All Protecta® EVO® Stations utilize a proprietary single lock design, removable tray for quick service, and proven dog and child tamper-resistance.

To aid in its disguise, simulated connectors slide into the sides of the EVO® Circuit™, making it appear as an electrical box.

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Even with its low-profile design, the EVO® Ambush™ still allows room for the Trapper T-Rex snap trap.

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PEST CONTROL: FROM TRADITIONAL TO DIGITAL MARKETING
By David Miclette, Vice President, Catseye Pest Control
With ever-changing technology comes numerous ways to disperse company-branded information and images quickly and inexpensively to people all over the country, whether they’re seeking information about a particular insect, rodent, event or season. Read how one pest control company harnessed the power of the Internet to share the expertise of their pest management professionals, emphasize the depth of the technical knowledge that supports the services they provide, and grow awareness about their brand.

WHICH SOCIAL MEDIA NETWORK SHOULD YOUR BUSINESS USE?
There are an overwhelming number of social media sites making their mark on the Internet, and every month it seems a new social media network is launched. As a business owner you probably don’t have the time to monitor everything being said about your company on every single outlet, nor do you have the time to create, find, and post appropriate content to keep each group of social media followers happy. If you are just starting to dip your toes into the social media pool, being selective about which outlet you choose is wise.
PAST PRESIDENT’S MESSAGE

Let me take a minute of your time to introduce myself. I am a small businessperson. I own a pest management firm that epitomizes NPMA’s typical member. We produce about $1.8 million in annual revenue and staff a team of 19. And, I had the amazing opportunity to serve as NPMA’s president for the past year.

For me, this year passed by in a blur of progress…and, while I have been lucky to have seen much of this progress first-hand, quite frankly, I’m not convinced that many companies that are my size really and truly understand what NPMA can offer their business.

As a membership, we have spent a lot of time and money building strong foundations for our program and, over the past year, the staff and leadership have worked to build the member experience.

So, I would like to take some time and tell you how your association is benefiting your company every day by educating, protecting, and growing your business.

EDUCATING YOUR TEAM

One of the key goals that we identified during our strategic planning process is the need to be the definitive source for education, information, and resources for pest management professionals. As you may know, NPMA provides all members with the latest industry news through many channels including our weekly newsletter, our bimonthly magazine, and our Web site.

What you may not know is that NPMA offers an ongoing webinar series, an online training program, and numerous other resources, including 2013 Food Safety Standards; model contracts; pest identification services; and an extensive database of resources to help you identify and learn about a particular pest!

PROTECTING YOUR BUSINESS

As you well know, one of NPMA’s key priorities is to protect your company from overreaching legislation or regulations fueled by a general lack of understanding among policy-makers about the value of the pest management industry.

The recent "win" with the pyrethroid label changes is just one example of the many things that NPMA does to protect your business. To be successful at these kinds of activities, you’ve got to know the laws, got to know the rules and got to know the players. That’s what NPMA is good at.

GROWING YOUR BUSINESS

One of the most intangible aspects that NPMA brings to your business is the effort that it makes in growing your customer base and increasing awareness of the value of pest management.

Through our online “Find-a-Pro” your prospective customers can find your company based upon the zip codes you service. While I don’t have exact metrics, I can tell you that service alone more than pays for my annual membership dues! Additionally, NPMA provides Pest Gazette, a customizable seasonal newsletter that you can send to your customer base promoting your company’s services.

Finally, through our public relations arm, the Professional Pest Management Alliance, NPMA works to grow the market and increase your future business opportunities!

In all my years in the pest management industry, I’ve never been as impressed as I was this year at the level of personal commitment our members display. Their willingness to devote such extensive time and effort into our profession is phenomenal. Their interaction with each other, and their involvement in NPMA, is galvanizing. «
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EFFECTIVE JULY 4TH, 2013

New Insurance Program

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WE’VE MOVED!
PEST CONTROL: FROM TRADITIONAL TO DIGITAL MARKETING
BY: DAVID MICLETTE, VICE PRESIDENT, CATSEYE PEST CONTROL

For people working in pest control, the industry is fascinating. The techniques, experiences, customers and science that contribute to a day in pest management create an atmosphere of excitement, satisfaction and drive to continuously improve customer service as well as the products and programs we offer.

But how do you market that excitement in pest control to the general public—the audience that views a phone call to a pest company as an embarrassment, the audience that asks for un-branded vehicles to park outside their houses and view pest issues as a sign of unsanitary conditions?
For many years, as was the case for other industries, television and print advertisements were our top brand-building media channels. As they became more common, websites were built and web addresses were listed beneath the phone numbers in the advertisements. But then attention refocused—less and less were people responding solely to television advertisements and ads placed in the Sunday newspaper (which were becoming thinner and less read, as well). Target audiences for brands and industries worldwide embraced the power of social networking, online reviews and the increasingly speedy ability to compare services and prices of competing companies through their online web presences.

