research Engine, who have refined the survey and provided additional insight into the findings.

A fungal fight – Aprehend

In last year's bed bug special (see **Pest 52**: August & September 2017) we reported on the near commercialisation of Aprehend, a sprayable formulation composed of *Beauveria bassiana* fungal spores, initially developed by Penn State University, USA. So, it was good to see the product actively being sold at PestWorld in the US last year by ConidioTec.



Don McCandless and Nina Jenkins on the ConidioTec stand with Aprehend at PestWorld 2017

Aprehend comes as a ready-to-use oil formulation spray for application at ultra-low volume rates. It is sprayed strategically in narrow bands where bed bugs are known to walk.

Bed bugs of all life stages, sex or feeding status are killed within four to ten days following short-term contact with a treated surface. The fungal spores are easily transferred to others in the colony and germinate within 20 hours of contact, penetrate the cuticle of the bed bug and colonise inside, resulting in death.

The Aprehend website says it provides three months protection from the establishment of bed bug infestations, so a regular (quarterly) treatment offers hotels the first, and only, effective method of protection against bed bugs.

Sounds wonderful. **Pest** will explore plans for Europe during this year's PestWorld.

**“ Good night, sleep tight
Don't let the bed bugs bite.”**



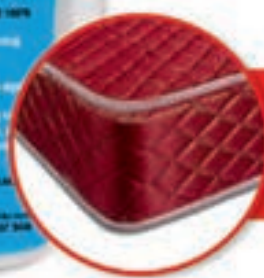
**You can try reciting it, but it's
wiser to ask for an expert's help.**



**New BIOPREN® 6 EC
containing S-methoprene (IGR)**

with triple activity able to control pests
resistant to synthetic pyrethroid insecticides:

- natural pyrethrum flushes out and knocks down hidden insects
- its S-methoprene insect growth regulator active ingredient disrupts the life cycle of insects by preventing them developing into adults
- PBO enhances the efficacy



**ACTIVES GIVE HIGHLY EFFECTIVE AND
SAFE USE EVEN ON MATTRESSES**

Use insecticides safely. Always read the label and product information before use. Biopren® is a registered trademark of Bábolna Bio.

To purchase the product,
please get in touch with our partners:

Barrettine
Environmental Health



For more technical information scan
the code with your smart phone.



Bábolna Bio
The European Company

BÁBOLNA BIO Ltd.
H-1107 Budapest, Szállás u. 6.
E-mail: info@babolna-bio.com Internet: www.babolna-bio.com



This article by researchers Aaron Ashbrook, Ameya Gondhalekar and Gary Bennett from Purdue University, Indiana USA, first appeared in the leading USA pest management magazine *PCT (Pest Control Technology)*.

It provides excellent guidance on how to use chemical and non-chemical approaches in combination to tackle bed bug infestations.

Readers, however, need to note that not all the products mentioned (the neonicotinoids and pyrolles, for example) are registered in the UK. Nor are the fumigants, such as DDVP and sulfuryl fluoride, available for UK use. On the other hand, the Americans do not have access to neither carbamate products (bendiocarb), nor OP products (azamethiphos) that are commonly used against bed bugs on this side of the pond.

The principles explained, however, are appropriate wherever you do your pest management.

Can IPM help prevent insecticide resistance?

Combining non-chemical control techniques with chemical solutions will reduce the selection pressure that leads to resistance build-up in a bed bug population.

The resurgence of bed bugs that began in the early 2000s has been linked to insecticide resistance. However, bed bugs' ability to develop resistance is not a new story.

Historically, bed bugs have developed resistance to insecticides from the chlorinated hydrocarbon class, such as DDT. Recently, researchers have found that certain bed bug populations are resistant to chemicals within the pyrethroid, neonicotinoid and pyrolle classes.

How resistance develops

How a population becomes resistant to an insecticide is simple: before a product is applied, some individuals in a population have rare resistance genes that are beneficial in the presence of an insecticide. Once a chemical is applied, a few of these insects survive exposure because of their resistance genes. These insects then reproduce and pass on resistance genes to their offspring.

It is important to consider that just because bed bugs are found alive after a treatment does not automatically mean they are resistant to a particular insecticide. They may have avoided exposure or could have been reintroduced. Still, there are steps that can be taken to identify insecticide resistance and prevent its development while also eliminating an infestation.

Additionally, there are some products on the market to which bed bugs have not yet developed resistance. Incorporating the strategies described in this article into a control programme can prevent resistance development and help maintain the efficacy of products.

Physical controls

One effective way to prevent insecticide resistance development is to use physical or non-chemical control methods that cause mortality through a non-specific mode of action in combination with insecticides. Physical control methods reduce the amount of liquid insecticide needed and can be used in certain areas where insecticides cannot be used.

There are a variety of non-chemical techniques that can be deployed. For example, bed bugs can be removed from furniture by thoroughly vacuuming or by using a steamer that expels hot steam higher than 90°C.

One natural product that can be used is silicate dust. This abrades an insect's cuticle, causing it to desiccate. Furthermore, because of how desiccants work, bed bugs cannot develop resistance to them. Desiccant dusts should be applied in cracks and crevices because of inhalation hazards to people.

Preventive measures, such as placing pitfall interceptors on the legs of furniture or using mattress encasements, can trap insects and may cause them to starve or desiccate.

Deployment of interceptor traps also serves as a way to monitor the efficacy of a treatment and detect future introductions.

Heat treatments

In heavy infestations where bed bug numbers are very high, consider using thermal remediation. Lethal heat can kill all bed bug life stages if infested items reach 50°C minimum for a sufficient length of time.

After a heat treatment, insecticides can be applied to bed bug harbouring areas or to spots that did not reach lethal temperatures. By integrating a variety of non-chemical strategies into a control programme, the number of insecticide resistance genes in a population can be reduced and better control can be achieved.

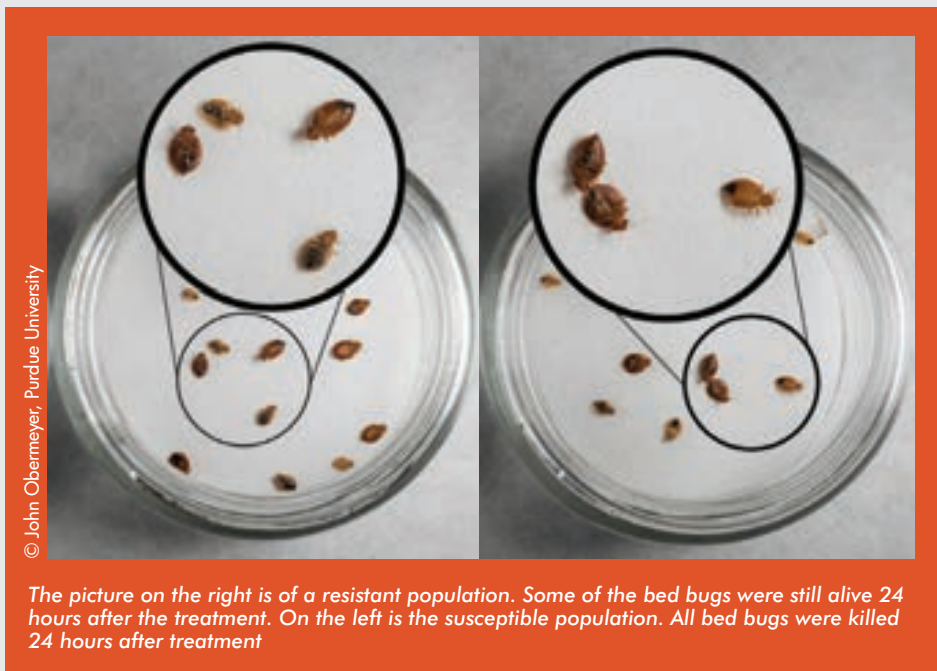
Using jar tests

Methods also have been developed to test the presence of insecticide resistance in a population.

