

pest

The independent UK pest management magazine

Resistance rise explained

Issue 65
October & November 2019



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General Licences?



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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.

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Make time to make plans

For the past month the office calendar has been reminding us that 'A goal without a plan is just a wish.' This quote, now attributed to the French writer, Antoine de Saint Exupéry (1900-1944), is just as true today as it has ever been.

And yet, in our fast moving 21st century world it's all too easy to find an excuse not to plan. Thinking time is now at a premium. Gone are the days when driving between jobs provided some quiet time. Hands free SmartPhones have put paid to that. Phone calls, email and social media messaging place almost constant demand on our time.

Assuming one of your goals is to succeed in the pest management industry a good place to start is by planning your trip to PestTech – take a look at our preview on pages 21-23 and prioritise which companies you need to visit, which talks are most relevant and whether there are any business meetings you might want to set up with other visitors.

If you are planning to get into bird work, as many in our survey indicated (see pages 28 & 29), you ought to read the update on General Licences (pages 10 to 12). And, for those who do rodent work you might need to re-plan your approach after reading about resistance (pages 13 to 15) and the latest US observations on rodent behaviour (page 27).

Our attention now turns to PestWorld in San Diego from where Frances will be reporting and, of course, we're already planning the next issue!!!

Frances Helen

Interpreting the news at www.pestmagazine.co.uk

Gold for bee suit

BBwear from Truro waltzed off with the gold medal first prize in the inventions category at the recent World Beekeeping awards held during Apimondia 2019 in Montreal, Canada in early September.

The company beat 18 other entries from around the world for its virtually sting proof, yet ventilated, BB bee suit. A delighted James Bright of BBwear said: "We are over the moon to win this award. The suit is proving a major step forward in clothing, keeping the wearer cool in the summer months yet still offering the very best protection."

The very same suit has also been nominated for the 2019 Best Product Award – will it win that too?"



Steve Bright (centre) and his brother James (right) receiving their gold medal award at Apimondia

Level 3 success for Pest Solution

Pest Solution is thrilled to announce the qualification of its first cohort of candidates to complete the RSPH Level 3 Award in Pest Management training. The group of four included two technicians from Pest Solution, one of which was Elodie Limer, the daughter of managing director, Graham Limer. Elodie, who joined the company in 2017, was absolutely delighted when she found out that she had passed, saying: "It was a huge relief to get to the end of all the assignments, but I have to say the research and work towards it was very interesting and rewarding. It has definitely helped me to progress as a pest controller. It was great to have the support of my dad, the other candidates and my assessor."

The RSPH Level 3 Award in Pest Management replaced the old diploma version in 2016 and Pest Solution, based near Bury St Edmunds in Suffolk, is one of only six centres in the UK registered for this training course. Although a relatively small company, half of the technicians now hold this sought-after qualification. This will allow Pest Solution to expand audits and senior person inspections to their own BRC clients and offer a service to other servicing companies that lack suitably qualified staff.



Father & daughter. Elodie Limer proudly shows her Level 3 certificate to dad, Graham

Social media campaign for bees



Sean Mclean (left) and Paul Greaves (right) of Key West Pest Control with Kirit Gordhandas from Leeds Beekeepers Association

A letter from a member of the public relating details about the brutal killing of a nest of bees has sparked Leeds-based Key West Pest Control to start a social media campaign to stop people taking matters into their own hands.

The heartfelt letter, sent to Key West, contained a disturbing account of a Nottingham homeowner killing innocent bees after being refused treatment from a local pest control company. In the letter, the author describes how the individual carelessly used bleach and hot water to deal with the 'problem'.

An avid bee-fan, the author of the letter approached the company in the hope that they would support her efforts to eliminate the unnecessary harming of bees and raise awareness of their importance.

Key West CEO, Sean Mclean, said: "Everybody knows that bees are in danger and the thought of people harming them doesn't sit right with me. I know how important they are to the environment and I want to do more to help."

Sean and his team have now committed to a campaign via social media and their website to educate members of the public ahead of the bee season next April. Sean said: "We're hoping that with the power of social media and blogs we can reach people across the UK and encourage more of them to support the cause."

Key West currently refuses to respond to call-outs from concerned customers who believe they have a bee problem. In an attempt to protect them, they instead advise all concerned parties to contact the Leeds Beekeepers Association (LBA) to arrange their safe removal.

Look what arrived!

Congratulations to Metex, of Rat Blocker fame, for their gift of three bottles of amusingly named lager and beer which recently arrived at the **Pest** office. We do like people with a sense of humour!

Rumour has it that further supplies of this liquid refreshment will be making an appearance on the Metex stand at PestTech. Check it out yourself....



Help! I've been bitten

Here in the **Pest** office we field a lot of, shall we call them, unusual phone calls. We might write about pests, but we aren't experts! So the other day the phone rang and this polite voice introduced himself as one of our readers and asked the question: "What do I do? I've been bitten by a false widow spider."

Good question. Especially as reports of false widow spiders are getting increasingly common. The caller was Tom Waugh of All Clear Pest Control based in Enfield, London. A sole trader for over 15 years, one of Tom's contracts is the power station down on Tilbury docks. He'd been checking his rat bait boxes in a very cobwebby area and was wearing suitable protective clothing. But, once back at his van, he was aware of something climbing up the inside of his sleeve, then a sharp pain.

Upon investigation out fell a false widow spider which soon met its end squashed on the floor – after it had been identified of course. Tom described the pain as sharp and it increased over time with a two inch swollen area appearing on his shoulder blade.

We are pleased to report that Tom lived to tell this tale. He took himself to Chase Farm A&E and was given antihistamine tablets. Fortunately the bite wasn't infected so antibiotics were not required.

In this situation, Tom didn't panic but was obviously concerned and wasn't sure what to do. The larger pest control companies have data sheets covering this eventuality, plus there is usually someone else to ask. But for the smaller one-man band operations, you are on your own. The moral of this story is, should the same happen to you, seek immediate medical attention unless you carry your own supply of antihistamine tablets.



Tom Waugh of All Clear Pest Control

Keeping on the right track

London-based AGS, a provider of facilities management services to Transport for London (TfL), has completed the implementation of JobWatch, a mobile workforce system developed by BigChange located in Leeds. The system, which sees field technicians equipped with tablets connected in real time to a control centre, has been rolled out initially across the company's fast-expanding pest control division.



AGS technicians, Peter Lengthorn (left) and Chris Wickins show off their new JobWatch mobile system

"The UK pest control market has undergone some major changes in recent years and we have identified a need for small, specialist and highly mobile teams to deliver fast-response services," said David McMillan, general manager, AGS Pest Control. "BigChange provides a highly agile and accessible platform that will underpin this expansion and allow us to easily collaborate with like-minded companies nationally."

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Manage them... save them...

The roles were reversed for Wayne Gurney of Good Riddance Pest Control who found himself rescuing a seagull, rather than trying to manage it!

This came about when he was called to Bristol Registry Office to investigate a strange noise reported in the lower area of the building where the old prison cells used to be located.

Wayne realised there was a bird stuck in a chimney and set about rescuing it. He had to put his hand inside a small hole which was risky and not easy. He was very surprised to find that the trapped bird was a large common gull. He managed to rescue it and, despite being pecked, he checked it over for cuts, then took it outside to be released.

It is the first time in 15 years as a pest control technician that Wayne has had to rescue a large seagull – although he has come across much smaller birds that have needed help. He said: "It was quite an experience to rescue such a large bird. I think it could have been there for at least three or four days. Pest control is not just about getting rid of pests, we like to look after wildlife whenever we can."



£500 for best picture

The British Pest Control Association (BPCA) has put £500 up for grabs in a new photographic competition. The cash prize will be awarded to the individual who captures the perfect image of public health pest control.

The photo must be taken in the UK and can be of any public health pest or a pest management professional in action.

To enter the Best Pest Pic competition you can either tweet your image using #BestPestPic2020 or tag the BPCA on Facebook along with the hashtag.

Entries must be received by 15.45 on Friday 21 February and the winning photo will be announced at PPC Live 2020 on Wednesday 11 March. Full details on the BPCA website.

Sad news of Imogen

Readers will be shocked, and genuinely saddened, to hear of the news concerning Imogen Levenson who for many years ran her own company, Tuffnell Park Pest Control based in north London. Imogen has had to close the business due to an increasing neurological problem that is affecting her balance.

Like many in the industry, Imogen got into pest management almost by accident. She was working as a marketing planner for IPC Magazines when a family friend suggested she shouldn't waste her degrees but work for someone she knew who was looking for a field biologist. This led to Imogen being employed by two different pest control companies



Imogen Levenson in *The Ladykillers*

before taking time out to raise three children, Kitty, Archie and the youngest, Otto.

When Otto started primary school she struck out on her own, forming Tuffnell Park Pest Control. In this way she could fit work commitments around her children.

Imogen always exhibited a sharp enquiring mind when dealing with pest problems and came to national prominence in 2015 when she starred alongside other female pest controllers in the BBC 2 series *The Ladykillers*.

At **Pest** we, as many others, always enjoyed her company and she frequently appeared within our pages – either us reporting on some activity of hers, or publishing a report she herself wrote about her activities.

We will miss you Imogen.



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Go ahead for Rentokil Mitie acquisition

The Competition and Market Authority (CMA) has given the go-ahead to the Rentokil acquisition of Mitie for £40m in cash. However initial fears that the acquisition of Mitie might result in a substantial lessening of competition in the UK market place, has meant that Rentokil must divest a number of Mitie's contracts with national customers across the UK. The purchaser is the USA's ServiceMaster Global Holdings Inc which is well known globally under its Terminix brand. This deal has to be completed by 15 October. So watch out, Terminix vans will soon be out on the UK high street.

It is unlikely to be the last acquisition for ServiceMaster in Europe. No sooner had the CMA given the go ahead for the Mitie/Rentokil deal, than it was announced, on 9 September, that

ServiceMaster had acquired Normor Holding AB, a Stockholm-based pest control company. Normor has operations in Sweden and Norway and is Europe's second-largest privately held pest control company (after Anticimex) and the fourth largest in Europe.



read more
on the web
www



Celebrating the deal are (L-R) Paul Giannamore of The Potomac Company who advised Normor on the sale, Tony DiLucente (ServiceMaster) and Svein Olav Stölen, Normor CEO

Acheta goes Dutch

In early September, the sale was announced of the independent pest control consultancy business, Acheta Consulting, to Kiwa UK. The Kiwa organisation is owned by the Kiwa Group, an international Testing, Inspection and Certification (TIC) group headquartered in The Netherlands.

There are six UK business areas forming the Kiwa UK Group which is based in Cheltenham. The organisation has an ambitious growth strategy, having doubled in size in the last four years through both organic growth and by acquisition. One of the six business areas is Harrogate-based Kiwa Agri Food, a UKAS-accredited product conformity certification body with a BRC 5-star rating as a certified body. It is this Agri Food part of the group that will house the Acheta operating division.



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Another joining of forces

On the same day as the Acheta announcement, 3 September, it was revealed that London-based Thermo Lignum UK is joining forces with the Benelux multi-disciplinary conservation company IPARC (International Platform for Art Research and Conservation). Operations will continue to be based at the Chiswick address under the new name of ICM: Integrated Contamination Management. Nikolaus Wilke, a trained conservator and managing director of Thermo Lignum UK, will continue working in London and on the continent, as international business development director.

