Pest Notes

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"What We Have Here is a Failure to Communicate!"

IPM Program Success Depends on Communication

Not too long ago, I had the opportunity to review a rather poor pest management program at a large storage facility. I asked the facility manager if he had the opportunity to talk with the pest contractor. His reply was right to the point, no. This simple answer spoke volumes as to why the program was failing.

After leaving the facility, I experienced a strange flash back to Mr. Orr's 5th grade science class. Beyond being the most patient individual I have ever known, he was also the most insightful. When we became a bit confused by the topic of the day (we kinda looked like deer in the headlights), he would always say, "I know you're hearing me but are you listening?"

If you examine any successful IPM program, two components are always found, communication and cooperation. Without them, program goals are never completely achieved. Therefore, as pest managers, it is our responsibility to communicate with our customers and ensure they are not only hearing us but also listening. The following PCT-Online article by Deb Haggerty describes the importance of communication.

Four Keys to Clearer Communication

Communication is the cornerstone of any successful business. PCOs need to know how to communicate with their technicians, office personnel as well as other PCOs. Deb Haggerty, president of Positive Connections and a former executive with AT&T and

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"Is It Just Me, Or Are There More Rats Around Here?"

Reasons for Urban Rodent Population Expansion

I'll admit it, my seven-year-old son is a Pokemon addict (They tell me admission is the first step in being cured). For those of you not indoctrinated into the world of Pokemon, they are cartoon figures which "battle" in imaginary contests for their owners in the hopes of earning awards. A favorite in our home (go figure) is called Raticate. During contests, this ubiquitous rat-like character usually "wrestles victory from the jaws of defeat," moving on to fight another day. Although imaginary, Raticate sort of reminds me of many rodent populations we are often asked to manage. Even when it seems you have eliminated the problem, another group shows up somewhere else. Does this mean we are trying to defeat expanding populations of "super rodent," which have evolved effective defenses against our attacks (I've really got to get out more)? Clearly the answer is no, but urban rodent problems are becoming more common. Why? Dr. Bobby Corrigan, in the following PCT-Online article, provides some interesting observations.

Vertebrate Pests

The significance of the three domestic rodents as pests in the United States has increased throughout the past several years. This is evidenced by the increase in calls to pest management professionals, health departments and municipal rodent control officials. In addition, sales of over-the-counter rodent traps and rodenticide baits are also up. Attention by the mass media is another indicator. Several of the largest U.S.

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Southern Bell gives tips for PCOs to follow to improve their communication skills.

CONSIDER THE PRUPOSE. Before you jump into a conversation, consider the outcome you hope to gain from it. Too many times, we just start talking without specific goals for the conversation. At the end of the conversation, we walk off frustrated because we haven't received what we wanted from the encounter. To reduce frustration—on the part of both participants—plan what outcome you want before speaking. Then set up the outcome by announcing at the beginning of the conversation what you hope to accomplish. You'll be able to cut down on the amount of wasted time and gain respect from your conversant for respecting their time as well. You'll obtain your desired results with a greater degree of frequency, too.

CONSIDER THE PLACE. In addition to thinking about your intent in talking to someone, also consider the place. Just because you both end up in a particular location at a point in time doesn't mean that that's the opportune time to have a particular conversation. Business conversations should take place at the business or at networking events specifically designed for such chats. Social occasions should be just that—a chance to relax and be social, to get to know folks better—not to finish conducting business left over from the office. Successful communication is more probable when both parties are focused on the business at hand, not distracted by events going on around them or the need to pay attention to some other activity.

CONSIDER THE PERSON. Think about the person whom you'll be having the conversation. What is their communication style? Do they need to have discussion points in writing in advance to be able to be prepared? Do they need lots of detail? Are they the type of person who needs to schmooze before getting down to facts or are they the "cut to the chase" type who gets irritated at idle chatter? Do they need time to process information before making a decision or do they spontaneously okay something that sounds new and interesting? By thinking about that person's communication style, you can tailor your communication behavior to meet their needs, Thereby insuring a more successful outcome.

CONSIDER YOUR PERSONALITY. What kind of person are you? Are you the fast-talking, lots of gestures, likes to hear themselves talk kind of person? Are you totally goal oriented, down to business kind of person? Do you like lots of details and organization and time to process information? Do you just want to get along with everyone, do a good job, and go home?

Depending on who you are and your assessment of the person you are going to talk with, you may need to modify your behavior if you want to have the conversation end successfully. For example, if you're the "spontaneous, this sounds like fun, let's do it" type and you need to talk to the "lots of details, time to process information" type, you'll need to take the time to get organized, plan what you're going to say and then slow down your speech and gestures. If you don't modify your behavior to match that of the other person, you run the risk of turning them off on your ideas because they're turned off by your style. Better to mirror them to get your ideas across and to get to know them better, and then relax into what is natural for you.

Clear communication always starts with the end in view. Know your purpose, set the stage correctly for the time and place of the conversation, consider the other person's communication style needs, and know yourself. Thinking through these four keys will help insure that your conversations are meaningful, relevant and accomplish your goals.

SIDE BAR: COMMUNICATION

No One Has A "Magic Wand"

PCT-Online
Dr. Robert Corrigan

Have you ever serviced an account that is cluttered, has food spillage everywhere, has open

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doors and windows and yet the client complains that you are not getting rid of their pests?

I certainly have and I bet you have also. I often wonder if these clients think I have a "magic wand" in my pocket for eliminating their pests when, in fact, the client is providing the ideal conditions for the pests to proliferate. Unfortunately, such cases of poor client cooperation are all too frequent in the pest control industry.

Occasionally, however, a particular situation or in-house operation affecting a pest problem are less readily apparent to both the pest management professional and the client….but the consequences are not. It is in these specific instances the client will frequently blame the professional for lack of results.