If time permits, conducting a 'jar test' is a way to test how effective an insecticide will be on a bed bug population, whether they are resistant, or not, and how a substrate will affect insecticide performance.

To prepare a test, treat a container with a small amount of insecticide. A good time to prepare a testing container is right after mixing an insecticide. Allowing the jar to dry completely.

Next, collect insects and place them in the treated container either before applying an insecticide in the infested area or on a follow-up visit. If any of the insects survive exposure to chemicals from the pyrethroid or neonicotinoid classes after 24 hours, then



there are likely some resistant individuals present in the population.

Insecticides from the pyrolle class are slower acting, therefore it may take longer for susceptible bed bugs to die.

A pre made kit can also be bought from the World Health Organisation's site at http://www.who.int/neglected_diseases/vector_ecology/resistance/WHO_Test_Kit_Catalogue_order_form_Oct2016.pdf

If insects survive exposure to the chemical inside the jar test, mixing a synergist with insecticides such as pyrethroids, pyrethrins or neonicotinoids, while also using non-chemical control methods, can prevent further development of resistance.

The role of synergists

By selecting a product which includes a synergist the efficacy of the insecticide will increase against some resistant individuals.

Synergists, such as PBO, have low toxicity

by themselves but interfere with a specific mechanism of insecticide resistance, where individuals are resistant due to the presence of higher quantities of detoxification enzymes.

When the liquid insecticide/synergist mixture enters a bed bug, the synergist interferes with the insect's enzymes that detoxify the active ingredient, thus enhancing efficacy.

A caveat to using a synergist is that in order for them to make an insecticide more efficacious, the insects must be contacted by the liquid mixture, since dried synergists lose their efficacy.

Other mechanisms

Besides having higher amounts of detoxifying enzymes, other mechanisms of insecticide resistance have been found in bed bugs. Therefore, another chemical-based strategy also should be used to prevent resistance development.



Noses for hire!

Our noses are fully trained to sniff out bed bugs in hotels, public buildings, aircraft, ships...in fact just about anywhere! Working under your company brand, they can help your bed bug servicing business prosper. Find out more by calling our human:

Adam Juson of Merlin Environmental on 0800 037 7332 or email him at: info@bedbugcontrol.co.uk
www.bedbugdogs.co.uk



Product rotation

This other chemical-based strategy is called product rotation theory and is implemented when conducting a follow-up treatment. For this strategy, if an insecticide treatment is needed during a follow-up visit, the product applied is from another chemical class with a different mode of action than the insecticide applied on the previous visit.

Product rotation theory works on the idea that if any individuals in a population are resistant to an insecticide from one class, they are likely not going to be resistant to an insecticide from another. Therefore, if they are exposed to an insecticide from a different class each time, then they will likely not develop resistance to any single product.

The time for rotating to an alternative product is based on the life cycle of the pest.

For bed bugs, it takes a little longer than a month for an egg to hatch and reach adulthood. Therefore, when rotating to a different product for bed bug control, the change should occur at least once every month when visiting an account.

For more information on the groupings of insecticides and resistance management, visit the Insecticide Resistance Action Committee's (IRAC) website at www.irac-online.org.

Final thoughts

In conclusion, history has taught us that we should not ignore the potential for bed bugs to develop resistance to products. However, there are a variety of strategies that we can use to not only prevent the development of insecticide resistance, but to also detect resistance and to deal with it if it occurs.

Combining non-chemical control techniques that have a non-specific mode of action with an insecticide, and possibly a synergist, will reduce the selection pressure that leads to resistance build-up in a population.

When conducting a follow-up treatment,

applying an insecticide with an alternative mode of action will further reduce the potential for resistance development.

By utilising a variety of control tools, the

efficacy of products can be maintained while also providing the much-needed relief for those impacted by bed bug infestations.

Control options for bed bug prevention, detection and elimination

Bed bug control tools	Options
Prevention and detection	Education of residents, active or passive interceptor traps, mattress encasements, canine inspections
Non-chemical methods	Vacuuming, steaming, desiccant dusts, freezing infested items, heat treatment (above 50°C)
Insecticide classes	Pyrethrins, pyrethroids, neonicotinoids*, pyrolles*, synergists** (added to an insecticide), insect growth regulators, fumigants (DDVP* and sulfuryl fluoride*), essential oils (biochemicals). In the UK, carbamate and some OP products are available.

* These actives are not available in the UK

** In the UK synergists only come as a component of an approved product

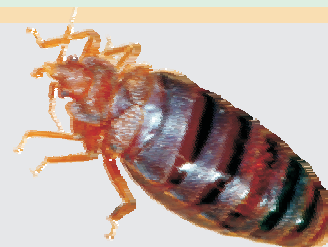
Bed bug classes and actives

Pest recognises that the insecticide class details contained in the table above are quite confusing. To make it clear to readers as to what is available in the UK, the table below neatly sums this up and also includes additional information on active ingredients.

Insecticide class	Active ingredients labelled for bed bug control	
Organophosphate	Azamethiphos	
Carbamate	Bendiocarb	
Pyrethrin/Pyrethroid	Natural pyrethrins Tetramethrin d-Phenothrin Permethrin Cypermethrin	Alphacypermethrin Deltamethrin Imiprothrin IR-trans-phenothrin
Insect Growth Regulator (IGR)	S-methoprene	Pyriproxifen
Desiccant	Diatomaceous earth	

References

- Ashbrook, A.R., Scharf M.E., Bennett, G.W. and A.D. Gondhalekar. 2017. Detection of reduced susceptibility to Chlorfenapyr- and Bifenthrin-containing products in field populations of the bed bug (Hemiptera: Cimicidae). *J. Econ. Entomol.* 110(3): 1195–1202
- Bennett, G.W., A.D. Gondhalekar, C. Wang, G. Buczkowski and T. Gibb. 2016. Using research and education to implement practical bed bug control programs in multifamily housing. *Pest Manag. Sci.* 72: 8–14.
- Romero, A., M.F. Potter, D.A. Potter and K. Haynes. 2007. Insecticide resistance in the bed bug: a factor in the pest sudden resurgence? *J. Med. Entomol.* 44: 175–78.
- Romero, A., M. Potter and K. Haynes. 2009. Evaluation of piperonyl butoxide as a deltamethrin synergist for pyrethroid-resistant bed bugs. *J. Econ Entomol.* 102: 2310-2315
- Romero, A. and T.D. Anderson. 2016. High levels of resistance in the common bed bug, *Cimex lectularius* (Hemiptera: Cimicidae), to neonicotinoid insecticides. *J. Med Entomol.* 53: 727–731.



About the authors

Aaron Ashbrook is a Ph.D. student, Ameya Gondhalekar is a research assistant professor and Gary Bennett is a professor of entomology at Purdue University, Indiana, USA.