Thermo Lignum specialises in insect control, particularly in the heritage sector, using Warmair technology. The company founder Karen Roux will head up the ICM advisory board. David Pinniger, renowned museum entomologist, will also be joining the advisory board.

Four new directors for NPTA

NPTA has appointed four new directors to its board which also has a new chairman, Killgerm's Sabra Everett. The new directors are: Colin Harrison from Pelsis, Karl Robertson from H F Pest and Bird Control based in Sevenoaks in Kent, Dave Hemmingway from D H Pest Control in Nottingham and, returning as a director, Paul Burton.

This brings the total number of directors to 11. Ideally the board needs two or three more volunteers so if you are interested please email Steve on steve.hallam@npta.org.uk

New product manager at Bayer

Bayer Environmental Science has appointed Tim Peeling as its new product manager. Tim will be based in the company's Cambridge head office.



Tim has worked in professional pest control for over 15 years and brings a huge amount of experience to the team. "I spent the first ten years of my career on the ground as a pest controller at Prokill and then moved on to be a product manager at Pelsis which is where I spent the last five years," says Tim.

"I'm delighted to join the team, and I'm really looking forward to overseeing the pest product portfolio, as well as getting involved in research and development within Bayer. It'll be great to get involved with exciting new product developments," he adds.

Additional member for Sumitomo team



Kerstin Rindt recently joined Sumitomo Chemical's branded products team, based at the company's London office, in the role of business assistant.

Kerstin, who has a BSc and MSc in Biomedical Science and Business, previously worked in the marketing department at Novartis (UK). Kerstin will be a key member of the growing team, as Sumitomo looks to bring to market its long list of EU approved active ingredients and new innovative finished products to the professional pest control industry.

On her decision to join Kerstin said: "I was impressed by the vision and potential of what Sumitomo has in the pipeline. I am certainly joining at an exciting time. I feel it's a place where I can grow and develop my skills."

81 years young – Ken Vigar!

Age is no barrier for purchasing manager Ken Vigar, now in his 82 year and a valued member of the Safeguard Pest Control & Environmental Services team. His contribution to the company was publically recognised earlier this year when he won the 'Unsung Hero of the Year' award at the 2019 British Pest Management Awards (BPMA). His award was presented on 20 March at London's ExCel centre, during PestEx.

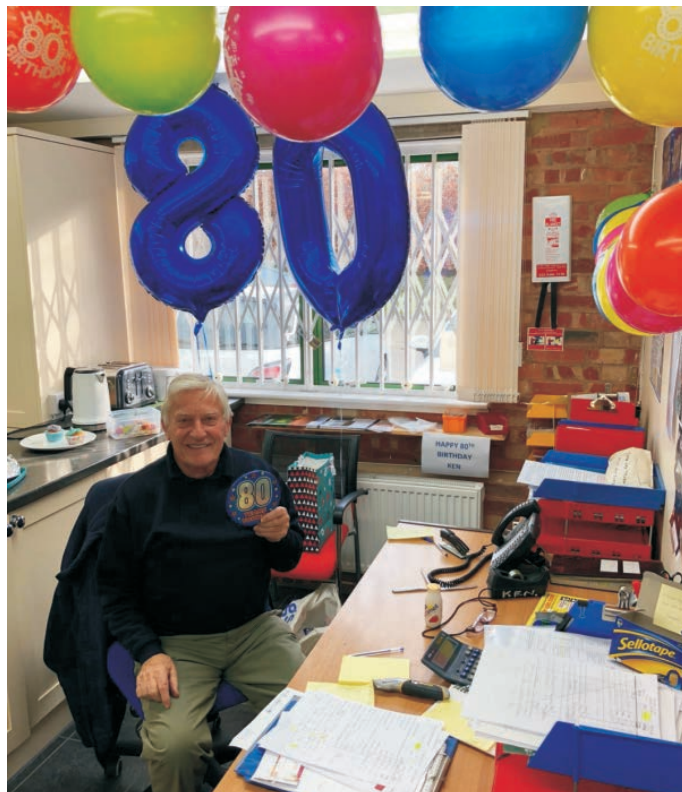
Perhaps the UK pest control industry's most senior active representative (*unless you know otherwise, do let us know*), Ken is a steadfast member of the Kent-based, Safeguard team.

Having worked at Safeguard, which covers London, the South East and the South West, for the past 16 years, Ken has played an integral role during a time of accelerated growth in the company.

Ken explained: "I had no idea I was being put forward for this award and was quite taken aback when I was given the news of my short-listing. It is amazing to think the team considers me to be so important. I truly believe we operate as a team – providing a hugely professional service and a great work environment for our staff.

"I try to do as much as I can for the business and always aim to meet staff needs. I see myself as being the engine room on the purchasing side and, equally important to me, a valued member of staff."

The award was unexpected in many ways, as Ken never dreamed of being a part of the pest control industry at all.



Ken Vigar's 80th birthday was celebrated in the office back in January 2018!



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Having taken early retirement in 2003 from his 35-year long job in the City, Ken decided he wanted to keep active and working. So, soon after he applied to a local newspaper advert from Safeguard for a part-time clerk position.



Ken Vigar with Mike Dilger and his BPMA 'Unsung Hero' trophy

Still plenty of vigour in Vigar!

His application was successful, and Ken steadily worked his way up to the position of purchasing manager across the entire business. His job now encompasses all purchasing aspects for the business – from technician to office needs.

He is a real example of how working into your later years keeps the mind and body strong. A 'true stalwart', Ken shows no signs of wanting to slow down.

Pennie Gadd, managing director of Safeguard, nominated Ken for the award. She commented: "The moment we became aware of the award category we had to put Ken forward – there is no one more deserving of this accolade. He has an enviable work ethic; if you ask him to help with something you know that you can place complete trust in his abilities. His heart is 100% in his job."

CEPA launches Initiative to boost certified businesses in Europe

On 1 October, the European pest management association, CEPA, announced an initiative designed to boost business for companies that follow an integrated pest management (IPM) approach in delivering client services.

The European standard EN 16636 and the established CEPA Certified scheme feature this integrated pest management approach. First developed and formalised by the FAO, the United Nation's food and agriculture organisation, IPM focuses on prevention first and destruction only as a last resort.

CEPA wants to encourage users of pest management services across Europe to work only with pest management firms that abide by EN 16636 (ideally certified according to the CEPA Certified protocols) on the basis that such operators are better qualified and more sustainable. It is hoped that the market will then force greater professionalisation of the sector across the

continent, given that there is no regulatory framework in many European countries to set market entry requirements and operational standards for pest managers.

The initiative takes the form of a Memorandum of Understanding between CEPA and European and national trade associations representing sectors that use pest management services. In this document CEPA promises its members will deliver high standards. In return it hopes its partners will encourage their member companies to only use certified pest management organisations as the best way to protect homes, businesses and neighbourhoods from the dangers of infestation.

Good for business

The result, says CEPA, should be more professionalism; better protection of the safety and well-being of Europe's citizens and employees; higher standards of public health and safety; and increased protection of the environment and biodiversity. And, for certified pest professionals, it should be good for business too!

The launch of the initiative took place in Brussels as CEPA gathered for a general meeting, hosted by the EU Committee of the Regions, a consultative body designed to funnel the views of Europe's urban and rural regions into the EU machine.



(Left to right) Ilaria Di Silvestre (Eurogroup for Animals), Henry Mott (newly re-elected CEPA President), Eamonn Bates (moderator), Gianluca Nurra (Coceral) and Martin Geier (Biogents) discuss professionalisation of pest management in Europe

Korea kicks-off the autumn round of events

The annual Federation of Asian & Oceania Pest Managers Associations (FAOPMA) Pest Summit began the round of international autumn events.

Organised this time by the Korean Pest Control Association, it was held at the Daejeon Convention Center, South Korea from 24-27 September.

Over 1,200 delegates, 700 from overseas, were treated to conference sessions

presented by speakers from across the region, as well as from the USA, plus there was the usual supporting trade exhibition.

Stars of the trade show were the more than life-sized models of disease-transmitting insects created by the Centers for Disease Control and Prevention (CDC), Korea.

The organisers also took the opportunity to treat their guests to some traditional Korean culture.



A 'giant' *Culex tritaeniorhynchus* mosquito



Guests were treated to displays of Korean traditional dancing at the gala dinner



Woo Soo Hong, President of the Korean Pest Control Association and organising committee chair, opened the conference

Where next in bird licensing saga?

Ever since Natural England announced the sudden revocation from 25 April 2019 of the three General Licences, this topic has reverberated across the industry. The licences revoked by Natural England, as their name implies, only covered England. However, this unprecedented scrutiny has rattled the statutory agencies and governments of both Wales and Scotland who have now come out with their own interpretations, as they too felt their legal position was unsound.

How this all started

Readers will recall that this whole saga about the status of General Licences for bird control was instigated by Wild Justice, a not-for-profit company set up in February 2019 by Chris Packham, author, TV celebrity and campaigner, Dr Mark Avery, researcher and campaigner and bird of prey expert conservationist, Dr Ruth Tingay. Their objective was to take legal cases, on behalf of wildlife, against public bodies that are failing to protect species and/or habitats.

Wild Justice has now launched several further campaigns, but their first, was the legal challenge to Natural England that the licences GL04, GL05 and GL06, published on 1 January 2019, were unlawful. On 23 April Natural England announced that the General Licences GL04, GL05 and GL06 would be revoked as of 25 April. As an interim measure individual licences could be applied for. Then, on 14 June, three new General Licences (GL34, GL35 and GL36) were put in place by Defra to run until 29 February 2020.

The irony is that Wild Justice did not ask for revocation. They



From left: Dr Mark Avery, Dr Ruth Tingay and Chris Packham are interviewed by Charlie Jacoby at the Bird Fair this August

actually requested that, once the licences expired on 31 December 2019, they be replaced with a lawful alternative. In an interview with Charlie Jacoby of the *Fieldsports Channel* at the Bird Fair on 17 August Chris Packham said: "We were never about restricting licences where human health or economic issues were at stake. All we wanted Natural England to do was introduce a system of licensing whereby the applicants could satisfy them that they had tried everything before killing those birds."

Professional pest management has been dragged into this legal rumpus almost by accident. To gauge its significance to the 'powers that be' look no further than the 33-page transcript from the one-off evidence session held by the Environment Food and Rural Affairs (EFRA) Committee on 21 May. Virtually the entire session covered the legalities and problems the revocation had caused the agricultural sector. Professional pest control received just one brief mention (Question 84).

Survey and report in Scotland

On 17 July Scottish Natural Heritage (SNH) announced its own 12-week consultation. Like England, this covers circumstances when wild birds can be controlled under General Licence. It closed on 9 October.

Launching the survey, Robbie Kernahan, SNH's Head of Wildlife Management, said: "Our role is to help wild birds thrive, but we must balance this with making sure the public is safe from health and safety risks, as well as ensuring that farmers can protect their crops.

"We have brought forward our planned consultation in light of the ongoing legal challenges in England. We want to ensure that our licences take into account the implications of those challenges and remain clear, proportionate and fit-for-purpose.

"The consultation, along with our ongoing work, will provide us with valuable

feedback – this will allow us to consider if we need to make changes to the current set of licenses for 2020."

Unlike England, Scotland made no changes to its General Licences this year.