UNCOOPERATIVE CUSTOMERS. Let's examine a case in point. A large commercial food warehouse I inspected recently has an ongoing problem with mice. Although multiple catch traps and bait stations are placed appropriately both inside and out, the warehouse has hired and fired three pest control companies for not getting rid of mice in the past two years.

After my inspection, I filed a report, reminding this client that short of fumigation, or a very expensive program featuring extensive man hours of service, no company was likely to be able to control the mice to their satisfaction. Why? Because this warehouse (like so many others) stores their sacks of grains too close to the walls. The client responded (very defensively) that there is ample room for the pest management technician to move, inspect, "spray" and install mouse traps. This is true. But unfortunately, there's not much room for anything else. Product spillage remains for weeks because cleaning crews do not have easy access to the areas. Various boxes and bags with holes in them provide undisturbed, protected harborage and abundant food for mice. Although some mice are captured each week, many mice can still be seen darting among the pallets and product. Additionally, in situations such as this with unlimited harborage and food, the investigative behavior of many mice usually decreases. So although the traps are in place according to specifications and were properly would and maintained, the capture numbers weren't keeping up with the population output. The warehouse manager constantly complains and blames the current and previous pest management professionals. At this account, the technician confided in me that he truly felt "responsible" for not capturing more mice each week. He even wondered if the solution lies in changing trap brands or switching glueboards.

In another case, a technician approached me seeking a recommendation for a rat infestation. He described a grain processing plant that he services weekly. Rats are living in the suspended ceilings and upper areas of the plant and come down at night to feed on the spilled grains that remained un-removed. Although he is killing a few rats each week, his bait and trapping program isn't keeping up with the rat population and the client is on the verge of canceling the account. This professional also feels "guilty" for not being able to control these rats and dreads being confronted by the plant personnel. When he asked me for advice, I reminded him not to be too hard on himself, as he doesn't have a magic wand if the client won't cooperate. And, although there were some techniques I passed along to him for controlling this particular infestation, I do not have a magic wand for quickly eliminating rats in these accounts. These two cases, and countless other situations, repeatedly finds pest professionals lamenting, "What does the customer expect? I don't have a magic wand."

No we don't. But all of the blame can't be placed on our clients either. Nor should we use the "magic wand" excuse when it seems handy. We are commonly partly to blame in these types of cases.

COMMUNICATING WITH CLIENTS. We often fail to communicate to clients that they play a critical role in the pest management program relative to sanitation and other pest denial efforts.

This is especially true on the front of our contract

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agreements, yet no one wants to approach the uncomfortable topic of the client's role in pest management. A sales professional certainly does not want to jeopardize a sale by listing even more work for the client to do. The sales professional knows the client's perception is that they've hired us to do whatever it takes to get rid of their pests. So we sign on accounts that contain conditions highly conducive to not only growing pests, but that also allow more to enter the structure after we reduce the current infestation.

As yourself, "Does the client truly understand what realistically can be controlled under circumstances of open doors and windows, cluttered rooms and areas, unsanitary conditions and so forth? In such cases, whether it is rodents, birds, grain pests, or other pests, communicating with the client up front during the sales approach and periodically throughout the service is critical. Frank discussions should occur as to the responsibilities of both parties and how the client's role plays a mandatory component in the difference between controlling pests and may possible hopes of eliminating pests. Without this two-way communication, what do we possible hope to accomplish in accounts containing conducive conditions? We, more than anyone, know we don't have magic wands for these clients. So the closest we can hope to come to the wand is sincere two-way dialogue with the client. It's been my experience the resulting cooperation can seem to perform magic in long-term satisfactory management of pest populations.

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city newspapers during the last decade have run front-page stories about local rat and mouse "explosions." There have also been numerous television documentaries addressing urban rat populations. Consequently, rodent business for pest management professionals is also up. Of course, on one hand this is welcome. On the other hand, the percentage of callbacks due to rats and mice has risen dramatically, causing pest professionals everywhere some headaches.

Let's examine the factors that affect urban rodent populations and why from one year to another or from one area to another there may be increases or decreases in rodent activity.

Population Guesstimates. Actually, it is difficult to claim an increase or decrease in the urban rodent populations when we don't have accurate baseline data to begin with. This is because it is (for all practical purposes) impossible to estimate and track urban rodent populations with any type of scientific accuracy. No one really knows how many mice or rats live in New York, Chicago, Los Angeles or any other city. Unfortunately, the media often projects estimates of "the number of rats per person" in a particular city.

Articles have been written stating the number of rats as increasing throughout the past 30 years from one to six to none rats per person. Yet the number of rodents per capita within our major cities and whether the number is increasing or decreasing is unknown. It is probably safe to say there are several million rats and mice co-existing with us. Some areas of every city and town have more rodents than other areas, just as some buildings may have more rodents living in them than other buildings nearby.

Environmental Trends. Many people comment that the current abundance of rodents must be due to the repeated "mild winters" throughout the past decade. It is true that many animals are subject to population declines as a result of repeated harsh winters. Several years of mild winters may contribute to an increase in feral ("wild"" populations of house mice, Norway rats and roof rats. Increases in the feral

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populations may eventually be seen in urban and suburban areas as more feral rodents disperse into developed areas. Still, mild winters play only one part in commercial rodent population dynamics.

Some parts of the United States have been subjected to prolonged droughts. Severe droughts will cause rodents to disperse from fields and other natural cover areas that may contain more sources of moisture. However, droughts typically cause only occasional peaks in rodent activity in the years the drought occurs.