Nattaro Scout

A new, smart way to better bed bug management

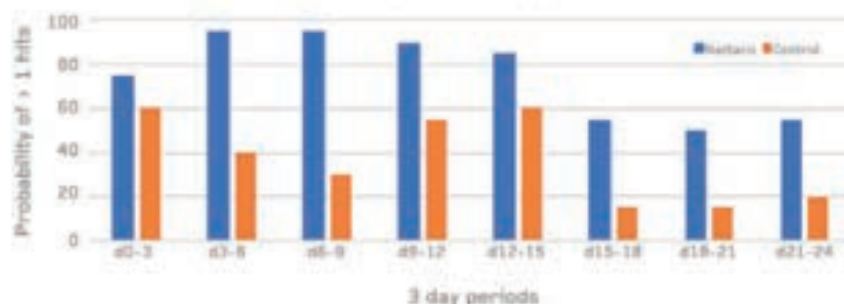


- Catches bed bugs at all stages of their life cycle
- Fits under beds, between mattresses and on the floor
- Helps to identify an infestation before treatment and can be used as a control method after treatment

New tests show that the
Nattaro Scout Lure
lasts for up to 3 weeks!



Probability of one or more captured bed bugs
per trap over 3 day periods



Available now from Edialux!
www.edialux.co.uk





Bed bugs bad for hotel reputations

Just the suspicion of a bed bug infestation, even if it was years ago, can be enough to put some travellers off staying in a hotel, as research presented by Dr Mike Potter at the International Conference on Urban Pests (ICUP) in Birmingham in July 2017 shows.



Dr Mike Potter speaking at ICUP 2017

Background

In the UK there are c. 730,000 hotel rooms. Occupancy rates are 75% + so there are well over half a million hotel rooms in use every night, generating a revenue of around £14.5 billion p.a. The figures for the USA quoted by Dr Potter are, of course, much bigger, 5 million guestrooms generating revenue of \$176 billion p.a., with almost 5 million people staying in hotels and motels nightly.

The sample

The sample comprised 2,088 people, 62% who travelled mainly for leisure and 38% mainly for business. To encourage broad participation and minimise bias, participants were told that they were taking part in a survey about attitudes and preferences involving hotels. Bed bug questions were introduced towards the end of the online survey.

The rise of social media and the widespread use of review websites such as TripAdvisor when selecting a hotel room has huge implications for the hospitality sector and the pest management industry alike. Entomologist, Dr Mike Potter from the University of Kentucky, USA, is recognised as one of the world's top experts in bed bugs and their control. His paper at ICUP 2017 last summer, however, took a much wider view of the bed bug resurgence issue.

Research conducted by Dr Potter and his team into the attitudes of leisure and business travellers in the USA has revealed that a single report of bed bugs in an online review would cause the majority of travellers to choose another hotel. We suspect the findings would be much the same if a similar survey was conducted in the UK. The research also recorded a widespread inability among travellers to identify bed bugs. Combine these two findings with the ease with which disgruntled travellers can now post their opinion to social media and review websites and the ramifications for hotel owners are enormous. Reputations can be damaged and revenue lost, even if it is later determined that bed bugs were incorrectly identified.

The research has implications for both hotel management and pest professionals. Hotel staff certainly need to be trained, not only to respond quickly and empathetically when incidents arise, but also to correctly identify bed bugs. Cleaning and maintenance staff, in particular, also have a vital frontline role in picking up on any early warning signs of an infestation. This training is something pest professionals could, or indeed perhaps should, provide to their clients. More importantly for our industry, information about the long-term adverse effects of a bed bug infestation (real or imagined) on a hotel business should be a powerful tool when negotiating pest management prevention and service contracts.



Ficam® W



Superior *bed bug control*

- // Excellent against bed bugs, wasps, ants, fleas, and more
- // Odourless, non-staining, non-tainting and non-corrosive
- // Provides prolonged, residual insecticidal activity



Science for a **better life**

Ficam® W contains bendocarb 80 % w/w. HSE 5390 PCB 93413. ALWAYS READ THE LABEL AND PRODUCT INFORMATION BEFORE USE. PAY ATTENTION TO THE RISK INDICATIONS AND FOLLOW THE SAFETY PRECAUTIONS ON THE LABEL.

The findings

Identification

- Only 35% of business and 28% of leisure travellers were able to identify a bed bug correctly.
- A substantial number (29% business, 42% leisure) admitted not knowing (or even being able to hazard a guess) which of the insect silhouettes – ant, termite, louse, tick and bed bug – was, in fact, a bed bug.

Experience

- Asked about their level of prior experience of bed bugs most said they knew of them via the news but had no personal experience (44% for business, 56% for leisure). Around one in five said they hadn't really seen or heard much about bed bugs.
- The majority said that they thought about bed bugs when staying in hotels but were not worried (35%) or only briefly worried (29%).
- 21% didn't think about them at all, but 14% worried about bed bugs often when staying in hotels.
- In general, leisure travellers worried more than business travellers and women were 5% more likely to worry 'often' than men. Women with children were even more worried. Interestingly, whilst females made up 48.4% of the sample, 65.1% of them said they were primarily responsible for choosing and booking hotels for leisure purposes.

Online reviews

- Other studies have concluded that reviews are the most important factor in hotel booking decisions. This makes online reviews and reputation management the most important issues for the hotel industry. TripAdvisor reports that 80% of travellers read 6-12 reviews before selecting a hotel on their site.
- 60% of leisure and 51% of business travellers said they would be very unlikely to choose a hotel which had a single online report of bed bugs.
- Indeed 33% of all respondents said they would not select that brand of hotel again, suggesting loyalty to an entire brand can be harmed by reviews posted about a single property.

Evidence of bed bugs

- Compared to other hotel room problems – dirty towels or sheet, signs of smoking, odours and the like, evidence of bed bugs is much more likely to cause a guest to switch hotels and seek compensation. A massive 60% said they would leave and demand a full refund.
- 47% said that if they found a live bed bug they would report it to the front desk and post about it on social media.

Duty to disclose

- Travellers were also asked whether they thought hotels had a duty to warn guests of previous bed bug infestations. 80% said 'yes, the hotel should tell guests' and amongst these around a third wanted to know of any bed bug infestation ever.

Which of these is a bed bug?

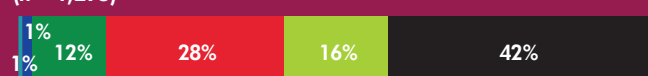


- 1 Ant
- 2 Termite
- 3 Louse
- 4 Bed bug
- 5 Tick
- 6 Don't know

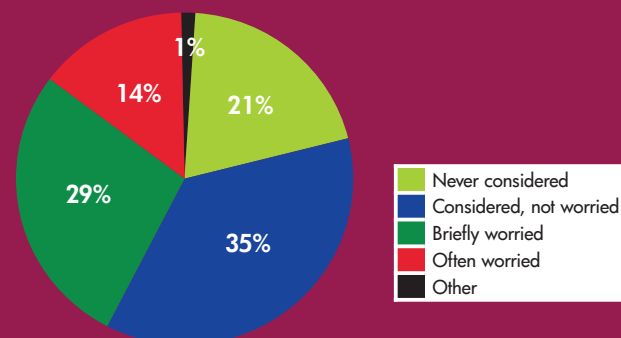
Business
(n = 790)



Leisure
(n = 1,298)



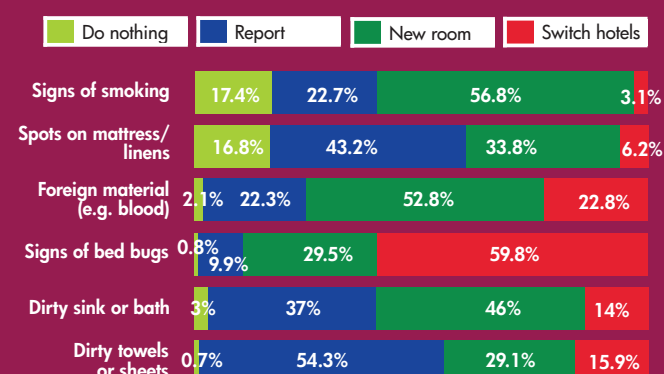
Are you worried?