Scientific review

In addition, SNH commissioned a scientific literature review to help to identify which bird species should feature on General Licences 1, 2 and 3. Researchers have assessed the impact evidence for listed species and for species distribution over the past 25 years. This 84-page report can be downloaded from the SNH website or from the **Pest** Library.

Of most interest to pest professionals is the conclusion reached about General Licence 3 which reads: "In relation to General Licence 3, which is issued to preserve public health, public safety or preventing the spread of disease, there was

little evidence to support the inclusion of the current species listed on General Licence 3. This is on the basis that these species host several pathogens of humans and domestic livestock and poultry. However, this is an evidence gap, where there is no or very little quantitative information on the likelihood or risk of disease transmission."



Survey now launched by Defra

On 12 September Defra launched a 12-week, online public survey to gather evidence on the control that stakeholders consider is required under the General Licences. This survey was promised earlier in the year as part of a planned review of General Licences and follows up on Defra's call for evidence this May.

Environment Secretary, Theresa Villiers, explained that the review aims to ensure the licensing system is robust, striking the right balance between the protection of wild birds and the activities people such as landowners and farmers need to carry out for specific purposes, such as protecting livestock or crops.

In parallel with the survey, Defra and Natural England will be conducting a series of workshops with interested groups.

The survey asks what General Licences for the following purposes should (and should not) cover and asks for supporting evidence:

- To kill or take wild birds to conserve wild birds and to conserve flora and fauna;
- To kill or take wild birds to preserve public health or safety;
- To kill or take wild birds to prevent serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber, fisheries or inland waters.

With a closing date of 5 December, there is a tight timetable as the three new General Licences (GL34, GL35 and GL36) expire in February 2020. Remember too, gulls (herring and lesser black-backed) only remain covered by the individual species licences which expire on 31 December 2019. Development of a new class licence ready for next year's breeding season has been promised.

Wales announces new licences



On 20 September Natural Resources Wales (NRW) announced the revocation of their own General Licences operative from 7 October 2019. As from this date the only bird species to be left on the General Licence GL002, the licence for preserving public health and preventing the spread of disease, is feral pigeon.

Gone from GL002 are carrion crow, magpie, jackdaw, rook, jay, collared dove, wood pigeon, Canada goose, herring gull and lesser and greater black-backed gulls. Anyone who needs to manage these birds will need to apply for a specific licence.

Using wording very similar to that of Scottish Natural Heritage, Ceri Davies, NRW's director of evidence, policy and permitting said: "Our licensing system must be robust and proportionate, carefully balancing the needs of wildlife and people. We believe that the new General Licences allow the lawful control of some wild birds as the legislation intended.

"As an evidence-based organisation we need to make sure that we regularly review the latest information. So, starting from next year, we plan to review the licences on a 'rolling' basis. This will include a 'call for evidence' so we are can be sure that we are using the latest evidence to make changes to the licensing process as required."



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Birdcrime report doesn't make good reading

The Royal Society for the Protection of Birds' (RSPB) annual Birdcrime 2018 report of illegal bird persecution was released on 29 August. It reveals that bird of prey persecution is still rife. Birds of prey continue to be illegally shot, trapped and poisoned. The largest number of offences, by far, occur on land managed for driven grouse shooting by gamekeepers.

Birdcrime 2018 reveals 87 confirmed incidents of bird of prey persecution in the year, but only one conviction. Victims included buzzards, red kites, peregrines, hen harriers and owls. Intelligence, and scientific data from the satellite tagging of raptors, suggests many more birds will have been killed and not found and that these figures therefore offer just a glimpse into a far larger problem.

Sixty-seven (77%) of these incidents took place in England, with 12 in Scotland, five in Wales and three in Northern Ireland. The report also identifies illegal persecution blackspots in the Peak District, North Yorkshire and southern Scotland. Incidents were predominantly recorded in these upland areas where the land is managed for driven grouse shooting.

A total of 17 birds were killed using illegal pole or spring traps whereas 38 birds were poisoned using pesticides. Where it was possible to identify which pesticide (in several cases the pesticide details were withheld) had been used, carbofuran was the most widely reported with bendiocarb only one incident behind. These were followed by aldicarb and alphachloralose with one incident each for isofenphos, difenacoum, carbaryl and diazinon, or a mixture thereof.

The summary report and related appendices for Birdcrime 2018 can be found in the **Pest** Library.



A poisoned golden eagle in Scotland (left) and a shot and poisoned buzzard in Yorkshire



An illegally set spring trap targeting birds of prey

Understanding and tackling resistance



Everybody is talking about resistance to anticoagulants in rats and mice but what is it and why is it so important? Clare Jones and Montse Talavera from the University of Reading's Vertebrate Pests Unit provide a timely refresher for **Pest** readers. As reported in the last issue of **Pest**, free resistance testing is available for many pest professionals thanks to funding from CropLife International's Rodenticide Resistance Action Committee.



How anticoagulants work

Anticoagulants interrupt the Vitamin K cycle, a natural biochemical cycle which occurs in the liver. Ingestion of an anticoagulant prevents Vitamin K epoxide from being converted into Vitamin K by an enzyme known as Vitamin K epoxide reductase or VKOR. Vitamin K is essential for the activation of coagulation factors. Without these the blood does not clot causing spontaneous haemorrhaging and death.

The development of anticoagulant rodenticides in the early 1950s revolutionised rodent control. The delayed action of anticoagulants prevented bait avoidance and meant a lethal dose would be consumed. By the late 1950s, however, resistance to these compounds was found in both Norway rat and house mouse populations. Consequently, more potent second-generation anticoagulants (bromadiolone and difenacoum) were produced and were, for a while, effective.

In the 1980s, however, resistance to these compounds was discovered and has been spreading ever since. It is only after the recent changes to product labels in the UK that the most potent second generation anticoagulants (brodifacoum, flocoumafen and

difethialone) have been authorised for use outdoors, thereby offering an effective way of controlling resistant rodents in the UK.

What is resistance? The VKORC1 gene

Resistance is the ability of an organism to withstand the effects of normally applied concentrations of a chemical. This means that resistant animals can survive doses of an anticoagulant that would normally kill susceptible animals. Resistant animals have a mutation in their genetic code, a change from one sequence of bases to another, which prevents some anticoagulants from having any effect. The gene responsible for resistance is the VKORC1 gene. Mutations within this gene change the structure of the enzymes in the Vitamin K cycle so that they block anticoagulant molecules from binding. In this way the Vitamin K cycle can continue without interference and blood can clot as normal.

Each mutation is named using a code which represents the name of the original protein, the position of the change and the name of the new protein. For example, L128S represents Leucine (L) at position 128 has changed to Serine (S). The different mutations can be seen in Table 1 overleaf.



Figure 1: Timeline showing the development of anticoagulant rodenticide resistance in the UK

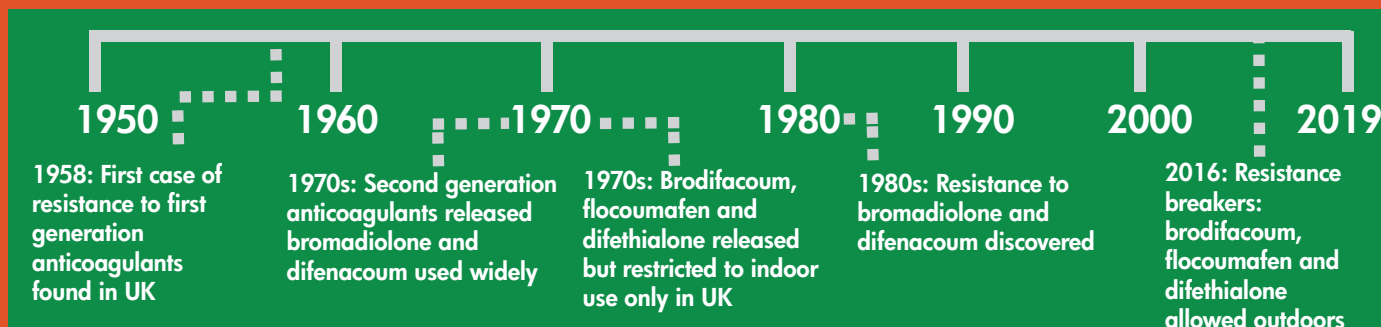
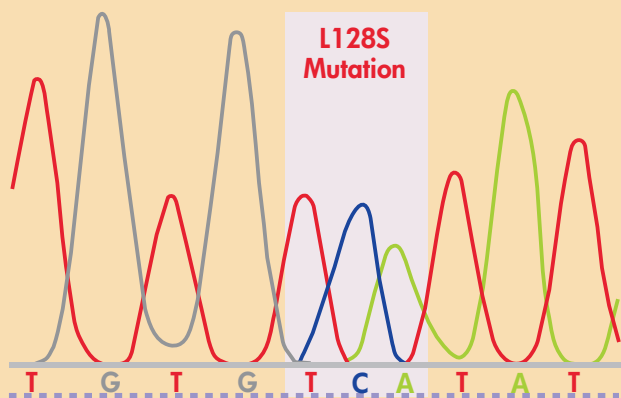


Figure 2: L128S mutation in a house mouse



The above chromatogram shows the DNA bases A (adenine), C (cytosine), G (guanine) and T (thymine) in order of how they appear in mouse DNA. In an L128S resistant mouse one of the bases, T, (in the mauve shaded area) changes to a C. Because DNA is set up in triplicates (three bases) a change in one base changes an entire protein which is why the scientists report the change as three letters. So in this case the genetic code is reported as having changed from T-T-A to T-C-A.

Successful mutations are passed onto offspring. An individual has two copies of the genetic code in a gene, one from the mother and one from the father. A fully susceptible animal has two copies of the susceptible/normal code. Resistant animals can exist in two forms – heterozygous and homozygous. A heterozygous animal has one copy of the resistance code and one normal code. A homozygous animal has two copies of the resistance code. The latter is the most severe form because these animals (with two copies of the resistance



code) have a higher tolerance to anticoagulants and will always produce resistant offspring.

The use of anticoagulants on sites with resistance exacerbates the problem. Any susceptible animals in the population are removed leaving behind just the resistant animals which then breed to produce resistant offspring. Without careful use of anticoagulants, resistance mutations are likely to spread and effective control of rodent populations will become extremely difficult.

Norway/brown rat

There are five major mutations within the UK of varying severities. The most severe, or difficult to control, is known as L120Q, previously known as the Hampshire/Berkshire strain. As its name suggests it originated in Hampshire and has since been discovered across southern England at high frequency, particularly in Berkshire. This mutation is also found across the channel in France and in Belgium as are the Kent (Y139F) and Gloucester (Y139C) strains.

These three strains confer the highest resistance to bromadiolone. They also confer resistance to difenacoum, but to a lesser extent. Brodifacoum, difethialone and flocoumafen are all effective against these resistance strains but for many years could not be used effectively in resistance management in the UK because they were restricted to indoor use only.

House mouse

For the house mouse, there are only two known resistance mutations in the UK – Y139C and L128S. Compared to their larger cousin, the brown rat, very little is known about the resistance strains for this species. What we do know is house mice possess a natural tolerance to anticoagulants and so a certain level of resilience to these poisons has been present since their introduction over half a century ago.

It is widely known that first-generation anticoagulants like warfarin should, in most cases, not be used against house mice populations. This advice is reiterated by the European Commission. Furthermore, several field trials using bromadiolone and difenacoum baits have failed against house mouse populations in the UK which contained resistant individuals. Complete control will be hard to achieve against resistant mouse populations, particularly when using bromadiolone.