Construction and Demolition. Rodents take good advantage or our complex urban structural environments. Our largest cities are aging and undergoing many changes on a daily basis. Most older city buildings have hundreds (if not thousands) of various nooks and crannies in which rodents have been hiding from us—especially mice. In some cases, they have had these concealed harborages for up to 150 years—especially the smaller mouse. For rats, deteriorating walls, sidewalks, and sewer systems all provide good habitat. Ignored and/or poorly selected landscaped areas (low-lying shrubs and bushes) also provide an important rat habitat. Many people do not realize that the nearest rat family may literally be right beneath their feet on some city sidewalk or nearby where they sit for lunch outside beneath their office building's landscaping.

Additionally, large office complexes and multi-family housing units are complex structures, containing all types of vertical and horizontal utility chases. Gaining access to rodents within these structures can be difficult and in some cases, impossible. In fact, some architects estimate that humans have access to only 50 percent of a building once the building is completed. The inability to access all rodents plays an important role in professionals not being able to deliver a knockout punch to these pests even when they are equipped with outstanding rodenticides and effective traps.

Large construction and demolition projects also play a significant role in disrupting and dispersing rodent populations. In areas where there hasn't been any construction for extended periods, rat populations can have activity patterns that go largely unnoticed in these stabilized neighborhoods for long periods of time. Once these areas are disrupted via construction or demolition projects, the established rats are dispersed into new areas.

Without their normal cover and feeding patterns, displaced rats or mice are readily encountered by people in those areas. These sudden encounters in areas that may have been previously perceived to be "rat free" often result in loud and repeated calls into the local board of health, city officials, pest management professionals and occasionally, the media. The result in these areas is the perception that the rat problem is "getting worse" in the city overall, when in fact, the number of rats in the city hasn't necessarily increased, it has only shifted from one area to another.

Sewers as Rat Restraints. With the advent of garbage disposal units, human foods are disposed of directly into sewer systems. This results in sewer rat populations having access to perhaps a totally balanced nutritionally diet. Therefore, proliferation is simpler.

Urban Sprawl. As we have seen throughout the past two decades, urban sprawl has caused the displacement of many different species of urban wildlife, resulting in a boom in wildlife control programs. Similarly, feral rat and mouse populations.

SIDE BAR: Snap Traps-New Technology or Age-Old Savior?

Pest Control Magazine
Dean Stanbridge

Over the past couple of years, there certainly seems to be a lot of hype about snap traps being the be-all and end-all in mouse control. You would think, the way that everyone is talking, that they were the newest thing since sliced bread.

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I would have to agree that snap traps are certainly making a comeback, but why? Could it be that we are feeling some pressure from our customers to reduce rodenticide use, or has someone actually built the "better mouse trap?" I would suggest that both are true, but we have always had good mousetraps. The key to success with snap traps, like so many of our control tools, is understanding how to use them effectively under all kinds of conditions.

Setting the Trap

How many of you have had this response from clients when you pull out snap traps from your service kit? "Those things don't work, I've already tried them" or "That's what you're going to use? I could have gone to the store and bought them myself."

I believe that responses like these are the main reason that pest management professionals (PMPs) don't use these traps. I have had many field staff tell me that pulling out snap traps is like telling your customer that they can do it themselves just as effectively. Bull! We are professionals, we understand this pest and how it can be effectively controlled. A snap trap is no different than any of the ant or cockroach baits, which can also be found in the local hardware store.

My response to customer inquiries about the use of snap traps is simple. "They work effectively when used by a professional." If this doesn't work, I will go on to explain the advantages of having the dead mouse captured, thus, reducing the risk of rodents dying inside their walls and causing odors or a potential biohazard, such as hantavirus. You are also reducing the use of pesticides, which makes everyone happy.

Taking the Bait

Once you have sold the customer on snap traps, you better make sure that they will be effective. A couple of pointer on the storage and use of these devices need to be reviewed. Traps need to be stored the same as rodenticides. Make sure that no pesticide gets near the trap. I like to see them stored inside plastic sealed containers along with

Although studies have shown that human odors do not repel rodents, I have always worn disposable gloves when handling snap traps. Your odors may not affect the rodents, but things that you may have touched probably will. Gloves are also a god practice for handling dead rodents.

There are all kinds of baits that can be used to entice rodents into traps. My favorites include peanut butter, kitty malt, molasses, jujubes and cotton balls. If you are going to use peanut butter or any nut product, make sure that you check with the client to ensure there are no nut allergies. Never get stuck on one kind of bait, either, because mice will change their eating habits frequently. I always try to use at least two baits to see what they are taking. If you stop catching mice, change the type of baits and always keep the bait fresh. If a mouse has a choice between month-old peanut butter and fresh food, they will most likely take the fresh food.

The Better Mouse Trap

Is there really a better mousetrap, or just a smarter mouse? I have used every kind of mousetrap on the market, and while some have worked marginally better than others in some accounts, in different accounts they don't work as well. It is really a matter of personal choice and, of course, cost.

There are suddenly some pretty fancy snap traps on the market that take advantage of different rodent habits. Some of these may prove to be more effective under certain circumstances, but only time will tell.

Experience has shown that placement and concentration will beat out trap design any day. Using the rodent's habits to your advantage will always improve your chances of success with snap traps. In a clean-out situation, you can never have enough snap traps. Remember that one reason why control is not achieved is because we often underestimate the size of the population. I have covered many accounts with hundreds of snap traps, but, in general, you want to use traps in localized

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areas. Choose your placements carefully, keeping the traps well-concealed and close to walls or corners. Any areas where you are finding concentrations of droppings are guaranteed snap trap hot spots. The great advantage to snap a trap is that they fit into almost any spot. Keep in mind that mice are naturally curious, so move the traps around as much as possible. A few feet in one direction or another may make the difference between success and failure.