The importance of online reviews



Traveller response to hotel room problems





Independent consultant, Clive Boase

Be proactive to keep bed bugs undercover

In the hotel sector, working closely with client staff to ensure rapid identification and treatment of bed bug infestations can dramatically help to minimise infestations during busy periods. Clive Boase, of the Pest Management Consultancy, explains that there are both short and long-term consequences of a bed bug infestation for hotels, whilst Richard Moseley from Bayer outlines treatment options.

A bed bug infestation in a hotel means that, in the short term, rooms can be out of action for a week to ten days while treatments are carried out. Where multiple rooms are involved this could have serious implications for the business.

As Clive Boase from the Pest Management Consultancy explains: "Research from the University of Kentucky, USA (see pages 29 & 31) has shown that hotel customers are very sensitive to reports of bed bugs and would be likely to look elsewhere for a room if they hear that a particular establishment, or even a hotel chain, is affected by them.

"Bed bugs can be active from 12°C to the

mid-30s. As hotel rooms tend to be kept at 20 to 25°C, conditions are favourable for them throughout the year. Nonetheless, most hotel chains see a peak in bed bug reports and treatments from June to October."

Detection

When identifying an infestation, it is important to note that although adult bed bugs are visible to the naked eye, around the size of an apple pip, they spend most of their time hidden in crevices around the bed frame. The first sign of their existence can often be when a hotel guest is bitten.

"Bed bugs prefer to feed on the areas that are exposed outside the sheets, so bites may occur on the face, neck or arms. They often



lead to an itchy rash but not everyone is susceptible.

"While specialist bed bug detection devices are available, hotel managers are often concerned about the potential negative impact on customer perception, so many hotels prefer not to use them. An interesting development however, has been the use of detection dogs," comments Clive.

"Businesses such as cruise ships and airlines have a tight turnaround between customers and don't have time for lengthy inspections. Fortunately, specially-trained dogs can detect even small numbers of bed bugs very quickly, making them ideal for this type of operation."

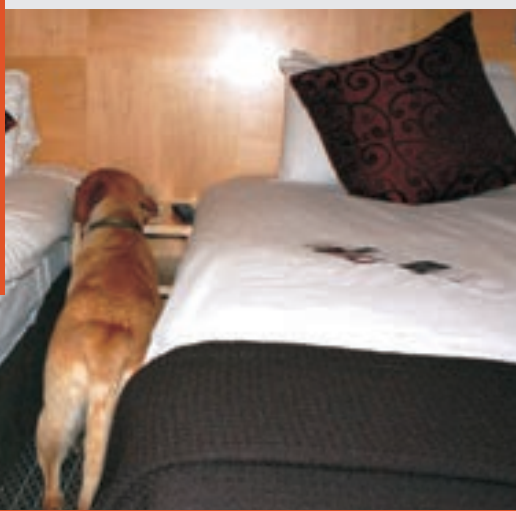
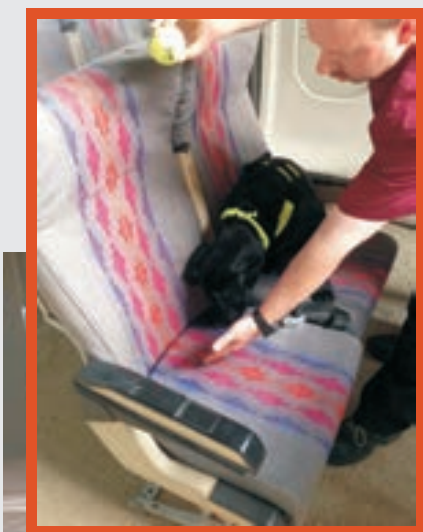
Early identification is key

While the use of dogs may not be suitable for all situations, a regime of monitoring by the housekeeping staff can help to quickly identify the pests.

Early identification will help a pest professional gain control, so it is essential to stress the importance of monitoring to hotel clients.

"Responsible establishments should have a proactive and documented regime in place to check beds routinely. Some will inspect beds monthly, while others will carry out this inspection during the routine turning of mattresses.

"As pest professionals know only too well, tell-tale signs are clear to those who know what to look for. Apart from seeing the bugs themselves, there may be minute blood spots



Detector dogs sniff out bugs in aircraft, cruise ships, hotel bedrooms and many other locations

on the sheets, or clusters of black spots around the edge of the mattress, bedframe, or headboard which are bed bug faeces. Making sure hotel staff know what to look for should be part of the professional pest management service," suggests Clive.

As soon as hotel staff suspect an infestation then they also need to know that it is time to call in their pest control professional.

The room with the suspected infestation and several surrounding rooms will need to be inspected thoroughly.

"It is important to establish the full extent of any infestation, as bed bugs can easily crawl through small holes, for example in walls where wiring passes through for headboard lighting, or through small gaps around interconnecting doors," says Clive.

Avoiding transfer between rooms

Infestations can also easily be spread from room to room. Although bed bugs do not live in the bed linen itself, careless handling of laundry can easily move the pests.

"If used bed sheets are piled up in corridors prior to collection, any bed bugs caught up can spread to other rooms. Having good housekeeping procedures in place, such as bagging up linen before taking it out of the room, can help prevent the spread of bed bugs," details Clive.

He goes on to note that bed bugs are not a cleanliness or quality issue, and that even five-star hotels can be affected. However, the problem is not as widespread as often thought.

"Across the country around 25% of hotels are affected in any one year. But in large cities, bed bugs are certainly more prevalent, so vigilance is important."

Integrated Pest Management

Insecticide resistance has become more prevalent in the last 15 years, so an Integrated Pest Management (IPM) approach using a sequence of products and management practices, is often the most effective control method (see this issue pages 25 to 27).

"This is why it's so important to relay best practice advice to customers, as they are key players in prevention and detection.

"For example, avoiding the movement of beds and mattresses between rooms, as well as good laundry hygiene can go a long way to reducing movement of pests. Put-up beds and even cots are often moved in and out of store and can carry bed bugs from an infested room to a previously uninfested room," concludes Clive.

Treatment options

Bayer technical manager, Richard Moseley, emphasises that once identified bed bugs can be treated effectively, but he stresses it is important to consider the severity of the infestation.

"Bed bugs can take up to three to four months from the egg to the adult stage when they can be detected. By this point they could have spread to more than one room so pest controllers need to advise customers that it may be worth treating adjacent rooms, or even a whole corridor," he explains.

The most common types of treatment are heat-based and insecticide-only.

Heat-based regimes can involve placing the bed, headboard and curtains inside a purpose-designed tent, which is then heated to 55°C to kill the bed bugs; a similar treatment can be carried out by heating the entire room to the same temperature.

"Using heat, bed bugs can be killed within 24 hours and the room can be back in action quickly. In some circumstances an insecticide may also be applied as part of the heat treatment process," he adds.

Sometimes an insecticide-only treatment is more appropriate. Product choice depends on the surface to be treated – for example, only certain active ingredients can be applied to mattresses.

"When it comes to chemical control, I would recommend starting with a carbamate such as Ficam W, followed seven to 14 days later with a pyrethroid such as K-Othrine WG250, or AquaPy, to help prevent re-infestation.

"Application should be very thorough and aim to get into all corners and crevices of the bed and the room and the manufacturer's full recommended dose should always be used," he says.

"Often for a severe infestation, a third treatment using a carbamate will be needed. Insect Growth Regulators (IGR's) should also be considered in the treatment process to help with long term control of infested areas."