Research at the University of Reading found Y139C mice to have high resistance factors against bromadiolone and comparatively low



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Table 1: Recommendations of active substance use for the different Norway rat and house mouse mutations

Active Substance	Resistance mutation (rats)					Resistance mutation (mice)	
	L128Q	Y139S	Y139F	Y139C	L120Q	L128S	Y139C
Warfarin etc							
Bromodialone							
Difenacoum							
Brodifacoum							
Difethialone							
Flocoumafen							

■ Not recommended ■ Evidence of growing resistance ■ Recommended

Table adapted from that published by the UK Rodenticide Resistance Action Committee

factors against difenacoum. This suggests that difenacoum should be effective against this strain of mouse. However, mice surviving difenacoum treatments may possess a higher tolerance which could then be passed onto the next generation, making eradication of these populations that much harder. Once again, products containing brodifacoum, difethialone and flocoumafen are effective against resistant house mice.

Resistance is spreading

To see where resistance has been identified and for guidance on which active ingredients to use please visit CroLife International's Rodenticide Resistance Action Committee website (www.rrac.info) or view the VPU resistance maps at: <https://research.reading.ac.uk/resistant-rats/uk-maps>

Resistance testing

As reported in **Pest 64**: August & September 2019, you can now discover the resistance status of both rats and mice in your area and, for much of the UK, it's a free service.

In partnership with CroLife International's Rodenticide Resistance Action Committee (RRAC), the Vertebrate Pests Unit (VPU) at Reading University is providing free resistance testing of rat and mouse tail samples.

Knowing if you have a resistant population will allow you to pick the best products to use, saving money and time as well as reducing the risk of unnecessary toxicants entering our environment.

Here's what you need to do:

- Contact the VPU to check that free testing is available in your area. Email: clare.jones@reading.ac.uk or phone: 0118 378 8329;
- Put a 2-3cm rat/mouse tail clipping into a clean plastic zip-lock bag and post it to the VPU along with the post code of where the tail came from and your email address. (Note: Site post codes are treated as highly confidential and are not published in any form.);
- The Vertebrate Pests Unit will email you back with your results usually within three to four weeks of the sample arrival.

Selecting the most appropriate solution

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Reading University research, supported by Syngenta, has clearly identified rodenticide resistance is an increasing control challenge for pest professionals. With treatment failures due to resistance liable to create significant difficulties for customers it is important pest professionals know when to turn to the resistance-breaking products such as Talon

Syngenta continues to develop the Talon brand of proven resistance breaking rodenticides, along with the tools to ensure their best use with consistently reliable results. Utilising this extended range of highly palatable baits, pest controllers can

select the most appropriate solution for any situation. Monitoring tools, such as Talon Track, help to target bait use more accurately.

Furthermore, the new Syngenta Pest App calculates appropriate dose rates and provides up-to-date advice on application techniques and tips to deliver effective results. Using the App for on-the-move recording of product use aids business management and helps assess on-going product efficacy.

Together, the use of resistance breaking rodenticides and accompanying stewardship measures, offers a practical



solution for pest control now, and into the future.

This article has been awarded two PROMPT Continuing Professional Development (CPD) points. Those who need the points can complete the special **Pest Test** on page 43 in this issue or go online at www.pestmagazine.co.uk/en/pest-test

Pest would like to thank Syngenta, the Vertebrate Pests Unit at the University of Reading and the Rodenticide Resistance Action Committee for supporting the production of this technical update on rodenticide resistance.

Getting on the right wave length

Most professional pest control companies will be using electronic fly killer (EFK) machines, especially in food handling and preparation areas. To achieve the results promoted, it's not simply a matter of installing the machine and switching it on. And, what happens if one goes wrong? If new to using EFKs how does a technician learn all about them? Or, even if an old hand, what more can be learnt?

To help their customers navigate this path, Wembley-based Bower Products has put together a unique, half-day training session. **Pest** editor, Frances McKim, went along to hear all about it on one such course being presented to Birmingham-based Pest Busters.

Some 16 eager delegates from Pest Busters, who were all gathered together for a team meeting, greeted David Haskins from Bower Products, who was to put them through their paces on the use of electronic fly killer machines. A reasonably new recruit to family-owned Bower Products, but well known in the industry, David has put together a dedicated, hands-on, half day practical EFK workshop. This concludes with a short exam and, for those that pass, eight BASIS PROMPT CPD points are awarded.

An easy morning listening?

David began by giving a resumé of the morning's workshop. Everything from fly biology to glue boards and the latest LED technology was to be discussed – an easy morning, just listening, the group must have been thinking. Using one of Bower's own Insect-a-Clear machines as the demonstration model, David set-off talking about how to service an EFK.

First step, before doing anything else, if it's a grid machine you are working on, check the grid is working. Then, turn-off and unplug the machine. All Bower EFK machines discharge their current within a split second, but, beware, some older, cheaper units can take longer to discharge, though these ballasts are no longer permitted.

Next, analyse what the machine has caught, either in the fly tray or on the glue board. Then, clean the grid, remove the bulb, change the starter, replace the lamps and turn on again. All easy peasey except, what if the lamps don't start! What now?



The three latest recruits to the team gain hands-on experience from Andie Worrall (left)



David Haskins showing the inner workings of the Insect-a-Clear machine, pointing out the ballasts and transformer

Hands-on time

At this point the morning switches to become a hands-on event. An experienced member of the team, Steve Wright, volunteers to come up and solve the problem. What he doesn't realise is David has set a little trap by mixing up some of the components. So, asks David, what might the problem be? What should you check first?

This exercise demonstrates very well one of the many problems a technician might face and how to overcome it.

Following this, three new members of the team had the opportunity to be guided over the procedures, so perfecting their own skills with EFK servicing requirements and problem solving.



Steve Wright is put through his paces establishing what is wrong with the machine



The Pest Busters team pass with flying colours, seen here with their certificates (Inset: hard at work doing the exam)

Over the course of the morning David also explained the differences between such things as the now being phased out iron ballasts versus electronic ballasts, the differences between UVA, UVB and UVC light, an explanation of ingress protection (IP) ratings plus the use and merits of using glue boards.

As to the future, LED (light emitting diode) technology was covered. David explained how this technology had advanced quite

dramatically and was likely to be the way forward. EFKs with LEDs can now out perform traditional lamps by offering energy cost savings and waste benefits (as they are not classified as hazardous waste). They also only need changing every three to four years.

Bower has very actively been evaluating the use of LED and, when they feel totally happy with all the practicalities, will be bringing out their own models. That's expected to be in the near future.

Who are the Busters Group?

Founded in 2001 by company owner David Nash, Pest Busters is part of the Busters Group, and is still located at picturesque Highfield Farm in leafy Kings Norton on the outskirts of Birmingham. David grew up on Highfield Farm which today also includes a horse livery yard.

Now employing nearly 50 staff, well over half work within the Pest Busters sector. Over the years other complimentary services have been introduced under the Busters banner, namely Hygiene Busters and Garden Busters. There is also Total Bird Control which operates nationally and, finally, Total Property Clearance whose remit is much more local.

Prior to starting the Pest Busters business, David learnt the pest control ropes working as a regional sales manager for Rentokil. Over the years the business has expanded, both organically and by acquisition. The most recent acquisition was Positive Environmental in 2017.

Managing director, Darren Brough, explained: "Our Pest Busters business now operates nationally and we strongly believe in offering a great value for money service and going that extra mile to ensure customer satisfaction. We feel the future is looking bright. Interestingly, our business is increasingly busy but not from the phone ringing, more and more is being done via social media."



Pest Busters Darren Brough



Steve Hallam, the new chief operating officer

It's a COO at NPTA!

No that's not a political revolution, it's a Chief Operating Officer (COO), although the creation of this new role could be described as revolutionary for the National Pest Technicians' Association (NPTA). The first incumbent is Steve Hallam. Known to many as the pest management expert from Nottingham City Council, **Pest** associate editor, Helen Riby, caught up with him towards the end of August, just over 100 days into the new job....

Steve Hallam's official start date as the COO at NPTA was 1 May but, of course, he already knew a lot about the association as, for a number of years, he has been (and continues to be) a board member. His knowledge of the industry gained from 25 years, latterly at Nottingham City Council, also provides firm foundations for his new role. Nonetheless, Steve is first to admit that becoming the chief operating officer for a trade association is definitely presenting new challenges.

So what is a COO? Basically it combines the role of a chief executive with that of office manager so Steve has two hats to wear. For those who don't know Steve, he's easy to spot as he quite literally stands head and shoulders above the rest. So if your going to PestTech look out for the really tall guy in the NPTA shirt! For those who have met him, be prepared, he's

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As readers will recall the 1 May start date meant Steve arrived just as the confusion caused by the sudden withdrawal, on 25 April, of the General Licences for bird management began. Communication with members had already been pretty much at the top of his priority list but the bird licensing situation served to underline just how important it is.

More recently he's been involved in the Pest Management Alliance (PMA) delegation to the Scottish Parliament on the glueboard issue. (NPTA being part of the PMA alongside the British Pest Control Association (BPCA) and the Chartered Institute of Environmental Health's National Pest Advisory Panel (NPAP).

As Steve explained: "There's a lot of volatility in our sector and change comes at a much faster pace. At the same time the number of outside organisations and agencies taking an interest is increasing. Many of our members are 'one or two-man' bands. They really need support and back-up from NPTA and they need it fast."

For this reason Steve sees the website as a vital part of the communication effort and that is being revamped. A new 'monthly' newsletter has already been introduced; the first went out in July and the second in September (August is the holiday month!). The website also now holds all the PestTech details. Plans are in place to re-introduce the 'find a pest controller' facility for the general public and there will be a separate members-only area with training webinars.

Talking about members, Steve said: "This association exists for members so I do need feedback from them. If you've got an idea or something to say then don't just pay your fees and have a pop on social media, email me or ring the office."

Equally important for the future are the free training days. Steve has attended the three

that took place since his appointment. These gave him the opportunity to meet members and quiz them on their concerns.

His view is that whilst the current training roadshows do a great job, for 2020, change is needed. He explained: "BPCA, ourselves, distributors such as Killgerm and Barretine, all run similar events and often in very similar locations. There's a great deal of duplication of effort. We should be working together to train the industry, not trying to score points off each other. If we can manage to do that we should be able to get far better geographical coverage," he added.

One of the common gripes on social media concerns the need for Continuing Professional Development (CPD). Steve is committed to CPD. He explained how the fast-changing environment in which pest control now operates was one of the key drivers behind the decision to make membership of a recognised CPD scheme compulsory for NPTA members.

A lot has changed at NPTA over the past 12 months or so. The association appointed its first technical manager, John Hope, in July 2018 and John is doing a great job supporting and training members. Since May Steve, supported by the two office administrators, Donna Alvey and Maxine Kean, has been in place meaning NPTA now has a complement of four full-time staff and is providing a better than ever service.

His final comment looked to the future. He said: "In the UK there are two associations representing two different types of pest professionals. That won't change.

"Our memberships may be different but, we have common concerns and many common goals. In the past there have been plenty of missed opportunities for NPTA and BPCA to work together. That needs to change. I have already met with BPCA's Ian Andrew and I hope that we can work together, through the PMA, to further the interests of this industry."