When you are going to have long-term snap trap monitoring stations, I would suggest that they be placed inside one of the new plastic monitoring stations to make the placement more permanent and professional. In office of other employee-sensitive situations, I have found that cardboard bait stations are great for temporary snap trap placement requirements. All you have to do is assemble them inside out so that the poison warnings are not showing, tear out the food hopper and curve the lid slightly, in order to allow the trigger to snap without interference. Presto one inexpensive “mouse house.” The station acts as both a nice dark hole and contains the mouse, out of sight, when it is caught.

Snap traps may not be the answer to every situation, but they are definitely a tool that has been under-utilized by our industry for all the wrong reasons. The next time you’re in that account that has a chronic mouse problem that you want to crash fast, don’t be afraid to reach for the oldest “new technology” in your service kit. You might be surprised to find out that you can make a better mousetrap.

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Snap Trap Baiting Strategies

Dr. Robert Corrigan

Traps and trapping programs for rodents are experiencing a ""comeback" in many parts of the United States. And one of the most frequently asked questions of vertebrate pest specialists is, ""hat is the best bait to use on snap traps for rats and mice?"

But luring rodents to traps is more difficult than tying a piece of Swiss cheese to the trigger. Although it’s Said that trapping rodents can be more art than science, the fact is, it’s some of both.

ON BAIT SELECTION. There’s a difference between selecting a bait to trap just a rodent or two, and selecting baits for large numbers of traps. For a few rodents, practicality is the rule. Peanut butter, for example, appears to be attractive to rodents, is easy to apply, is convenient to keep fresh, and is handy on the service truck for long periods of time. Some professionals also have good success with candy, caramel corn and various nutmeats. Some PCOs have been satisfied using peanut oil lightly brushed on trap triggers.

But what about trap bait selection for rodent initials or jobs requiring may traps? In these situations, it is important to get the best return for your time invested in baiting, setting and installing the many snap traps needed to ensure your trapping program is both efficient and effective. For example, if you install all traps with only one bait, you risk mis-targeting the preferences (if one exists) of the local rodent population. Or, you can miss those rodents which may not be attracted to the bait you’ve selected.

Although it is true that the domestic rodents tend to be omnivorous and opportunistic in their feeding strategies, many variations exist on this model depending on the local environmental conditions of a particular infestation. A group of rats of mice, for example, may be acclimated in a particular building or area toward the local available food which they have been feeding on. But these same rodents may also be receptive to certain foods or items which are missing in their diets.

For large trapping programs in areas where a clear food preference may not be known, the following strategy sometimes proves helpful. Pre-bait all snap traps using equal portions of the following three or four bait choices: 1) baits that match the suspected pre-dominant food of the local population; 2) a food bait which may supplement nutritionally the suspected local food; 3) nesting materials; and,

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4) suspected "natural" foods of the rodent (cockroaches, slugs, snails).

For example, in a large office complex I would initially bait one-third of the traps with snack foods (matching the food of the office mice); one-third with bacon pieces; and one-third with nesting materials. This way, I let the rodents tell me which bait they prefer. If the first inspection indicates a strong preference for one bait, that is the bait to use during the actual trapping program. If all baits seem to be equally taken, then using all the baits is a good strategy.

One of the attractive aspects associated with the use of nesting materials as baits is that rodents forage for nesting materials on a routine basis. Research has shown that pregnant mice spend significant time foraging for nesting materials with the onset of cold weather, as well as just prior to when they birth litters. They diligently forage for nesting goods even when they have a good nest already constructed.

"Natural food" baits are less convenient for large trapping programs than are food or nesting baits. But in cases of elusive roof and Norway rats, natural baits might prove to be the right tool.

"PRE-CONDITION" THE TRAPS. In addition to using a few different baits, another baiting strategy to expedite trap success is to "pre-bait" or "pre-condition" your snap traps. This is done by placing small amounts of the target bait for that trap on the sides or trap edges adjacent to the trigger, and/or at the ends of the unset traps. This may help to acclimate cautious rodents to feed from the traps more readily. This does add an extra service visit prior to the actual trapping program, but in the long run, spending a few days pre-conditioning your traps can help reduce callbacks.

One of the basic "golden rules" for trapping rodents is to make the program as quick and decisive as possible. Spending time up-front offering the rodents a choice of baits in addition to pre-baiting your traps can help you maximize your bait selection, and also can pre-condition the rodents to more readily interact with the traps.

Still, research is needed to scientifically address some of the foraging strategies of the domestic rodents inside buildings. However, I don't expect any single "magic bullet" bait emerging that will be universal for all the various trapping scenarios. It would be difficult, if not impossible, to design research which would provide one explanation for feeding and foraging behaviors which are also influenced by thousands of different environments.

This reinforces the importance of conducting multiple-baiting and pre-conditioning efforts within your infestations to get the best "data" to guide you toward cost-effective trapping programs.

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Taking The "Nuisance" Out Of Nuisance Sparrows

PCT-Online

In addition to the pigeon, the common English sparrow (*Passer domesticus*) is among our most numerous and annoying urban bird pests. It can also be among our most frustrating pests to control. But it need not be. Let's briefly examine the factors that contribute to the sparrow's persistence in urban environments and the methods of managing this bird.

SPARROW HABITS. Under the right conditions, the house sparrow can reproduce quickly. Nest building and egg laying begin in March and April in the northern United States, and slightly earlier in the southern states. The clutch contains between three and none eggs, which hatch in only 11 to 17 days. The young are fledged about 14 days later. When conditions are favorable, the sparrow can produce up to five broods per year. In the temperate regions of the country, this reproductive capacity is offset by high natural mortality rates of 40% to 60%, determined primarily by harsh winters.

In our cities and towns, the sparrow takes advantage of the feeding behaviors of people. Thus, the sparrow has little difficulty in finding scraps of food left around parks, picnic tables, fast food stands, market places and similar locations. Unkempt city garbage containers and commercial dumpsters can be especially conducive to promoting sparrow infestations in the buildings nearby the refuse

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containers. During the spring and summer, the sparrow supplements its human food diet with various insects, an important protein source needed for reproduction.