In addition to residual sprays, he points out that another non-chemical option is a desiccant dust, applied to places such as into voids and under skirtings. Desiccant dust damages the insect's cuticle causing it to dry out and die.

Finally, it is worthwhile re-inspecting the treated rooms approximately three months after treatment to ensure all the bed bugs have been controlled.

Richard Moseley's top tips for bed bug control



Richard Moseley, technical manager for Bayer

Bed bugs may carry some level of resistance against certain active ingredients, so rotation of insecticide families is essential for effective control and resistance management;

- Carry out a thorough survey of affected areas to ensure you understand the full extent of the infestation, as they can be more widespread than first thought;
- Always read the label of any insecticide and apply according to the manufacturer's instructions, especially when working with mattresses, as these can only be treated with a select few products;
- Use a bendiocarb-based insecticide first, as these don't 'flush' insects away from the treatment area. If you need to, follow up with a pyrethroid, as any remaining bugs will be flushed onto a surface by the residual effects of the first treatment;
- Pay attention to cracks and crevices (where bed bugs may hide) when applying any insecticide to increase the chance of it being picked up by the pest;
- If using a heat treatment, consider applying an insecticide to the floor of the area being treated as bed bugs may drop to the cooler floor to escape the heat.



WaspBane is the only high efficiency wasp trap on the market proven to reduce risk by up to 97.5% compared to other traps.



Wasp persistence cross over studies have shown that that unlike other traps, WaspBane reduces the number of wasps persisting in the area to be protected.

See the videos; visit http://www.waspbane.com/?page_id=132



Innovators of IWM
 (Integrated Wasp Management)
 Tel.: 01480 414644
info@waspbane.com
www.waspbane.com



A roaring success for Abate

With multi-talented skills, pest control companies can often get called in to help in some pretty unusual places. But having to deal with lions is certainly an unusual request!

This was just the case for Norfolk-based Abate Pest Management when they received a call from Bartech Technical Services, a commercial kitchen and ventilation specialist company located in Norwich. Bartech had a very specific request from one of their clients, Africa Alive! – a walking safari park located in Kessingland, just south of Lowestoft in Suffolk.

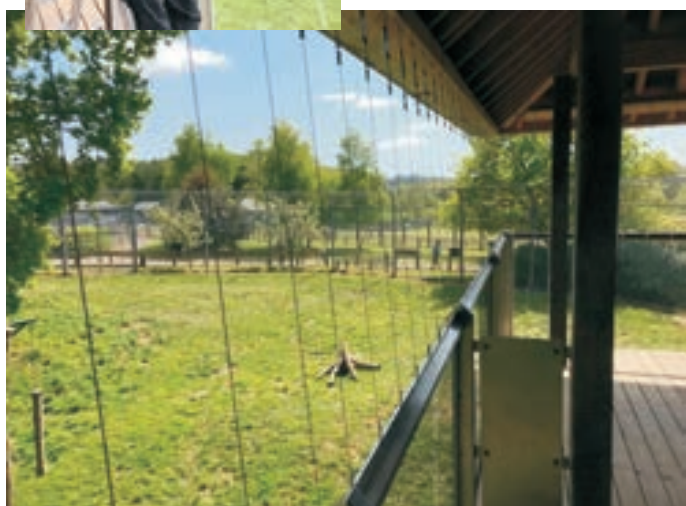
With not a pest in sight, the challenge was to install a safety solution at the Lookout Lodge viewing point where visitors can get a bird's eye view, with all the atmosphere and smell, of the magnificent lions.

Jon Blake, managing director of Abate said: "We were asked to work with Bartech, to look at a solution for Africa Alive! The park didn't want to glass or screen off the lion viewing platform, so we were asked for tensioned wires which we would usually use for bird control. The thought process behind this solution would provide a physical barrier between the visitors and the lions. We set up a small trial and it was successfully approved.



"Bartech manufactured fabricated stainless steel capping, which was then used to fix over the handrails with hoops to hold the tensioned wires in place. We then used long vine screws in the supporting timber frames to enable the wires to be fixed in place.

"Africa Alive! was delighted with the final solution, especially as it still allows the same atmosphere and views as before, plus it passed all health and safety tests by the zoo inspectors," concludes Jon.



QUALITY, DESIGN AND PRICE.
The three main reasons to contact Europe's largest producer of high tech bait stations.

plastdiversity

neptuno
rod bait station

- ✓ Double lock for safety
- ✓ Removable bait tray inside
- ✓ Bait rod to insert blocks
- ✓ Designed to use glue board G2 and drinking through
- ✓ Opens against walls
- ✓ Sturdy, made to last

WITH KEY

Kyzone
PEST CONTROL PRODUCTS

www.plastdiversity.com
CONTACT US FOR MORE INFORMATION:
COMERCIAL@PLASTDIVERSITY.COM

Run rabbit run!

Professional rabbit controller, Simon Whitehead of Suffolk-based Pakefield Ferrets describes how he has carved a successful niche for himself in today's technological world using nothing more than traditional methods.

European rabbits (*Oryctolagus cuniculus*) are fantastic creatures. They are resourceful, resilient, adaptable and they breed like... well rabbits. This year I am not alone in experiencing a bunny boom where almost every doe appears to be in kit or nursing a litter and in some cases, both. A stark contrast to 2017 when rabbit haemorrhagic disease (RHD2) temporarily curtailed such rapid rate of reproduction. The sight of rabbits frolicking in the sun may have many rubbing their hands together, charging their phones and waiting for the deluge of calls for the removal of *Watership Down*.

Rabbits are thriving in challenging areas and as their warrens host a number of insect and mammalian life, not all of these problems can be overcome easily with the use of aluminium phosphide, especially with growing concerns regarding its use. They are feeding, or making their warrens, near roads, under buildings, footpaths, construction sites and in sensitive natural and industrial habitats, capitalising on the security and harbourage these sites offer; Sites which simply cannot be gassed because of the environmental impact or safety and legal issues. So, then what?

For this reason I am finding myself dealing with many more specialist and sensitive rabbit problems, often called upon by pest control companies both large and small, who hold the pest control contracts but simply do not have the time, expertise or inclination to not just look at the problem, but cure it.

Whether rabbits are causing financial loss or emotional distress, they have to be managed, but to many customers this brings a new and modern moral dilemma. As a

society we appear to have little problem killing bugs, flies or rats, but when faced with a rabbit, all of a sudden conscience kicks in. Even when they realise they have to go, they want the rabbit's death to mean something, not go to waste. This is where I am in my element.

I made the decision a long time ago to opt out of mainstream pest control and dive head first into the shark tank of specialists. This not only reduces the avenue of work and revenue I can get, but it also increases the stress levels as anyone who runs their own company will be able to sympathise with. Looking for work that many will do for free is hard enough, but to work without the security blanket of insects, birds, wasps and rodents to fall back upon makes it even harder, as no rabbit problem means no pay cheques – full stop.

This is where the more traditional skills come into their own as every rabbit I harvest goes into the food chain making this a sustainable approach to an important pest control issue. It also neutralises the moral dilemma, as I don't need a chemical or



Simon Whitehead with his lurcher, Tawny

mechanical machine to do my job, just knowledge, field craft and good animals and people around me. Nothing is wasted, there is no damage to the environment and, in my opinion, there is little to argue about. This ensures that I can manage the rabbit in even the most sensitive of environments and cultures.