Maxine Kean



Donna Alvey

Dealing with disasters? No problem!

Steve Hallam has some 25 years experience in the pest management industry, but he didn't start out as a PCO. His background is in farming. He attended Nottinghamshire's top agricultural college, Brackenhurst, studying a three-year agricultural course and his first job was as a farm labourer from which he progressed into farm management.

In the 1980s he took the decision to get out of farming and applied to Nottingham City Council for a pest control job. He was interviewed by NPTA stalwart, Paul Burton. And so began his long career at Nottingham City Council.... Well, no, he only lasted five years when pastures new beckoned!

Steve moved 'down South' to a new challenge spending 12 years in disaster management training at Gatwick airport. Yes the new NPTA COO is fully equipped to take on the aftermath of terrorist attacks, plane crashes and other major disasters – so risk assessing a pest control job and running the NPTA should be a doddle Steve! That experience might also explain his considered way of doing things, although, no doubt, like us all, sometimes he will be paddling hard underneath that calm exterior.

After 12 years, Steve was drawn back to pests – they do say that once you get the pest management bug, there's no escape.

He moved back to the Midlands; first working for Ashfield District Council and then, a year later, he was back at Nottingham City Council as a senior PCO. When Paul Burton retired, Steve took on his role and went on to run the city's pest control service for 13 years.

Now, once again, Steve has felt the need for a change. The opportunity to lead the NPTA as chief operating officer is a very different challenge but it's a new chapter and one for which this gentle giant seems eminently qualified.

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PestTech returns to Milton Keynes



PestTech seems to have found a new home as this popular, one-day event, organised by the National Pest Technicians Association (NPTA), is returning for a second year to the Arena MK site in Milton Keynes. Doors open at 9.00 on Wednesday 6 November 2019.

The leaves are turning and the days are getting shorter, which means PestTech must be just around the corner!

And it's no surprise that NPTA has decided to stick with the Milton Keynes venue for PestTech 2019. The 2018 event was well received by visitors and exhibitors alike.

The venue is easy to find and close to the motorway network. There's plenty of free parking, which the previous venue, the Coventry Ricoh, had been unable to offer. Plus there's easy level access (no stairs, nor lifts for exhibitors to negotiate when building and knocking down displays).

Even the unpromising sounding 'seminars will take place on the balcony' proved a great success. The acoustics have been cleverly dealt with such that no sound from the busy exhibition below interfered with the presentations and no-one had to wear

those uncomfortable headsets! And, unlike the Motorcycle Museum, which housed the event for many years, there are plenty of seating areas for networking and meetings.

OK, there isn't anywhere for outdoor demonstrations but then, in the past, being November, these often had to be conducted in inclement weather.

What's on?

So what's on offer at PestTech 2019 in what is this event's 27th year?

The exhibition, with 46 exhibitors signed up, is at the heart of PestTech. All the major manufacturers and distributors have stands. The exhibitor list also includes organisations and companies providing support services, training and advice for pest professionals.

Pest doesn't have an official display – we will be too busy getting round the exhibition

looking for new products to report on and attending the talks for any new technical tips that we can pass on to readers. Back copies however will be available to collect sited near the main entrance/exit.

The *Pest Control News* (PCN) workshop is a regular feature. Killgerm is keeping quiet about the exact topic. There has been some talk of it being on Asian hornets but that may change, watch this space.

The workshop and all the technical seminars will be held, as last year, upstairs on the balcony. In recent years NPTA has taken the decision to limit the number of seminars so that visitors have plenty of time to get round the exhibition. This year's programme is limited to four topics – bats, bees, local authority duties and powers relating to rodent control plus a session on what the food industry expects.

Register online at:
<https://pesttech19.reg.buzz/>

CPD points available for visiting the event and for each of the technical seminars/PCN Workshop attended



Doors open at 09.00

Exhibition closes at 16.00

Arena MK, Stadium Way, Bletchley, Milton Keynes MK1 1ST

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PestTech seminars:

All seminars will be held upstairs on the balcony

Considering bats during the pest control process

The results of a recent market survey involving 200 food industry sites and 200 pest controllers.

by Jo Ferguson and Becky Wilson,
the Bat Conservation Trust,

10.00 - 10.45

The duties and powers of UK local authorities in respect of public health rodent control

What can be done when rats & mice from neighbouring property re-infest a customer's premises

by Chris Woodard, independent consultant

11.00 - 11.45

Pest Control News workshop: Topic to be announced

12.00 - 12.45

Non-lethal ways of dealing with feral bees

Practical tips on how to safely remove and re-home feral honey bees.

by Martyn Belcher and Clive Stewart,
self-taught bee removal specialists

13.00 - 13.45

What the food industry expects from pest control contractors

Thinking of moving into 'high end' food industry servicing. This will give you a good grounding on what's expected

by Phil Lloyd, independent consultant

14.00 - 14.45



Exhibitor	No:
1env Solutions	B7
Airgun Training & Education Organisation	18
Animal & Plant Health Agency	22
Barrettine Environmental Health	D1
British Association for Shooting & Conservation	D7
BASF	B4
BASIS PROMPT	1
Bat Conservation Trust	20
Bayer	B1
Beegone	2
Bell Laboratories	A3
Bower Products	8
Bradshaw Bennett	12
British Pest Control Association	21

Exhibitor	No:
Butler's Pantry	D3
C Js Birds of Prey	D2
Colin's Traps	26
CRRU	C3
Deadline Products	A2
Hockley International	C4
Huck Nets	24
International Pest Control	14
ISA-LEA	C10
Killgerm	B2
Kness	6
Lantra	29
Lodi UK	16
Metex	9
National Pest Technicians Association	C1
PelGar International	C9

Exhibitor	No:
Pelsis	D4
PestFix	A5
Pest Management Alliance	4
PestTrader	B6
PestWest	B3
RatPak	A1
Royal Society for Public Health	13
Rundlebeck Taxidermy	C12
Russell IPM	C8
Service Tracker	10
Smartipm	5
Syngenta	A4
W F Fountain Insurance	28
WaspBane	3
Water for Kids	7
Woodstream	B5





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A bee first for Martyn

Pest reader and BASIS PROMPT member Martyn Belcher has been hailed a hero after successfully relocating a giant honey bee colony found close to a Nottinghamshire school.

Martyn Belcher has been involved in pest management for more than 20 years. He runs ABM Pest Control in Mansfield and, last year, set up a rescue and advice business for honeybees in the East Midlands – Mansfield Honey Bees.

Police call

At the end of August this year, Martyn was contacted by Nottinghamshire Police after reports of a swarm of honey bees in a park close to Redgate Primary School in Mansfield.

With temperatures in the UK set to dip as



This established open air colony was a first for Martyn

autumn approaches, Martyn was keen to re-home the colony as soon as possible before they perished – or before youngsters playing in the nearby park stumbled across the hive.

He said: “Wearing my swarm collecting gear – skep, spray bottle and garden secateurs – I was greeted by an established colony known as an open air colony. This was a first for me in my 20 years as a pest control professional and five as a beekeeper.

Fantastic structure

“It is a fantastic structure to see. I gave them a squirt of sugar water so that I could assess my next move. Generally, protective clothing is not required when bees are in an untrue swarm state. However, these girls must have been in the tree for over two weeks in order to build so much comb.

“Two of the guard bees decided that I was too close and donated their rear-end stings to my face and neck! I decided to return to the colony – complete with full PPE and a purpose-fit hive into which I could directly



Martyn's purpose-built hive housed the whole colony ready for rehoming



Martyn Belcher rescues the bee colony

place the entire colony and comb, before then removing it from the park.

“If left they certainly would have perished from the cold weather ahead. They would also have created problems if mischievous children had found the hive,” said Martyn.

The hive was taken back to his Nottinghamshire home, where the new hive has been sited with other colonies.

Martyn's pest management business covers all types of commercial premises – including hotels, restaurants and pubs – dealing with common pests such as cockroaches, rodents and pigeons. But, his speciality is now bee and wasp nest removal.

Re-homing is best solution

He said: “At ABM Pest Control we try to save and re-home all the bees we come across from chimneys, sheds and roofs. I'm a keen apiculturist and a member of the Chesterfield District Beekeepers Association. It's important that we all act now – we need to save our bees. We need them before they need us.”



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Jeff Weier

Rat behaviour: What we're learning

This article is by Jeff Weier, director of technical services & training for the major USA company, Sprague Pest Solutions, part of the Copesan alliance of pest management companies. It first appeared in *Pest Control Technology*, the leading American pest management magazine. It provides an insight into rodent behaviour which we felt would be of interest to **Pest** readers.

One of the first facts I learned when I started my career in the pest management industry was that rats are neophobic and mice are not. The belief was that rats are wary of new objects in their environment while mice are more inquisitive and tend to investigate new objects.

Recently, our company has been using motion-sensing cameras and some of the new sensor systems available to the industry to track rodents. What we have seen has been a revelation regarding rodent behaviour. Yes, rats are neophobic, but we never realised just how neophobic they are. This behaviour is also much more complex than is presented in most texts. What we have learned is requiring us to rethink how we perform rodent control.

Rats are not just wary of new objects, but, in some cases, seem to be repelled by them. This phenomenon is long lasting; it may take weeks for a rat to interact with a device and, in some cases, they never will approach a new device. This leads to the question, "How do we control rodents when portions of the population will never interact with our control devices?"

By using sensor technology, we also have found that rodents will visit bait stations, yet not feed on the bait. So, not only do some rodent populations never interact with our devices, but some rodents interact in ways that we do not expect.

We have observed similar behaviours when it comes to rodenticides. There is a body of research that indicates that rodents communicate food preferences among families and, in some cases, colonies. We have all dealt with the rodents that only feed on one particular product in a grocery store. But why? With a camera I was able to capture the image, shown on the right, of two Norway rats communicating. What they were 'saying', I do not know, but communication was definitely occurring!

This behaviour and communication may result in different populations having different food preferences. Our favourite rodenticide may not be the rodents' favourite. What works in one situation may not work everywhere.

What to do?

Currently, many rodent control programmes rely on exterior devices with rodenticide or traps and interior trapping devices. In the

interest of consistency and aesthetics, we often will use the same devices/rodenticides. Several years ago, we learned about behavioural resistance in German cockroaches to baits. We now have developed programmes of different bait formulations and bait rotation schemes to overcome this issue. We also have realised how quickly this behavioural resistance can occur, as opposed to the classic physiological resistance. We may need to apply the principles we learned with German cockroaches to rodents.

There are many different designs of bait stations and traps. Stations come in different shapes/sizes and have different sized openings. Traps are made of different materials and have different designs. All devices have a place and one of the first things we can do is to try different devices in different locations to determine which are preferred by the local population. Of course, traps always should be placed out unset first



to accustom rodents to the new object, as well as to prevent trap shyness.

Rodenticides also need to be used differently. We need to offer a variety of baits to determine which one the population prefers. We need to rotate formulations, like with cockroach bait, to prevent behavioural resistance.

I have presented a few ideas to stimulate discussion, but these are not the only solutions. As an industry, we have always been at our best when confronted with challenges and, as professionals, we need to observe, learn and change to be effective when performing critical services such as rodent control.