So what did we do to adapt with the changes?

Catseye Pest Control: Marketing in Our Early Years

For more than 25 years, Catseye Pest Control had been serving the pest control needs of residential and commercial property owners. Headquartered in upstate New York, with regional operations spreading west as far as Reno, Nevada and Lake Tahoe, California, building brand recognition has been a critical part of our growth strategy.

Our first television commercial ran in 2003, the same year the Catseye Jingle was born. It was an informative spot about Carpenter Ants using both live action and 2D animation. A woman squishes an animated ant on her counter with the theme, “Seeing a few ants on your kitchen counter, the problem may be bigger than you think!”

We introduced our Catseye Pest Control mascot, Caddie, in 2003 as a consumer-facing, kid-friendly character. Visible in our advertisements and in-person at community events, we built our brand around this pest-fighting feline superhero, and immediately, the local community embraced him.

The character development of Caddie is a critical marketing opportunity for our company. Whether he’s the mascot at a children’s education expo or a baseball stadium, he provides a recognizable face for our company. We want kids to see Caddie and be interested in learning more about pests and rodents, just as we want adults to see Caddie and remember the services that the brand represents.

Early marketing strategy focused ads in the Yellow Pages and the development of dozens of billboards. From the beginning, we had local phone numbers in every town we serviced. We invested in all kinds of marketing pieces, from brochures and ads to Catseye-branded beach balls and sunglasses. These grassroots efforts do have their perks to help stay top of mind amongst our consumers. Today, we continue to give away plenty of Caddie stuffed animals to kids at the events we sponsor, such as the Albany Devils, Albany Tulip Festival, Reno Aces, Racecar driver Jay Corbin at Lebanon Valley Speedway, and New York State Summer at the Plaza Kids Day, to name a few.

Embracing New Technology

Over the past few years, the amount of time spent with and attention paid to online content, online brand materials and brand engagement through social networking has increased dramatically. We know that first-time customers aren’t picking a company name out of the phone book at the first sign of a pest problem or rodent anymore. They’re spending time researching the massive amounts of DIY techniques available online and comparing reviews and comments about pest control companies provided by customers in online public forums, such as Google and Yelp.

While we had one eye online, we had our other eye on the development of high quality television commercials. If we wanted to continue to grow, we knew Catseye’s marketing techniques had to keep up with the developments in both online social engagement and the quality computer animation options available.

In late 2010, we partnered with Overit, a Capital Region digital marketing agency, to develop our most challenging marketing efforts yet, as we moved into 3D animation. Over the course of nearly two years, the agency’s motion department worked with Catseye marketing staff to refresh Caddie’s image, making him more realistic by defining his personality, changing his features and adding CG fur, and then animating him into live-action scenes. An entire cast of characters, including two new feline superheroes, joined Caddie in their world where they battle pest problems.

From 3D modeling and background illustration to sound design, cinematography and final editing, the process of developing our commercial concepts was complex and detailed. Whether perfecting 3D Caddie’s image or storyboarding 30-second and 60-second animated commercials, each decision required a tremendous amount of time and energy as we sought perfection in the final product.

Pest Control… Caught on Camera

And then we launched our commercials—on television and online. In addition to our tried-and-true investments in television media buys, we purchased pre-roll video advertising—the ad breaks you see before watching a YouTube video.

The reactions were voiced immediately. It wasn’t new, but the Catseye jingle was being hummed at the water cooler. Companies were asking how we created the concept, and inquiring about the 3D process. More than ever, Caddie was a character recognized by the people we protect from pests, from the very young to the regions’ older property owners.
owners. The coupling of the fun, furry cat, the catchy song and a nice balance of repetition on both platforms resonated with audience members and helped to continue reinforcing our brand image.

We extended this character and company recognition into a series of weekly videos, still produced and released weekly today. Whether it’s an informative piece about a particular troublesome pest, a profile of a Catseye employee or simply a parody of the weekend’s Super Bowl commercials or Harlem Shake craze, these videos provide us with additional content to get in front of potential customers’ eyes. It allows us to share our company culture—one of education, devotion to protecting our customers, engagement with the local community, and a fun work environment. With content that is relevant to our industry and also touching on timely topics being actively discussed on the social web, we keep our name at the top of search rankings.

Creating Content—And Sharing It: Content Marketing and Social Media

Content marketing is on the rise throughout many industries, and we were quick to embrace it. With the rise of the Internet came numerous ways to disperse company-branded information and images quickly and inexpensively to people all over the country, whether they’re seeking information about a particular insect, rodent, event or season. Publishing content online allows us to share the expertise of our pest management professionals, emphasize the depth of the technical knowledge that supports the services we provide, and grow awareness about the Catseye brand.