House sparrows are group loving birds that nest, roost and feed together in flocks. The sparrow does not migrate, and the home ranges are small. Most of the bird's daily activities occur within only one to two miles of the nest. This behavior is important in control operations because where it is possible to eliminate a resident population, re-infestation by immigrant sparrows is slow.

The sparrow is especially adept at locating nooks, crannies, ledges and corners around structures and equipment to construct its nests. Various types of vegetation, weed stems, twigs and man-made materials such as paper, string and cardboard are used to build a crude and messy nest. The nests are often situated in gutters, on roofs, building ledges, loading docks, inside buildings on roof supports and within commercial billboards and electronic signs. IN nature, the sparrow nests in trees and shrubs repeatedly using the same nesting holes throughout several generations.

SPARROW MANAGEMENT. Relative to many other urban pests, managing sparrows is not especially difficult. There are several low-impact, non-chemical approaches effective for long-term management of urban sparrow infestations.

Because the sparrow is so prolific, control efforts are best begun when there are only a few birds. Allowing a few sparrows to remain around the premises during the early spring can result in a significant infestation by summer's end. Too, most bird control techniques have their greatest cost-effectiveness with minor infestation levels.

The high natural mortality rate of sparrows in the temperate regions of the country can be used to our advantage. Regularly removing sparrow nests from building areas can significantly reduce a local population over time. This is especially important during the spring peak-breeding season. Nests and eggs (states permitting) should be located and destroyed at 10-14 day intervals. Nests can be removed using long hook Poles or with water jets. The nests and all nesting materials must be totally discarded, thus forcing the sparrow to build a nest from scratch.

Sparrows may be persistent in using the same building sites for nests for long periods, but usually after only one or two nest removals the female sparrow vacates the area in search of less disturbed areas. Nest destruction efforts can be particularly appropriate for shopping malls, food plants, building signs and other areas where it is difficult to completely eliminate food sources.

Sparrows are attracted to shadowy corner areas where walls meet tight nooks and crannies, as well as many other covered areas that offer protection from the elements and enemies. Inspecting for such areas will aid in quickly locating and removing sparrow nests or for modifying these areas to deny the sparrows good harborage.

There are several habitat modification programs that can be considered. Vegetation growing close to or on the sides of buildings such as vines or ivy can be pruned or removed. Pruning out the dead fronds of palm trees will reduce roosting sites. Tight spaces behind commercial signs and utility equipment (e.g. spaces beneath window air conditioners) should be eliminated with netting or screening. Also, building ventilators should be netted or screened to prevent birds from crowding their nests into ventilator slits. And loading dock canopies and other commercial areas attractive to sparrows can be bird-proofed with plastic netting. Careful planning, using the right tools and accessories, as well as paying critical attention to details are all vital when installing nets. Incorrect or sloppy net installations are worse than no control program at all.

Sparrows can be denied from using and defacing building ledges with one or more of several ledge denial repellents. These include mechanical spikes, wires and chemical repellents. When using these tools, the key to long term results, and thus cost effectiveness, is careful and thorough installation. Installers should also closely follow the manufacturer's directions. The small sparrow is quite adept at

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roosting on ledges only ½" wide. They will take quick advantage of any gaps or small spaces left to them by ledge repellents on their favorite ledges. Additionally, the mechanical prickly repellent devices must be inspected periodically and cleaned of any debris such as leaves and twigs. Otherwise, accumulating debris will protect sparrows from the prickly effect of the projections and they will continue to use the building area.

Worse, sparrows will sometimes nest directly on top of the accumulating debris. The mechanical ledge repellents and their installation can be expensive, but for areas under heavy bird pressure, the results justify the cost.

The sticky bird repellents (e.g. HotFoot, Roost No More and others) are most appropriate for small to medium sized jobs and infestations where the mechanical repellents might be too cost prohibitive. They are also excellent tools for quick solutions until the client can implement a more permanent program. And they can be used to supplement the more permanent programs of netting and mechanical repellents.

Regardless, it is important to consider that most chemical repellents last for about one year. In areas of excessive heat, dust, or the food debris resulting from food production, gel repellents may only last for several weeks. Thus, with the increasing costs of service time, the cost-benefit ratio of the temporary gels should be considered carefully.

So start early, and analyze the most cost-effective approach, while ensuring long-term control based on the client's sparrow pressure. The profits in bird control are exceptionally good—providing attention is paid to the details.

Opinion:Micro-Environments

PCT-Online
Harry Katz

Much has been written about our tight homes, structures that are sealed against the loss of heat or cold. It is a myth conception that each of the different environments throughout the structure requires the same kids of treatments.

The conditions involving temperature, moisture, shelter, food, etc. all have an impact on the incidence and survival of pest species. That is why I believe that the principal role of the next generation of pest control operators, the pest management consultants, will be the identification and monitoring of each of the different micro-environments in the structures that we treat; this before any pesticide is applied, if indeed treatment is needed. We need to look upon the structure we treat as an assemblage of various zones, each with its individual environment.

A kitchen floor, for instance, is considered clean when the exposed floor is swept and washed. But the micro-environment is far different, only inches away, on the floor under kitchen appliances. Here, in the stagnant spaces, the floor can be strewn with cockroach litter—egg capsules, fecal matter, body parts, food particles and food spill residues—all impregnated with the stench of cockroach pheromones. All of this colony's litter reeks with powerful attractants for new infestations.

PEST ESSENTIALS. Moisture, so essential to all insect life, is readily available from condensation on cold water lines or refrigerator condenser coils, indoor plumbing leaks or seepage from outdoor rainwater, mop rinse water, pet watering dishes, etc. In addition, the bottom layer of air is the coolest the upper layer the warmest.