Motion sensing cameras are providing new insights into rat neophobia



We're not sure what they are saying to each other but these rats are definitely communicating

A portrait of the UK pest management sector

In **Pest 63**: June & July 2019 we reported on the mood of the industry results from the ninth annual National UK Pest Management Survey of UK pest professionals which took place in March. Conducted by **Pest** magazine in association with market research specialists, Research Engine, the survey provides a unique insight into this resourceful and resilient industry. In this second feature we examine the structure of the sector, review where those at the sharp end see opportunities for expansion and draw some conclusions about what makes a successful pest management business.

Age profile

All of our respondents were 25 years old or above. This is not surprising. Whilst there is clearly a need for the pest management sector to attract new, young talent, the sharp-end role does require a degree of maturity to deal sensitively with the public and/or company clients. And, for those setting up as self-employed pest professionals (almost 50% of our respondents), experience is absolutely essential.

Although we have a wide range of ages, this industry is 'older' than the average for the UK working population with 38% being 55 or above and 6% over 65.

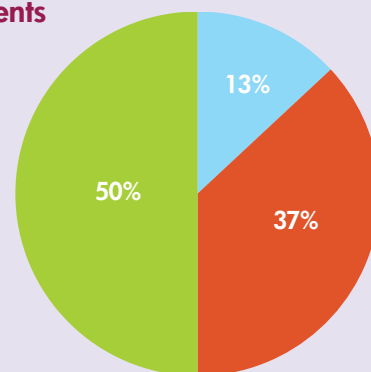
Whilst there were many similarities across the age groups there were some differences. Most notably, the under 45s were more optimistic about future prospects, especially over the medium (five-year) term.

Interestingly, those under 45 were much more concerned about the constraint 'financial pressure on households' placed on both rodent and insect control. It was the top constraint for 31% of them (rodents) and 40% (insects). The comparative figures for the over 55s were just 12% (rodents) and 19% (insects).

Types of respondents

Total = 297

- Self-employed
- Companies
- Local authorities



Length of service

It is often said that pest control gets into your blood and that those who stay for more than a couple of years are in it for a lifetime! The survey data supports this. Almost half of those taking part (49%) have been in the industry for 15 years or more, with more than a third (35%) of all pest professionals having over 20 years' service.

Gender profile

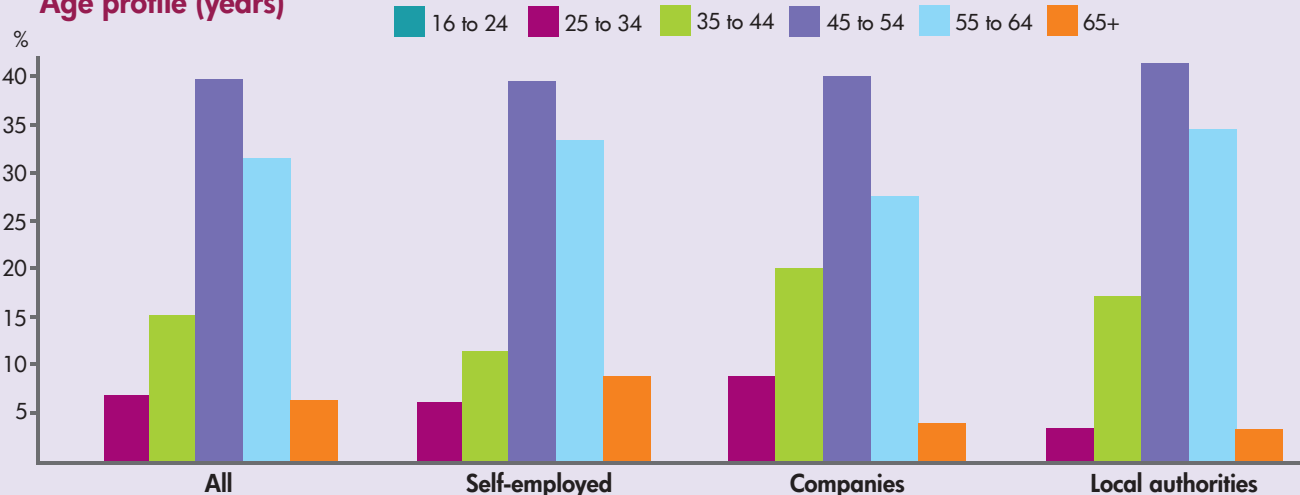
A new question for 2019 concerned gender. Almost all (99% of our respondents) were happy to report their gender. Of them 92% were male and just 8% female. This underlines the fact that this is still a very male dominated industry. We will track this proportion over time.

Qualifications, training and CPD

There is a wide spread of qualifications held across our respondents. The RSPH/BPCA Level 2 qualification is the most commonly held (by 80% of the respondents). Around 40% held one of the 'new' safe use of rodenticide qualifications.

A quite large 46% attended formal training in the past year (up from 43% last year).

Age profile (years)



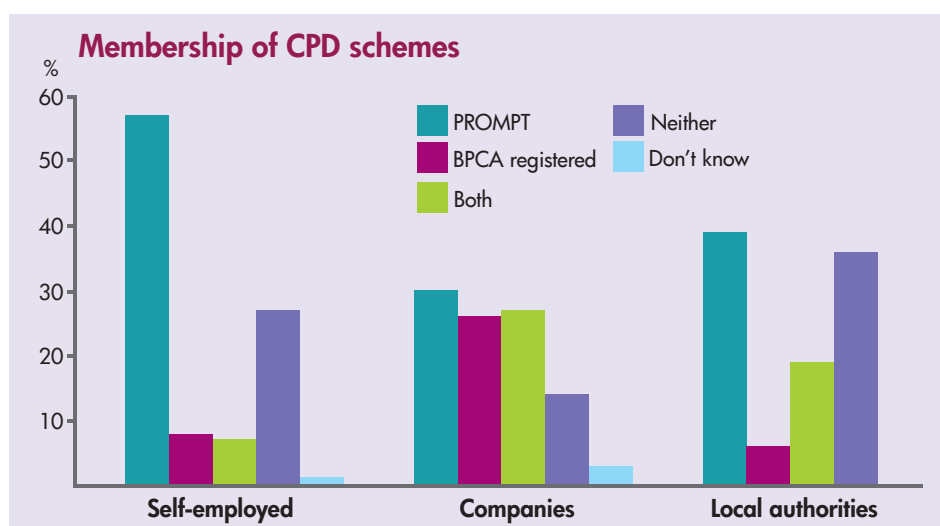
Regarding Continuing Professionals Development (CPD), 44% of our respondents are in BASIS PROMPT only, 15% are BCPA Registered only. 16% are members of both and 23% are in neither.

Those professionals working in companies are most likely to be a member of one or both of the CPD schemes, the local authority pest controllers are the least likely. The self-employed fall in-between.

Membership of trade associations

80% of the respondents (or their organisations) are members of at least one association, either BPCA or NPTA (up from 77% last year). All of those working in companies hold at least one membership, but just 61% of those working in local authorities. The self-employed are in-between at 67%.

41% of respondents are members of BPCA, 39% are members of NPTA. 26% are members of neither. Not surprisingly, when respondents were asked: Which trade association are you or your organisation a member of?; those working in companies were most likely to say BPCA. On the other hand, self-employed pest professionals were much more likely to members of NPTA. Those working in local authorities are the least likely to be a member of either.



A recipe for success?

In the data from self-employed and company pest professionals there are some common factors behind those that report turnover and profit is growing.

This is not completely black and white and some of these factors are stronger than others – but, for sure, if you are 'succeeding' then you are significantly more likely to:

- Work in a company rather than be self-employed;
- Be a member of a larger team;
- Be in a longer established business;
- Be longer established in the job;
- Be under 65 years old;
- Have taken on a new employee in the past 12 months;
- Be spending more time on commercial locations, less on domestic;
- Be optimistic about your prospects;
- Have a high proportion of work under contract;
- Be in a CPD scheme;
- Be a member of a trade association.

So, if you want to succeed, this is a checklist that is proven to work!

New directions?

Overall around a third of respondents said that they were looking to take on new lines of work.

The local authorities were most likely to be considering branching out – 45%. As local authorities have traditionally been the most restricted in the pest management services they offer and with budget pressures still high, this is an eminently sensible strategy. This group was looking to expand into bird management/proofing, proofing in general, EFK maintenance and at offering more advice on prevention.

For both companies and the self-employed, the most frequently mentioned new activity area was sewer and drain inspections and repairs.

Companies were also considering services outside pest control such as: agricultural silo cleaning, washroom services, clinical waste disposal and, in one case, even Japanese knotweed control. Other activities mentioned were smart traps, heat treatments,

wildlife/mammal management along with mosquitoes and termites – when they arrive!

A number of companies said that they already did all types of pest management.

Smart traps, heat treatments, mammal control and mosquitoes also featured on the self-employed new activities list, as did bird work, bed bug monitoring, prevention and advice activities rather than control and focussing on mechanical controls rather than chemicals.



Bottom left, drains and sewers offer expansion possibilities; bottom right, one respondent is considering Japanese knotweed control; below smart traps and mechanical controls also have potential



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Toolbox talks take off

According to BASIS PROMPT, toolbox talks are now one of the most popular ways for pest professionals to learn and pick up continuing professional development (CPD) points. But, what are they and why are they becoming so popular?

It turns out toolbox talks are a catchy description for short in-house training sessions. Michele Williams, professional register manager at PROMPT says that the register opened up to toolbox talks about a year ago. "Since then we have been receiving more and more requests to log points earned through attending these informal and convenient work-based meetings," she said.

The phrase toolbox talks is believed to date back to 1930s America, when foremen and construction workers gathered around their toolboxes at the beginning of a day's work to share health and safety advice. Today a wide range of topics is covered.

One company which makes widespread use of toolbox talks is Kent-based Safeguard Pest Control, whose contracts and compliance manager, Malcolm Stowell, gives the talks several times a year.

Recent sessions have covered such diverse subjects as the change in the classification of the insecticide Ficam D, changes in safe working practices and even delusory parasitosis, which is the false belief that someone's body is infested with bugs or parasites. See **Pest 54**: December 2017 & January 2018.

Malcolm commented: "Toolbox talks are extremely useful as long as they are memorable, accessible and easy for people to understand. The information should be bite-sized and you get best results if you can introduce a practical element. He has five recommendations for any business that wants to run its own toolbox talks and make sure that they are informative without being too time-consuming.

- Present the information in bite-size form. This is so important – no-one wants to read *War and Peace*, so break it down into easy-to-understand bullet points. Keep it simple;

A thank you goes a long way!

New research reveals that a simple thank you from business leaders can create a butterfly effect retaining existing staff, attracting new talent and motivating employees to be more productive. Sounds like common sense but does your boss do it?

A study of 1,253 workers, carried out by workplace and incentives provider, One4all Rewards, revealed:

- 61% of UK workers said that a company who rewards staff with an individual cash bonus or gift card is a more desirable place to work;
- 65% said they would be motivated to work harder if they received an individual cash bonus or gift card;
- Almost half (48%) said that rarely receiving any form of thanks from their employer would make them want to leave the company;
- 40% of UK adults also said they would be unlikely to apply for, or accept, a job offer from a company who did nothing to say 'thank you' to their staff.