Of course, I get told all the while how everybody would love just to do rabbits, even to the extent of telling me how easy it is. Yet, to my knowledge, there are only two of us in the UK who rely solely on rabbit control in its many forms for our income. I agree that this is mainly down to the financial constraint and the pressure and the implications of seasonal work in a competitive marketplace. So I guess that I'm



When used correctly, the cage trap is irreplaceable in environments like gardens



The rise in popularity of the rabbit drop box has revolutionised rabbit fencing efficiency

lucky to have had the vision to carve out a media aspect to my rabbiting, so as to provide extra work when the crops are high and the sun is strong. But, this was only possible because of what I do for a job.

A passion for ferreting

It is no secret that I am passionate about my ferreting and rabbiting in general, almost obsessive, but that has kept me ahead of the game. There is so much more to my job than just keeping ferrets. I must have an in depth knowledge of the rabbit, its environment, habits, strengths and weaknesses. Over the decades I have built up my experience, learning especially from the time when I have got it completely wrong. I have to have enough ferrets to cope with the strenuous season, my lurchers must be of the right type and the tools I use must be fit for purpose. However dated others think they are, but I must also move with the times.

My philosophy is simple. When I look at other professions, cultures, sports and pastimes, if I can cherry pick an idea, adapt a way of thinking or raise my ferrets and dogs differently, if it brings the right results, I will have no problem in changing my ways. But the main difference is the way in which I think. We have to admit that to some of our customers, emotional distress far outweighs financial loss in a large majority of cases, so I must be sympathetic as well as professional in my appearance, outlook and of course, results. I must use methods that are as adaptable, versatile and efficient as myself and not forgetting being sympathetic to the wishes of those in charge of the land on which I am working. Each method can be combined and tailored to the request of the landowners or the land itself. Sites of scientific interest, nature reserves, construction sites, archaeological digs, are no problem with the right mindset.

How do I deal with the variety of problems? The majority of my work is ferreting, often on an industrial scale with help of the human variety. This enables me to directly manage the population irrespective of outside interferences, unlike night time shooting with night vision or thermal imagery. If a human or fox visits the land, the rabbits will scarper and this sometimes make this method not as efficient, although, numerically, by using a silenced rifle I can harvest larger numbers over a greater area. I also use trapping alongside my other methods. I have miles of rabbit fencing protecting crops, paddocks and property and on the large majority of them I use rabbit drop boxes. A fantastic method that works whilst I sleep. Cage traps are another

method that is now back in vogue. These are all ways of harvesting clean rabbits whilst doing your job.

In a similar vein to a lot of professions, there is a fine balance in knowing what to use, where, how and when. This is the difference between success and failure. In a technological obsessed world, many will find it hard to digest that a profession dating back hundreds of years is still relevant in the 21st century but it is and it also keeps the customer happy. And we all know that is the most important skill of all.

Caught, now cook

To discover how you can prepare, and then cook, the rabbits you have caught refer to the recently published book by Simon Whitehead and Scott Rea – *Ahead of the Game*. See page 42 of this issue.



There are ferrets and then there are great working ferrets!



To get the most from these traps it is essential to pre-bait the affected area



Because ferreting uses no toxins and is species specific i.e. it controls only rabbits, we find ourselves asked to clear rabbits from motorways to moors!

The Next **EVolution** of Bait Stations



ONE KEY, ENDLESS SOLUTIONS

What does Tier 1 mean?

In order to receive this distinction from the U.S. Environmental Protection Agency (EPA), a bait station must pass EPA-established protocols that demonstrate tamper-resistance to both children and dogs, as well as possess performance features for weather resistance.



What are the tamper-resistance requirements for children?

Testing protocol requires a testing panel comprised of a minimum of 50 children aged 42 to 51 months being unable to gain access to any station.

What are the tamper-resistance requirements for dogs?

A minimum of 12, young and healthy dogs weighing at least 20kg, are provided unrestricted access to a bait station for at least 2 hours. A station will only pass if all 12 dogs are successfully kept from accessing the bait.

Products **EXPRESS**

Products **AMBUSH**

Products **CIRCUIT**

Products **MOUSE**

Products **LANDSCAPE**



THE WORLD LEADER IN RODENT CONTROL TECHNOLOGY®

www.belllabs.com | emea@belllabs.com

What makes a successful pest servicing business?

In 2018 **Pest** teamed up with market research specialists, Research Engine, to run the eighth National UK Pest Management Survey.

As a result, looking at the data supplied by **Pest** readers at the sharp end of pest control, we have gained an insight into what makes a successful pest management servicing business.

Research Engine's Chris Horne explains: "We can see in our data on the self-employed and company pest controllers that there are some common factors behind those that are growing turnover and profit. This is not completely black and white but, for sure, if you are 'succeeding' then you are significantly more likely to:

- Be longer established;
- Be longer in the job;
- Have taken on a new employee in the past 12 months;
- Spending more time on commercial locations, less on farms;
- Be optimistic about your prospects;
- Be concerned about poor professional rodent control practitioners;
- Be a BASIS PROMPT member;
- Be a member of a trade association.

"So if you want to succeed, The above is a checklist that is proven to work!"

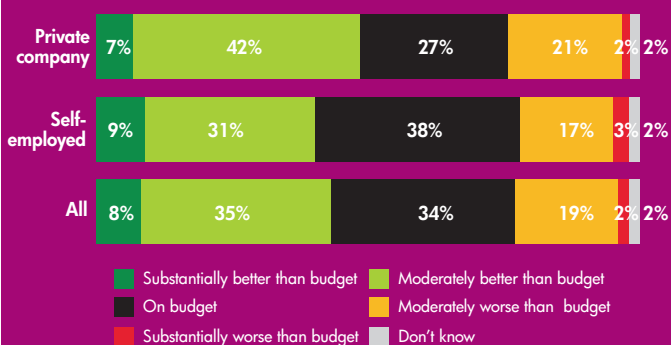
On the contrary, there is a group who are struggling with regard to turnover and profit. They are significantly more likely to:

- Be established for a shorter time;
- Be less likely to be in a trade association.

Both groups are involved in treating the same range of pests but they are serving a different spectrum of locations and clients.

Profitability 2018

Thinking about the previous 12 months what is the overall profitability for the business compared with the budget that you planned



Pest Test 58

Also
online

BASIS has made two PROMPT CPD points available if you can demonstrate that you have improved your knowledge, understanding and technical know-how by passing the **Pest Test**. So, read through our articles on Eyes fixed on China (pages 18-19), Can IPM help prevent insecticide resistance? (pages 25-27), Bed bugs bad for hotel reputations (pages 29 & 31) and Be proactive to keep bed bugs undercover (pages 32 & 33) and answer the questions below. Try to answer them all in one sitting and without referring back to the articles.

SEND COMPLETED QUESTIONS to: **Pest** Magazine, Foxhill, Stanford on Soar, Loughborough, Leicestershire LE12 5PZ.

We will mark your **Pest Test** and, if all answers are correct, we will enter the results onto your PROMPT record held by BASIS.