Air near the ceiling is always warmer. IN The Mallis Handbook of Pest Control, 8th edition, Drs. Eric Benson and Patricia Zungoli report that 92% of brownbanded cockroach egg capsules are deposited in the upper third of the room.

Another household pest that is even more dependent on moisture than the cockroach is the house dust mite. It cannot flourish if the humidity is below 50%. So how does it manage to survive in homes with lower relative humidity because of air conditioning or in very dry climates? In bed, under a person or pet, the humidity from the body is absorbed through the mite's integument. The situation is different with another moisture loving household pest—the book louse. According to Eric Smith in the NPCA Field

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(Micro-environments.....continued from page 10)

Guide to Structural Pests, this psocid has trouble controlling water loss through its exoskeleton. It feeds on fungi, which requires a humid environment. The pest management professional must be on the look out for cul-de-sacs and pockets of stagnant air that are exposed to moist surfaces. Here a moisture meter would be very helpful. Once a book louse or silverfish blunders into such an environment, a colony could quickly develop. The moisture condition must be corrected, after application of a pyrethrin/desiccant product has killed the infestation.

Flea control by PCOs is difficult if there is a hidden "Shangri-La" which the pest uses for rest or sleep. In one situation, when a PCO asked for help, I used my Lil' Hummer and a 'down-and-under' tool to reach into a spot behind the stove where there were thousands of flea droppings and eggs.

In southern states, drywood termites and also carpenter ants infest roof rafters in structures. How do they survive the very high temperatures? It may be the insulating property of the wood of the insulating property of the batting between rafters. I believe they have extended their galleries into the wood below, which is cooled with air conditioning. They have no problem moving quickly from the tropical to the temperate zones. Another example of the variety of habitats in a structure is the sewer lines. Here the air is almost always cool and damp. The interiors of the drainage lines are coated with gelatinous muck, ideal food for maggots or psychodid flies. Just above the water level, generations of these flies thrive. These pests are especially troublesome where drainpipe laterals are abandoned in remolding jobs. These create ideal breeding sites. Sometimes rats can enter homes through a broken grid after they have found a break in the buried sewer line. Potted plants are also a frequent source of some nuisance pests, having been transplanted from an outdoor environment.

AN ECOLOGY DETECTIVE. The pest management professional should look not only at switch outlets and baseboards, but should take a holistic view of all the indoor and outdoor ecology. The structure is a grouping of different zones, each requiring individual attention. The pest management professional must play the role of detective who interrogates, investigates and identifies potential problem sites using all available tools. Once identified, they must be corrected or reported for correction. If treatment is indicated, alternatives to toxicants should be tried first and, if necessary, minimal amounts of the least toxic pesticides should be applied to the appropriate 'compartment.'

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Thermal Pest Eradication Becoming A Popular Method Of IPM.

PCT-Online
Amanda Paskiet

For the PCO walking through the structure, the constant wave of hot air does little more than produce sweat beads on his forehead. But for a number of insects, molds, and viruses, the 130-degree heat is an inevitable killer.

It's called thermal pest eradication, and it is becoming a popular method of IPM for some PCOs in the United States. ThermaPure, the thermal technology branded by Precision Works, Inc. in Camarillo, CA, has been used successfully throughout the company's 25 licensed businesses since 1996.

A HOT, NEW TECHNOLOGY? Thermal pest eradication isn't exactly a new technology. It was developed in 1986 by the late Dr. Charles Forbes, who was an associate professor of earth sciences at California State University, and Dr. Walter Ebeling, an entomology professor at University of California. They patented the technique they called Thermal Pest Eradication (TPE) and began licensing it to pest control companies during the 1990s.

In January 2000, David Hedman, president and founder, Precision Works, Inc. and his business partners purchased the patented technique from Ebeling and Forbes. They named the new company ThermaPure and began licensing the technique to other businesses.

HOW IT WORKS. The ThermaPure process utilizes

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(Thermal Pest Eradication....continued from page 11)

a custom-designed, propane-fuel heater to pump 130 degree heat (or hotter, depending on the target problem) into a structure through air ducts. Thermal tarps are placed around the edges of the house and pump to keep the heat from escaping. Anything that could be damaged by the heat—candles, oil paintings, food, etc.—is removed from the structure or covered with tarps prior to the treatment. Inside, insects are roasted, then sucked up with an HEPA-filtered vacuum.

The entire process usually takes six to eight hours to complete and the price of the treatment is comparable to the cost of a fumigation service, Hedman said.

MORE THAN PEST CONTROL. What makes thermal heat eradication unique from many other IPM methods is its ability to clear entire structures of bacteria and viruses—including hantavirus, Hedman said. "This catch-all feature allows PCOs to cross sell their services, " he said. "In turn, they can make more a profit from one client since they are performing more than one service."

The technique can also be used as a rodent control method. The extreme heat drives the rodents out of the structure, leaving way for a PCO to set up exclusion methods to keep them from returning. In addition, the heat will oxidize odors left by rodents and other animals.

ThermaPure has also been tested in mobile homes built with particleboard that contains volatile organic compounds (VOCs). "When the particle board is heated, the vapor pressure causes the VOCs to outgas and leave the structure," Hedman said.

A NEW TOOL. Whit additional breakthroughs in the technology occurring regularly, Hedman hopes that the technology will catch on to more companies. "With the move towards more organic and environmentally friendly products, this is just one more tool in the box for PCOs to use that avoids chemicals, "he said.

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IN THE NEWS.....

Birds Can Be Long-Distance Carriers Of Lyme Disease
Reuters News Service

London—Birds can carry Lyme disease for several months, pass it on to ticks, which in turn infect humans with the disease, said several scientists in a research report published in the journal *Nature*.