Read *The Magic Word for Business Growth Report*, at www.one4allrewards.co.uk/magic-word-report-2019



PROMPT's Michele Williams

- Break everything down into accessible language. Some of the information our industry shares can be technical but that doesn't mean people understand the jargon;
- Make it memorable. Have a think about what you can do in order to gain people's interest, maybe by using humour or interesting pictures in your presentation;
- Try and make it practical. Sometimes it's easier for people to take on new things if they see it taking place in front of them and get a hands-on experience themselves;
- Use a larger font on your hand-outs. I use no more than one or two pages of A4 and find that the bigger the writing, the better – small writing makes it less likely that people take in what they're reading.

PROMPT has strict criteria governing the amount of points that can be gained by attending a toolbox talk. It insists that a toolbox talk must last for at least an hour and must be attended by no more than 15 people.

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Moth busters

The National Trust for Scotland (NTS) has had an ongoing problem with clothes moths (*Tineola bisselliella*) at its Palladian mansion, Newhailes House, near Musselburgh, East Lothian since 2016. Localised treatments had failed to get on top of the problem and, by the beginning of this year, it was clear a more extensive treatment was required.

As pest professionals know, getting on top of a clothes moths problem, even in a domestic situation, can be challenging. The scale and extent of the problem at Newhailes required a major effort and an integrated plan.

A three-pronged approach was adopted involving temporarily removing collections from affected rooms, low temperature/freezing treatment for infested items and a thorough deep clean combined with selective insecticide treatments in the affected spaces.

The scale of the work meant an army of volunteers had to be recruited, all of whom needed training. Staff were also seconded from other properties. The project ran from January to May 2019.

Freezer treatment was the main control method. Two industrial freezers, each the size of a shipping container were installed at the property. Items were wrapped in acid-free tissue paper to act as a



Loading objects into the freezer

buffer against condensation. They were then covered in polythene before being placed in the freezers where the temperature was gradually dropped to -35°C .

Objects remained in the freezers for 72 hours to ensure all life stages – eggs, nymphs and adults – were destroyed. After 72 hours the freezers were switched off to allow the temperature to gradually return to ambient levels when they could be removed safely.

Once an infested room was emptied, staff used special back-mounted vacuum cleaners to deep clean. In the library this required



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Moving a large rug from the house to the freezer

two 6.5 metre scaffold towers to access the high bookshelves. The towers also allowed the team to remove the massive curtains for freezer treatment.

Some items were unsuitable for freezer treatment because of the materials used in their construction, for example objects with mother of pearl inlay. Others couldn't be moved such as a built-in wardrobe with silk lining. These had to be deep cleaned and will be subject to increased monitoring.

A water-based permethrin spray was applied to the backing of fitted carpets prior to re-laying in cleaned rooms. These rooms and the carpets will be carefully monitored as the product only remains effective for around three months.

Transflurin moth deterrent packs were also installed in cleaned cupboards and the team treated as many gaps and voids in the rooms as possible using a silica desiccant to provide long term control.

Our thanks to Institute of Conservation intern, Arielle Juler, for providing details for this report.

The scale of the project was impressive with 420 collection objects freezer treated and cleaned, 15 rooms across the principal floors deep cleaned (with insecticide/ dessicant dust and transflurin packs applied as appropriate) and around 700 objects packed and temporarily moved.

All seems to have gone well but, proving just how unpredictable pests can be there has been a further recent outbreak. This time in retail stock of cashmere jumpers.

Turns out that when the project began staff were asked to wrap and seal any shop stock that was to be stored in the house during the project. However, due to time constraints the project team did not check the boxes the retail staff had packed. Unfortunately there were gaps in the boxes and moths managed to access the jumpers. The outbreak is being dealt with by quarantining the stock in question and applying insecticide to the affected room. The treatment is ongoing!



Applying dessicant dust



Wrapping an object for freezer treatment



Monitoring trap full of clothes moth



Two container-sized freezers were installed to treat all the moveable items. Objects remained in the freezers at -35°C for 72 hours to kill all stages



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BPCA takes to the high road

The British Pest Control Association (BPCA) travelled North to Glasgow for its latest regional forum on 18 September where over 60 delegates gathered at the Best Western Garfield House Hotel. Our reporter summarises what they heard.

Kevin Higgins, BPCA's membership manager was in the chair. He explained there was a programme of six speakers and, that, on this occasion, the event was sponsored by BASF. Presentations ranged from rodent control to waste disposal and included speakers from Killgerm, Pelsis, the Scottish Environment Protection Agency (SEPA), Dealey Associates, Height for Hire and BASF.

Kicking things off was Brady Hudson from Killgerm who discussed how rodents sense. She explained that research was still bringing new information about how rodents sense their environment including the significance of the pheromone, darcin. This attracts female mice to the particular odour of a male. Amusingly, the pheromone was christened 'darcin' by researchers after Darcy, the attractive hero in Jane Austen's novel *Pride and Prejudice*.

Continuing the rodent theme was global technical marketing manager for BASF, Sharon Hughes. Sharon brought her years of experience and knowledge to the forum and explained how the palatability of the new rodenticide, Storm Ultra, was set to improve efficacy significantly for pest professionals when it is launched at PestTech in November.

The group was offered a more light-hearted demonstration, courtesy of Colin Harrison from Pelsis, who sought audience participation in a live game. Volunteers battled it out to dismantle and reassemble a traditional electronic fly unit versus the new Infinity LED model. This offered countless opportunities for a giggle, as some struggled their way through the task in the hope of winning the I'm-bro prize.

Mark Heggie, from SEPA, explained the regulations for the disposal of special waste and offered valuable advice on how to fill in important paperwork relating to the consignment of such waste.

The event was rounded off with a spirited presentation by Martin Cobbald of Dealey Associates. Martin gave a whistle stop tour of the history of the various fumigant actives and explained how hydrogen cyanide (HCN), hardly a new fumigant as its use can be traced back to 1811, is once again available in the UK marketed as Bluefume. This has activity against both insects and rodents, but for the foreseeable future, can only be used in empty buildings.

Both members and non-members are welcome at BPCA regional fora. For dates and venues visit the BPCA website.



BASF's Sharon Hughes in action



The EFK exercise – now where did this bit fit?



Martin Cobbald enthuses about fumigants



A good turn out for the BPCA roadshow in Scotland

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App launched to track ticks

An app has been launched specifically designed to track and map ticks and Lyme disease in the hope it will help reduce the number of those infected.

LymeApp, a website and linked app, works by letting people report tick sightings and bites. Using this data the app will create an interactive map available via mobile phones and linked to a website.

A collaborative £1.1 million project, it is being developed by International Disease Mapping Apps (ID MAPPS), a new company formed by Scotland's Rural College (SRUC), a representative company Highland Health Ventures (a collaborative partner for NHS Highland), ERGO (Environmental Research Group Limited) and Belgium-based Avia GIS NV.

Information from the Aberdeen-based Scottish Lyme Disease and Tick-borne Infections Reference Laboratory, along with input from general medical practitioners, has been used in the app. It will use spatial modelling techniques to produce detailed maps of where the ticks are likely to be and where the disease is reported most often.

Using citizen science technology, LymeApp will also allow the public to report locations of tick sightings and bites via Smartphones to add to the central database.

In the UK it is estimated that 3,000 people per year are diagnosed with Lyme disease and 65,000 in continental Europe.

Email: info@idmapps.com



Helpful infographic from BPCA

As detailed on pages 10 and 11 of this issue the situation regarding General Licences in England is far from straightforward. The British Pest Control Association (BPCA) has come up with a useful flow chart designed to guide pest controllers down the information tree. It helps you decide if you need to apply for a general or individual licence.

Copies can be downloaded from the BPCA website or from the **Pest** Library.



Revised field guide

Barrettine Environmental Health has produced a revised version of its *Technicians' Field Guide*. The guide contains detailed information to assist in the daily routine of a professional pest controller. The intention is that this field guide is used alongside Barrettine's product catalogues to assist professionals in specific treatments to control target pests.

As a practical extension of the product label, it contains guidance on how to apply the correct dose of gels, spatial/ULV and surface sprays, as well as separate sections on the calibration of application equipment. Complementing this information, is a section on anticoagulant baiting techniques for rodents within a variety of environments.

The full range of pest species is covered, namely flying and crawling insects, rodent and bird pests as well as agricultural and amenity pests. Novel additions are sections detailing the use of monitors and non-chemical control measures.

It is wire-bound for easy opening and runs to 152 pages. Price £22.69.

www.barrettinePro.co.uk



A vital piece of kit for airgunners

This 224-page book is a 'go to' guide for beginners and intermediates interested in the use of air rifles and wanting to learn how to get the most out of them.

The Airgunner's Companion: A field guide to hunting with air rifles, written by J D J Braithwaite, provides the reader with the fundamental knowledge necessary to be an effective hunter. It covers information about the different types of airgun and provides advice on selecting additional shooting equipment – such as telescopic sights, moderators, laser range finders etc.

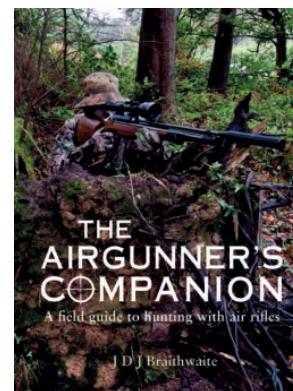
Chapters include how to use camouflage effectively, manage serious vermin control and conservation projects, stalking, lamping rabbits and how to decoy woodpigeon and corvid species to the ground.

The book unites the latest developments in airgun technology with tried and tested methods for hunting and the latest scientific knowledge of animal behaviour.

There is a chapter on the shooting of rabbits, grey squirrel, wild mink and rats as pest species. Another deals with approaches to 'our feathered friends' – namely feral and wood pigeons, collared doves along with the range of corvids – that is when you are allowed to manage them!

ISBN: 9781846893018. £18.95

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Bábolna Bio

Get lifting with Unikey

There is a huge variety of manhole covers in use in the UK. This invariably results in pest controllers not having the correct manhole key on the van. The result is they are forced to battle away trying to lever the cover up with a combination of screwdrivers, cold chisels and large hammer which can easily result in damaged manhole covers.

Now, help is on hand with the Unikey universal manhole cover lifting kit. Manufactured from quality zinc-plated carbon steel, it comes with two handles, a range of tips to suit the most common manhole covers and a stop-cock key. Tips can simply be swapped so as to be able to lift most manhole covers. To keep it altogether, it comes with a handy carrying case.

The key handles and tips have a 250kg Safe Working Load certified by Lloyd's British Testing (1000kg straight pull destructive testing).



www.metexonline.com

Steel bait station

The AF Fortis is a high-quality, steel bait station, made from 18 gauge CR1 zinc-plated steel with a one-piece seamless top and bottom casing. It is available in black or green and is powder coated to a high-quality matt finish. The tamper resistant lock has a spring steel lock blade. It has top key entry with a hinged lid for quick & easy servicing. The robust metal key is supplied separately.

The one-piece removable plastic liner accommodates all bait formulations – pasta, loose grain, blocks and liquid bait. Four metal rods are supplied with each box and can be used in both horizontal and vertical positions. Snap traps can be accommodated.

The raised entrance holes and ramps on the one-piece liner help to keep the box weatherproof. The large flattened area on the lid of the box allows for the application of company branding. The base of the box features a selection of fixing holes which can be used with the AF Ground Anchor for soft ground.



www.killgerm.com

On the mouse menu

This Rascal cut wheat bait is formulated using food grade micronised wheat cut into small chunks. Sold by 1env Solutions, the company says it's ideal for treating high mouse populations in areas where competitive food is readily available.