1	How much does Rob Fryatt estimate the Chinese pest control market is growing per year?	
<input type="checkbox"/>	a) 10-15%	<input type="checkbox"/> c) 25-30%
<input type="checkbox"/>	b) 20-25%	<input type="checkbox"/> d) 30-35%
2	What is the minimum heat required to kill all stages in the life cycle of a bed bug?	
<input type="checkbox"/>	a) 30°C	<input type="checkbox"/> c) 50°C
<input type="checkbox"/>	b) 40°C	<input type="checkbox"/> d) 60°C
3	Which of the following insecticide classes can you use in the USA but not in the UK?	
<input type="checkbox"/>	a) DDVP	<input type="checkbox"/> c) IGRs
<input type="checkbox"/>	b) Pyrethrins	<input type="checkbox"/> d) Pyrethroids
4	What % of leisure travellers could correctly identify a bed bug?	
<input type="checkbox"/>	a) 23%	<input type="checkbox"/> c) 28%
<input type="checkbox"/>	b) 25%	<input type="checkbox"/> d) 30%
5	What % of business travellers said they would be very unlikely to book a hotel that had an online report of bed bugs?	
<input type="checkbox"/>	a) 41%	<input type="checkbox"/> c) 61%
<input type="checkbox"/>	b) 51%	<input type="checkbox"/> d) 71%
6	What is the minimum temperature Clive Boase says bed bugs are active from?	
<input type="checkbox"/>	a) 2°C	<input type="checkbox"/> c) 20°C
<input type="checkbox"/>	b) 12°C	<input type="checkbox"/> d) 22°C

Name: _____

Organisation: _____

Tel: _____

Email: _____

PROMPT account number: 200 _____

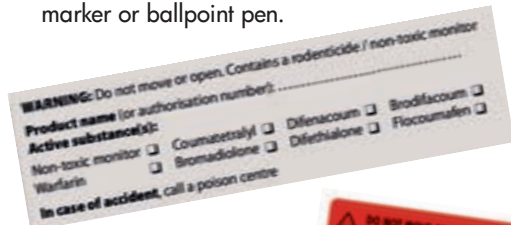
Label that station

As rodenticide product authorisations come through the latest renewal process a new requirement to label rodenticide bait stations is being specified.

Eventually all rodenticide product labels will carry this requirement. But, as Killgerm's Dr Matt Davies explains: "Because the products were first authorised at different times, the renewals, which happen every five years, are coming through in dribs and drabs. Labelling bait stations in this way will be something extra to do for many users."

To meet this need both Killgerm and 1Env have produced new bait station labels.

Both are waterproof, resistant to UV-light and can be written on with either permanent marker or ballpoint pen.



www.killgerm.co.uk

www.1env.co.uk

Phostoxin & Talunex back on labels



The suspension of the approval of aluminium phosphide for the non-agricultural control of Norway rats has been lifted.

This means that pest professionals holding the correct qualification – that's the *Level 2 Award in the Safe Use of Aluminium Phosphide for Vertebrate Pest Control* – can, once again, use Phostoxin and Talunex for rodent control.

However, additional label requirements covering risk areas and gas level monitoring have been introduced. These are outlined in the updated 2018 version of the *RAMPS UK Code of Good Practice*, see page 42 in this issue.

At last! Neo arrives

At least a year after the first prototype was seen on the Pelsis stands at exhibitions around the globe, the bait station incorporating the patented Project Neo technology has arrived – stocks are in and available to buy.

Describing Neo, Pelsis says it uses the rodent's thigmophilic behaviour, to overcome the effects of neophobia. Or, put into layman's language, it uses a rodent's love of touch to navigate its way around, coupled with its extreme, or irrational fear, of anything new or unfamiliar.

To meet this challenge, the Neo station has an open entrance which allows the rodent to keep its paws in contact with the floor the station has been placed on. At the same time the rodent's body and whiskers remain against the vertical surface, meaning they enter the station without hesitation.

Not getting lost in the features – the benefit is, explains Pelsis, that rodents will enter this bait box and so get to the bait, considerably quicker than they will with other boxes.

It is recommended that Neo stations are secured against a vertical surface.

As an introductory offer, all Neo stations will come with a unique wall mounting bracket, free of charge.

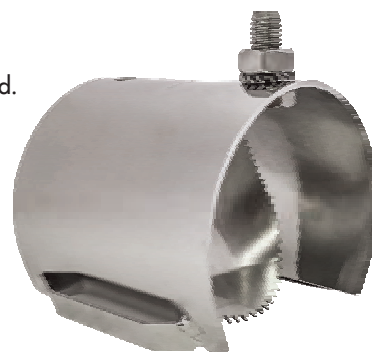


www.edialux.co.uk

Budget friendly for sewers

From 1env Solutions comes their new Rotech Drain Guard. This is billed as a budget friendly alternative to their already available and popular Rotech Rat Blocker.

The four inch diameter drain protector prevents rodents from entering properties via the sewers. It is made from stainless steel with interference guides on the outside, so as to ensure a snug fit in the sewer pipe.



www.1env.co.uk

The strong arm of Rotech

Joining the Rotech range of products from 1env Solutions comes the metal Rotech Sentry bait station.

It is a high quality, extremely strong and versatile metal rodent bait station with removable plastic liner that accommodates all bait types, as well as being able to hold a snap trap.

This station has been designed with the operator on mind, meaning it's easy to use, secure, quick to service and easy to clean, says 1Env.

It comes in three discrete colours to choose from – green, light and dark grey.



www.1env.co.uk

Rapid and broad spectrum knockdown

Presented as an ultra-low volume concentrate, Mostyn PTP 15 ULV offers a broad spectrum of activity and rapid knockdown against a wide range of flying and crawling insects.

It is formulated from two pyrethroid active ingredients: tetramethrin and 1R-trans-phenothrin, along with the synergist piperonyl butoxide (PBO). This product can be used in a wide variety of areas and comes in both a coex and microgen bottle.



www.hockley.co.uk

101 ideas

Here in the **Pest** office we were sent in advance samples of the Gorilla pads – the pad attached to the insert with this magazine.

So we have had time to look them over. Although marketed by Futura as a means of attaching bait boxes and insect monitors to difficult spots, we can see 101 additional uses for these super sticky devices!

There's now no need to lose your mobile phone, just pop it onto the pad whenever not in use. In your office you can attach your day's 'to do' list to it. And, in your van the uses are endless....

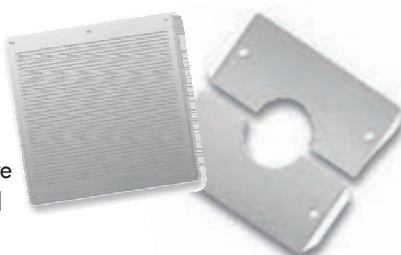
Take a photo of any bright ideas you have and send them in to editor@pestmagazine.co.uk Futura will be happy to reward the brightest or most inventive idea with some more pads!



www.futura.co.uk

Keep rodents out

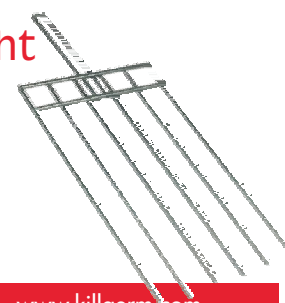
With the cooler months upon us, rodents will be keen to find a way into warmer, cosier surroundings. Gaps around badly fitted pipes are a prime target. Both manufactured from aluminium, pipe proofing plates and mouse proofing grills stop rodents in their tracks.



www.killgerm.com

Corralling once caught

Once caught in a trap, the captured animal often needs to be ushered to one end for either transportation via another cage or despatch. The KC89 trapping comb, made from 6mm zinc plated steel is just the job. It is suitable for squirrel, rat and feral cat cage traps.



www.killgerm.com



PelGar International

Leading the way in **Global pest control**

PelGar International Ltd.
Unit 11-13 Newman Lane
Alton
Hampshire
GU34 2QR
United Kingdom
Tel +44(0)1420 80744
Email sales@pelgar.co.uk
www.pelgar.co.uk

THE PROFESSIONALS CHOICE FOR BEDBUG CONTROL.

The unique blend of active ingredients, including the insect growth regulator pyriproxyfen, makes Cimetroxol the No. 1 choice for pest control professionals across the globe.
Avoid costly callbacks, use the best first time.



Use bioicides safely. Always read the label and product information before use.