The scientists, who conducted their research at Umea University and Kalmar County Hospital in Sweden, say that stress and fatigue caused by bird's long migratory flights can make them susceptible to Lyme disease, causing them to become carriers.

"Migratory birds are able to carry Lyme disease as a latent infection for several months, " said researcher Bjorn Olsen.

Lyme disease begins with symptoms including a bulls-eye shaped rash, fever, headache and muscle pain and can lead to more severe chronic symptoms including permanent joint pain, severe arthritis and heart problems.

Lyme disease was first recognized in 1976 and since then approximately 100,000 cases have been reported, most of them occurring in North America.

Whitmire Micro-Gen's Allure LP Indian Meal Moth Trap.
PCT-Online

Whitmire Micro-Gen's new Allure LP (low profile) Indian Meal Moth Trap is designed to discreetly capture the male Indian meal moth before it has the opportunity to breed. Allure LP can be attached to a variety of surfaces and is ideal for grocery and pet stores, food processing plants and other commercial areas, the company says. Utilizing the same advanced pheromone technology as Whitmire Micro-Gen's PT 4 Allure Pheromone Trap, this trap lasts 16 weeks before needing replacement.

For more information, contact Whitmire Micro-Gen at www.wmmg.com

ABC Architectural Bird Control's New EnduraNet Bird Netting.
PCT-Online
(Continued on page 13)

(In the news...continued from page 12)

The new EnduraNet from ABC Architectural Bird Control is a lightweight bird netting that provides exclusion control for all sizes of pest birds. Constructed of UV-resistant polyethylene, EnduraNet features 51-pound tensile strength and knot-free construction. EnduraNet is easy to handle, will not absorb water and resists the affects of sun, rain, fog, ice and humidity, the company says.

For more information, contact ABC Architectural Bird Control at www.abcbirdcontrol.com

Cleary Roach Terminal Gives PCOs Another Tool For German Cockroach Control
PCT-Online
Amanda Paskiet

Metabolism is a word generally associated with humans fighting the battle of the bulge, but a new product from Cleary Chemical, makes it easier for PCOs to fight—and win—battles with German cockroaches.

The Cleary Roach Terminal is based on a new biochemical class of insecticides call nutritional metabolism disrupters or "NMDs", which inhibit the cockroach's ability to produce uric acid. "Cockroaches need that uric acid to reproduce, molt and for overall energy. When they can't produce it, they basically exhaust themselves," said Kieran Halpin, technical/regulatory coordinator, Cleary Chemical.

INSTANT GRATIFICATION. Although many consumers shake their head at the thought of a product that doesn't show immediate results, Halpin said the Cleary Roach Terminal is often more effective than other quick-kill products. "Cockroaches may stop feeding on bait materials if the population thinks it could be toxic," he said, noting that Cleary has developed years of research to developing ingredients that attracts the cockroaches and keeps them returning to the bait.

The Terminal takes between three to five weeks to work, according to Halpin. Because cockroaches usually have a significant amount of uric acid stored in their systems, the amount of time it takes for the product to work depends on the amount of uric acid the cockroaches have stored before they started feeding on the bait.

Adult males are usually the first to die because they give uric acid to females when they mate, followed by adult females, then the nymphs. "Younger cockroaches die last because they feed on fecal droppings of other cockroaches," Halpin said. This feeding trait, called coprophagy, also ensures that the bait affects the entire cockroach population—even if only a few of them feed from it, Halpin said. In addition, Cleary tests have shown that the Terminal stays stable for up to two years.

"It's also a great IPM tool and works great with existing programs for cockroach control, whether they're using baits or spray already, " Halpin said.

For more information, contact Cleary Chemical at www.clearychemical.com.

PEST MANAGEMENT TIPS

Snap Trap Baiting Tips

Having trouble with bait being stolen with not dead or captured rodents to show for your trouble? The following tips may help solve the problem.

-Make sure that rodents are the culprits taking the bait from you traps. Many times the thief is actually not a rodent; cockroaches, crickets, and even ants could be making off with your bait. Try dusting the area around the trap with a non-repellent material such as flour; this will reveal footprints to identify the pest. Also, glue boards located next to your traps will capture insects and mice.

-Are you using the correct trap? A rat trap does not often capture a mouse and a mousetrap will only irritate an adult rat. Make sure that your trap matches your rodent.

-Expanded trigger snap traps catch more mice than a conventional metal trigger trap. The expanded trigger snap traps are effective simply because the larger trigger provides a bigger surface for the rodent to step on. An expanded

(Continued on page 14)

(Tips....Continued from page 13)

trigger also provides more leverage, which means it takes less pressure to spring the trap. Some traps even allow you to set the pressure of the trigger from soft to firm.

-The ultimate bait is one that is accepted by the rodents and not easily removed from the trigger. Try a variety of baits to find what works best in your situation. In sites where food is abundant but nesting material is scarce, soft string, cotton balls, or strips of cloth are attractive to female mice and rats. To enhance the material, try applying one or two drops of vanilla extract as an added lure.

-Tie the bait down to the trap or use sticky bait, like peanut butter, that can not be easily carried away. When using a sticky bait, smear a small amount on the top and bottom of the expanded trigger. Some solid bait, like cheese, marshmallows or chocolate, can be melted onto the trigger with a match. Use a piece of thread or dental floss to tie down solid baits.

-Inspect you trap. Whether or not a mouse or rat gets caught depends on the sensitivity of the trigger, the size of the trigger and the speed at which the kill bar flips over. If a trap is old and slow, it can be improved by simply applying a small amount of vegetable oil or bacon grease to the spring. **Do not use machine oil, as this repels rodents.** Although dirty traps that smell "mousy" catch more mice, do not let your traps get so gummy that the action of the trigger or the bar is slowed down. Do not attempt to clean a filthy trap with soap and water. Not only will the soap repel rats and mice, the water will warp the soft pine base of the trap, making it unstable and ineffective. Once a trap becomes too gummy to use, toss it, and replace with a new trap. Snap traps are not very expensive and your time is important!