Containing difenacoum, it comes in convenient to carry 10kg tubs.



www.1env.co.uk

Upgraded laser for birds

Avix Autonomic Mark II is the newest product in the range that deters pest birds using intelligent and automated laser technology.

The new Avix Autonomic is a permanent, humane method of bird management, with minimal environmental impact, explains PestFix. It replaces the original Agrilaser Autonomic.

Enhancements offered from the new Avix Autonomic include wireless connectivity up to 20 metres. This means there is no need for USB cables, so simplifying the installation and maintenance of the system and making it more time efficient.

It comes with variable strength laser, allowing it to be tailor-made to site conditions. This both increases its effectiveness at deterring pest birds and saves energy when 100% power is not required.

Safety is increased with the use of an integrated emergency stop and removable key lock, meaning the Avix Autonomic can be safely isolated when access to the projection area is needed.

The motor platform now has full 360 degrees operating range, increasing the projection area covered by each unit.



www.pestfix.co.uk

Seal those door gaps

Gaps under doors are always ideal entry points for rodents, especially as temperatures fall in the autumn. Proofing of doors and other gaps against rats, mice and other pests can prove an ideal solution.

Claiming to be made of highly durable material, this proofing door seal has 1mm steel wires running through its length to prevent rodents from chewing through.

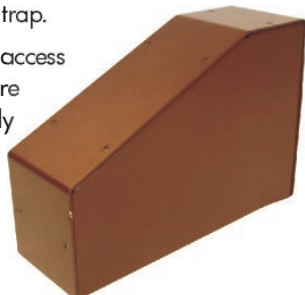


www.1env.co.uk

Metal cover for squirrel trap

The Goodnature A18 trap cover is a sturdy but lightweight powder coated, aluminium cover that can be used to effectively conceal traps when used in open areas. The cover gives the trap added protection from squirrels that may try to chew through the lure basket or other exposed areas of the trap.

When fitted, the cover still allows full access for squirrels to enter the trap. There are no fittings required as the cover simply slides over the trap and bracket. Its tight fit ensures that it remains securely in place.



www.killgerm.com



SUPER TRAPPER SNAP TRAP

A superior, high strength rat trap ideal for use bait-free, or in other special situations.

It comes with a highly sensitive trigger, ensuring rodent capture.

Extremely easy to assemble.



For extra security, this rat snap trap can be used inside our tamper-resistant bait stations.

It is compatible with:

- Bora Bait Station
- Delta Bait Station
- Neptuno Bait station
- Apollo Bait Station



www.plastdiversity.com

CONTACT US FOR MORE INFORMATION!

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Who will win the coveted 2019 Best Product Award?

It's time to vote

best
product
award
2019
pest

Which of our fabulous finalist products has helped you the most in your working life as a pest professional?

Will it be new equipment or a new spray product or a new rodent bait that earns your vote? Pictured opposite are the 11 products on the 2019 shortlist. Take a look and decide which you think deserves the accolade of **Pest** readers' best new product of 2019, then make use of your vote.

You can vote for up to two products, as your second choice will be taken into account in the event of a tie.

How to vote:

- Complete the postal voting form opposite and return it to the editor at the address shown;
- Or email editor@pestmagazine.co.uk. Please include your name and organisation in your email as well as the product(s) you want to vote for;
- Or vote online from the **Pest** web story at www.pestmagazine.co.uk/en/vote

Voting closes at midnight on **THURSDAY 31 OCTOBER 2019**.

The top three winning products will be announced during PestTech on Wednesday 6 November and the winners certificates and trophy presented.

Pest associate editor, Helen Riby, commented: "Now in its tenth year, we have had some truly fantastic winners in the past and we are looking forward to finding out who will be crowned the 2019 champion."



THERMAL FOG GENERATORS

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



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AR8 Pro telescopic
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from Lance Lab



Neo rodent station
from Edialux



TalonM kibbled maize
rodenticide
from Syngenta



Silvercheck non-toxic
silver/greyfish lure
from Russell IPM



Ultra bee suit
from BBwear



Muribrom extruded
wrapped block
from Tenv Solutions



RatMat
from Killgerm



Infiniti UV LED
glueboard flykiller
from Insect-O-Cutor



Organ-X Pro ready-to-
use insect killer
from Lodi UK



Tunnel rodent station
from Plastdiversity



Green Hero Frost Spray
from Futura

Vote now

The new product(s) which has (have) made the largest contribution to my working life is (are):

1

2

Name:

Organisation:

Tel:

Email:

SEND YOUR COMPLETED FORM to **Pest Magazine**, Foxhill,
Stanford on Soar, Loughborough, Leicestershire LE12 5PZ

- 1 Readers may vote for two products with the second choice taken into account in case of a tie. Only one voting form, online vote or email vote per person accepted;
- 2 Manufacturers/distributors and their employees cannot vote for their own product.
- 3 Votes submitted after midnight on 31 October 2019 will not be counted.

You can find all the legal stuff at www.pestmagazine.co.uk/en/bpa-rules

best
product
award
2019
pest



**10th INTERNATIONAL
CONFERENCE
ON URBAN PESTS**
JUNE 29 - JULY 01

As you know, the International Conference on Urban Pests (ICUP) brings together those with a professional interest in urban pests. Every three years, participants from academia, industry, government and professional pest control, come from all over the world to meet at the ICUP and share research and ideas.

In this 10th edition that we celebrate in 2020, the Spanish Organizing Committee in charge of the Conference will maintain the classical main topics but introduce several new features related to ICUP's spirit and aims. In the 10th ICUP Conference the initials of the organization will be relevant each day of the meeting.

ICUP

"I" day 29th June

"I" means "International" that in terms of Pest Management we can interpret as "No borders" situation to fight against pests. Globalization is one of the most relevant drivers of new and old pest invasions worldwide. The massive and quick movement of people and goods all over the world has facilitated the expansion of arthropods, mammal and bird pest. Once established in urban environments, they cause economic, health and structural damages. A global view of pest processes is needed since new harmful organisms can arrive to new cities at any moment **due to globalization and climate change**. Consequently, networking of Pest Management professionals and awareness of pest situations are mandatory preventive measures for any city. During the "I" day we will focus the Plenary Session on this topic of "Globalization and Pest Management".

ICUP

"U" day 30th June

"U" means "Urban" which is our working landscape. The urban concept is strongly dynamic and has also notably changed in the last 100 years. Different types of urbanization processes and diverse urban plans can influence pest problems. Architects and other professionals directly involved in urban planning are key partners for pest managers. Moreover, urbanization has also a collateral impact on pest behavior. Cities are artificial environments that can cause changes in the ethology and reproduction of "urban fauna". Understanding these factors and changes is crucial to design and implement efficient urban pest management programs, **especially in relation to urban disease vectors such as mosquitoes, sandflies and rodents**. All these aspects will be discussed in the Plenary Session of this day (the "U" day) of the Conference.

ICUP

"P" day 1st July

"P" means "Pests" which is our key concept. Pest is a circumstantial, arbitrary and anthropocentric concept. The determination of tolerance and economic impact thresholds to make decisions on pest management is not easy and varies depending on different cities and social, cultural and legal factors. Moreover, new pests or "urban fauna" are emerging in different parts of the world. Some traditionally non-urban animals like parrots, wild boars, scorpions, snakes, are increasing their impact in cities worldwide. These topics will be discussed during the "P" day, of the Conference.

ICUP

"C" Conference

The last initial is "C" which correspond the "Conference". The Conference is the space we have to discuss "I", "U" and "P". It is the forum for the exchange of technical and scientific ideas and the enhancement of communication and cooperation among all those professionals working with urban pests worldwide.

Conference attendees are encouraged to send their communications based on one or more of the following key topics:

- Bed bugs
- Mosquitoes
- Xylophagous insects (termites; woodboring beetles)
- Flying insects (flies, wasps)
- Crawling insects (cockroaches, ants)
- Medical entomology (ticks, fleas)
- Rodents
- Birds
- Invasive Species
- Chemical control
- Non-chemical control
- Complementary technology (GIS, monitoring tools, citizen science)



Dr. Rubén Bueno

Chair of 10th ICUP 2020

On behalf of the Organising Committee

More info at: www.icup2020.com

Diary dates

15-18 October 2019**PestWorld 2019**San Diego Convention Center, Manchester Grand Hyatt Hotel, San Diego, California www.pestworld2019.org/**6 November 2019****PestTech 2019**Arena MK, Stadium Way, Bletchley, Milton Keynes MK1 1ST www.npta.org.uk/pesttech/**14 November 2019****SOFHT Annual Lunch, Lecture & Awards**The Brewery, 52 Chiswell Street, London EC1Y 4SD www.sofht.co.uk/**20-21 February 2020****Expocida Iberia 2020**IFEMA - Feria de Madrid Av. Partenón, N° 5, 28042 Madrid, Spain www.expocida.com/es/**11 March 2020****PPC Live 2020**Yorkshire Event Centre, Great Yorkshire Showground, Harrogate HG2 8NZ www.bpca.org.uk/Upcoming-Events/ppc-live-2020-professional-pest-controllers-live/**18-19 March 2020****Pest-Protect 2020**Arena Berlin, Eichenstraße 4, 12435 Berlin, Germany www.pest-protect.eu/en/trade-fair-symposium.html**22 April 2020****Benelux Pest 2020**NH Conference Centre Koningshof, Loch 117, 5504 RM Veldhoven, Eindhoven, The Netherlands www.beneluxpest.nl/en/

Collecting PROMPT 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 2019 is: PC/79634/19/g

PROMPT
Register
REGISTERING EXCELLENCE IN PEST MANAGEMENT

Pest Test 65

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, so read through our article on *Understanding and tackling resistance* then answer the questions below. Try to answer them all in one sitting and without referring back to the article.

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 What does VKOR stand for?

<input type="checkbox"/> a) Vitamin K epoxide reductase	<input type="checkbox"/> c) Vitamin K organ resistance
<input type="checkbox"/> b) Vitamin K oxide reductase	<input type="checkbox"/> d) Vitamin K ordinary resistance
- 2 Which gene is responsible for rodenticide resistance?

<input type="checkbox"/> a) L128S	<input type="checkbox"/> c) VKORC1
<input type="checkbox"/> b) Y139C	<input type="checkbox"/> d) L120Q
- 3 When was resistance to bromadiolone and difenacoum first discovered?

<input type="checkbox"/> a) 1970s	<input type="checkbox"/> c) 1990s
<input type="checkbox"/> b) 1980s	<input type="checkbox"/> d) 2000s
- 4 Which of the following is the most resistant?

<input type="checkbox"/> a) A heterozygous animal	<input type="checkbox"/> c) An animal with two copies of normal code
<input type="checkbox"/> b) A homozygous animal	<input type="checkbox"/> d) All are equally resistant
- 5 Which of the following actives is effective against all strains of resistant rats and mice?

<input type="checkbox"/> a) Brodifacoum	<input type="checkbox"/> c) Bromadiolone
<input type="checkbox"/> b) Difenacoum	<input type="checkbox"/> d) Warfarin
- 6 What has research at Reading discovered about Y139C mice?

<input type="checkbox"/> a) Highly resistant to flocoumafen	<input type="checkbox"/> c) Highly resistance to bromadiolone
<input type="checkbox"/> b) Highly resistant to difenacoum	<input type="checkbox"/> d) Highly resistant to difethialone

Name: _____

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