Free training material

The Campaign for Responsible Rodenticide Use (CRRU) has made a raft of educational material available as part of its support for the UK Rodenticide Stewardship regime.

Topics covered are:

- Exposure of wildlife to rodenticides;
- Direct bait application in burrows;
- Environmental risk assessments;
- Changes to classifications and pack sizes.

Each module includes detailed notes and some offer suggested additional reading. More are in the pipeline.

Obtaining a training-based certificate of competence is not seen as a lifetime pass says Dr Matt Davies, who leads the stewardship training & certification work group: "Participation in continuous professional development (CPD) is not a condition for proof of competence to purchase stewardship-label rodenticides. Even so, CPD is strongly advised and supported by CRRU.

"In addition to DIY use by committed pest professionals, the modules can be used to support CPD by registered trainers with relevant stewardship-certification organisations, including BASIS, RSPH, City & Guilds and LANTRA."

Download from:
www.thinkwildlife.org/training-certification/continuing-professional-development-cpd-and-stewardship

Re-vamped RAMPS

The Register of Accredited Metallic Phosphide Standards (RAMPS) UK Code of Good Practice has been revised.

There are two key changes to the code. The first seems to be the more problematic. It concerns the identification of the 'fumigation area' and the 'risk area' and the monitoring requirements post treatment before clearance to enter the area can be granted. Detailed guidance is given in appendix 3 of the document. The second is about the cleaning of equipment after use.



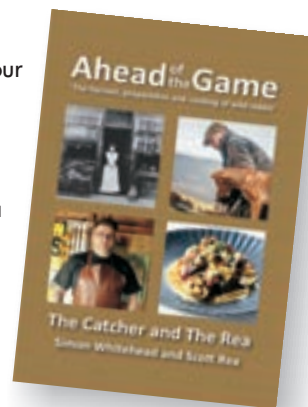
Ahead of the Game

If like Simon Whitehead (pages 36 & 37), you have caught your rabbit, now you have the chance to prepare and cook it. A cheap, very satisfying and delicious meal.

This delightful 192-page book tells you how. Not only does it describe how to dress your catch, it then goes on to give you a wide selection of recipes – everything from bunny burgers to rabbit satay with peanut sauce. The recipes, inspired by the late Keith Floyd, are provided by joint author, Scott Rea, who trained not only as a butcher, but also as a chef.

What pest controllers will also enjoy is the extensive chapter that traces the esteemed art of rabbit catching through the centuries.

Copies from www.awaywithmedia.com Price £20 +P&P



A new Acheta guide: How good is your building?

Drawing on his and his team's experience, Dr John Simmons of the Acheta Consultancy has produced this practical 32-page guide.

John explains: "During the course of our inspection work we see many examples of good and bad pest management practices. Many of the bad practices are associated with building design and construction. Pest infestations could so often be avoided if a little more thought went into avoiding building-related problems in the first place, or rectifying them appropriately when they do occur.

"This guide has been several years in the writing and will probably never be completely finished! It covers many of the more common problems with buildings that we encounter and we hope that the photos of what bad practice looks like, together with examples of 'what good looks like' will be of use to those responsible for preventing pest infestation in their premises."

Whilst aimed primarily at the food industry, it has a useful introduction covering good practice which is then followed by extensive and excellent use of photos – situations that are good, bad and totally terrible.

The publication is free of charge. Available either directly from Acheta or download your copy from the **Pest** Library.



Urban Pest Control

This 138-page book is an excellent whistle-stop tour through the pests likely to be encountered by practical pest controllers the world over. It is heavily illustrated in full colour to act as a useful tool for both trainees and experienced operators.

It contains simplified identification diagrams, vital prior to any sort of treatment. Biological information is given for each pest and the business of controlling pests is explored by discussing trends and methodologies, pest control tools, sustainable pest control and, usefully, tips on marketing.

Details are given on the latest formulations. There are sections on handling pesticides and how to read, or more importantly understand, product labels. Some useful charts drawing together data, in easy to digest tables, for e.g. the toxicities of most of the commonly used active ingredients, are also included.

The book is written by pest expert, Partho Dhang, an independent consultant based in the Philippines. It is an excellent and practical guide, yet not so detailed as to be overwhelming. Published by CABI. ISBN 978-1-786395146. £17.99 less a 10% online discount.

www.cabi.org/bookshop/book/9781786395146



Diary dates

26-29 September 2018

FAOPMA Pest Summit

Shenzhen Convention & Exhibition Center,
Shenzhen, China
<http://www.cPCA.cn/thems/index/1.html?acid=153>

16 October 2018

CIEH Pest Control Conference: Safeguarding Public Health

Chartered Institute of Environmental Health (CIEH) Head
Office, Chadwick Court, 15 Hatfields, London, SE1 8DJ
www.cieh.org/events/2018/pest-control-conference-safeguarding-public-health/

23-26 October 2018

PestWorld 2018

Walt Disney World Swan and Dolphin Hotels,
Orlando, Florida FL, 32830
www.pestworld2018.org/

7 November 2018

PestTech 2018

Arena MK, Stadium Way, Bletchley, Milton Keynes MK1
1ST <http://npta.org.uk/pesttech/>

14-16 November 2018

Parasitec 2018

Paris Event Center, 20 Avenue de la Porte de la Villette,
75019 Paris, France www.parasitec.org

15 November 2018

SOFHT Annual Lunch and Awards 2018

The Brewery, 52 Chiswell St, London EC1Y 4SD
www.sofht.co.uk/events/annual-lunch-and-awards-2018/

Need to claim CPD

If you're collecting Continuing Professional Development (CPD) points as a member of BASIS PROMPT then the number you need to claim the two points available for reading **Pest** magazine throughout 2018 is: **PC/62676/18/g**



Pest Control Officer

£27,093 to £29,188

Permanent, full time, 36 hours per week

Location: 5 Pancras Square

Alternative flexible working options available/
open to discussion

25 days holiday (27 days after 5 years' service)

The Role

Camden is focused on creating the conditions for people to lead high quality and fulfilling lives. We are committed to delivering frontline services in an efficient and professional manner reaffirming our responsibility to quality of life for our communities.

As a Pest Control Officer within Environmental Health, Business and Consumer Services your focus will be to deliver pest control treatments, carry out drainage inspections and provide advice and guidance to customers.

About You

We are seeking a highly motivated Pest Control Officer to join our busy Environmental Health team. You will:

- hold a professional qualification in pest control
- hold a valid and full UK driving licence with no major convictions
- have good knowledge/understanding of the legislative framework relevant to pests and drainage issues
- have the ability to carry out inspections relevant to the work area; on occasion, outside normal core working hours
- have good observational and investigation skills, including identification of pests and other insects
- an organised approach to your own workload whilst dealing with conflicting priorities
- able to work with other services and provide a customer service focused approach.

To apply for the role and for more information, please search 'Pest Control Officer 180000RE' via www.camden.gov.uk/jobs

Closing Date: Monday 24th September 2018, 23:59
Interviews to be held: Wednesday 3rd October 2018 (candidates must be readily available on this date). Interview invites will be sent directly to the email address provided on your application – please ensure you check junk folder).



Killgerm®

You know when
you're in safe hands!

www.killgerm.com

Bird Free® passes with flying colours!



® 小島 **BIRD FREE**



Protecting the
urban environment

Order now

Call us on:

+44 (0) 1924 268420

BIRD FREE® IS BACK!!

- Ready to use dishes
- Quick, easy, mess-free installation
- Making working at heights safer and easier
- Firm texture enables use on pitched roofs and angled surfaces
- Discreet low profile dishes
- Keeps pigeons away from structures without harming them
- **NOW WITH HSE AUTHORISATION**