VECTOR-BORNE DISEASE OF THE MONTH

Lyme Disease
CDC-Online

Lyme disease is an infection caused by the cork-screw shaped bacteria *Borrelia burgdorferi* that are transmitted by the bite of the deer ticks, *Ixodes scapularis* and western black-legged ticks, *Ixodes pacificus*. The deer tick, which normally feeds on the white-footed mouse, white-footed deer, other mammals and birds, is responsible for transmitting Lyme disease bacteria to humans in the northeastern and north-central United States. On the Pacific Coast, the bacteria are transmitted to humans by the western blacklegged tick.

Ixodes ticks are much smaller than common dog and cattle ticks. In their larval and nymphal stages, they are no bigger than a pinhead. Adult ticks are slightly larger. Ticks feed on blood by inserting their mouthparts (not their whole bodies) into the skin of a host animal. They are slow feeders: a complete blood meal can take several days. As they feed, their bodies slowly enlarge.

Risk. The number of annually reported cases of Lyme disease in the United States has increased about 25-fold since national surveillance began in 1982, and a mean of approximately 12,500 cases annually were reported by states to the Centers for Disease Control and Prevention (CDC) from 1993-1997. In the United States, the disease is mostly localized to states in the northeastern, mid-Atlantic and upper north-central regions and to several counties in northwestern California.

Most B. burgdorferi infections are thought to result from peri-residential exposure to infected ticks during property maintenance, recreation and leisure activities. Thus, individuals who live or work in areas surrounded by woods or overgrown brush infested by vector ticks are at risk of getting Lyme disease. In addition, persons who participate in recreational

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(Disease of the month…..continued from page 14)

activities away from home such as hiking, camping, fishing and hunting in tick habitat, and persons who engage in outdoor occupations such as landscaping, brush clearing, forestry and wildlife and parks management in endemic areas may also be at risk of getting Lyme disease.

For more information about Lyme disease, contact the CDC at www.cdc.gov.

From left to right: The deer tick adult female, adult male, nymph and larva of a centimeter scale

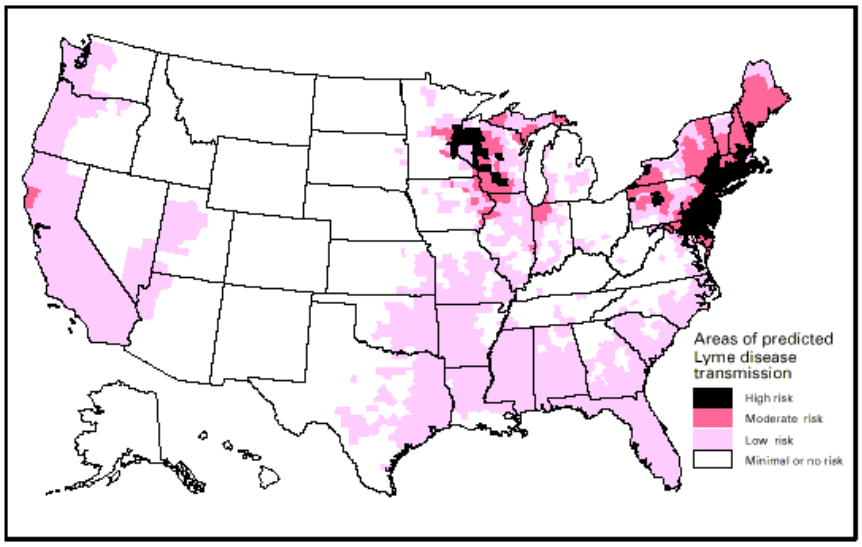
On The Web…….

www.trainingforum.com/ASN/AOM/index.html. Association of Operative Millers website. Interested in stored products pest management from an industry perspective? Here is the place to visit. Learn about the important issues of the day and find out where to get training.

www.fs.fed.us/na/morgantown/fhp/palerts/palerts.htm: The US Forest Service tracks important agricultural and forest pests at this site. In addition to providing basic pest information, useful maps reveal pest distribution.

www5.bae.ncsu.edu/programs/extension/publicat/postharv: The Extension Service at North Carolina State University has put together a great site dedicated to fresh fruit and vegetable quality requirements. If you are interested in produce (we are), take a look.

National Lyme disease risk map with four categories of risk



Note: This map demonstrates an approximate distribution of predicted Lyme disease risk in the United States. The true relative risk in any given county compared with other counties might differ from that shown here and might change from year to year. Risk categories are defined in the accompanying text. Information on risk distribution within states and counties is best obtained from state and local public health authorities.

PESTS OF THE MONTH

See if you can identify the following common pests. Last month's pests: A) Confused Flour Beetle, B) Cigarette Beetle, C) Pigeon

A)

B)

C)

STILL AVAILABLE

DSCP-WCSO has produced two informational CDs: Stored Product and Facility Pest Management and Fresh Fruit and Vegetable Pest Management. Each contains a variety of information concerning specific areas of pest management presented in an easily accessible format. If you are interested in receiving one or both CDs please give us a call or send an email.

DSCP-WCSO has produced several pest fact sheets addressing identification and management of several common stored product and facility pests. For more information or a listing of available sheets, please give us a call.

Pest Alert Sheets. What is the “hot” pest today? Contact us for pest alert fact sheets. They could be the next creatures you see.

Parting Shots.....

That's all for now. Remember we are here to address your pest management concerns. Give us a call at DSN 686-8122, commercial (510) 337-8122 or drop us a line at paa5245@exmail.dscp.dla.mil.