In addition to our weekly video content, we began creating other types to share with our target audience. Our blog, typically updated at least two times per week, shares informative pest information, case studies, Catseye involvement in community events and more, encouraging our local neighbors and potential customers to interact with us.

We want our community members, whether they’re customers or not, to feel comfortable asking us their pest questions. As pest management professionals, we need to be a resource to residents in our regions, and provide preventative tips, warning signs and other information to minimize serious pest infestations, property damages and serious health consequences.

Creating this informative content can be extremely helpful, but only if people are able to find it, and that is where our social media pages become incredibly important.

Caddie Gets Social

It’s common knowledge by now that social networking is incredibly useful and social pages on networks such as Facebook, Twitter and Google+ host millions of conversations every day. This opportunity to engage doesn’t exist just for personal accounts—brands can reach members of their target demographic just as well.

In early 2012, the marketing team devoted significant time and resources to strengthening our social pages, and over the next year, our Facebook fan growth grew by more than 450 percent. The number of people and other brands following @CatseyePest on Twitter grew by more than 225 percent, and a recent focus on Google+ will allow us to grow similarly. We’ve already tripled our numbers in the past two months.

But it’s not just the number of fans and followers that is important to us. One glance at our Facebook page allows you to see the conversations we are having with our customers. We have people reacting to funny pest stories, sharing their own pest experiences, asking our experts questions, and celebrating milestones and achievements with our employees. These open, free-flowing conversations take the “marketing” aspect out of the picture. We aren’t selling our services on these channels, per se. Instead, we are building long-term relationships. Our fans respect and enjoy the content we provide because it is entertaining and useful to them. Our hope is that, when they do eventually need services, they will turn to us for help.

The Move to a Digital-Only Marketing Plan

Today, our advertising is solely online. With the potential for so much discussion and information-sharing happening on the Internet, we have moved to devoting 100 percent of our marketing resources to digital campaigns, using the tools we’ve described previously.

From our blog and online video content to our social channels and a website supported by SEO strategy and PPC (pay-per-click) advertising, Catseye Pest Control has seen tremendous growth. In fact, Catseye revenue went from $800,000 in 2008 to $9 million in 2012.

Our marketing strategy is always evolving. Keeping up with the latest trends, especially the quick-changing rules and regulations of digital marketing, keeps us busy, but it’s tremendously exciting for our team. And we can’t wait to see what comes next.
ASK THE EXPERT

Q I recently found velvet ant in my customer’s yard while performing a perimeter pest control inspection, how can I manage them for my customer?

A Contrary to their name, velvet ants aren’t actually ants at all. They belong to the family Mutildae (ants are in the family Formicidae). Mutilids are a family of solitary wasps. The females, which are what you mostly observed, are wingless and almost always hairy and brightly colored. Velvet ants may be found with bright red, purple or orange and black markings. Like many other venomous animals, the bright coloration is a warning to stay away; the females have an extremely painful sting, earning them the nickname “cow killers”. Males have wings but are stingless and rarely encountered.

Velvet ants are parasites of other insects, most commonly ground nesting bees and wasps like bumble bees and cicada killer wasps. The females locate the nest of the host (sometimes through use of force) and lay eggs in the brood chamber. When the larvae hatch, they consume the eggs and larvae of the host. Adult velvet ants typically feed on nectar.

Velvet ants aren’t pests, but since they can deliver an extremely painful sting, you should encourage your client to make the yard less inviting to the host species that females are searching for. Bare patches in grass are often an inviting place for cicada killers, so they should be repaired, especially if cicada killers have been sighted in the past. Luckily, unlike hornets, and yellow jackets, velvet ants are not social insects, so there is no nest to be concerned about and typically the sightings are few and far between.

Q I keep finding carpet adult carpet beetles near the windows at my client’s home. She has no carpets in the house, mostly hardwood and tile floors throughout their home with area rugs in some rooms, but I can’t find any signs of damage. Where they coming from and what are they feeding on?

A With the advent of synthetic carpet fibers, carpet beetles are rarely found feeding on carpets in modern homes. The preferred food sources for carpet beetles are natural animal fibers like wool. When carpet beetles earned their common name, many rugs and carpets were woven from wool, where the beetles were often found feeding on and damaging the fibers. With the exception of antique or specialty rugs, natural animal fibers are rarely encountered today.

Carpet beetles, which are members of the family Dermestidae, will feed on other animal products in structures, which is probably what’s going on in your case. Check the property for hunting trophies or animal hides, which may harbor an infestation. In pet supply stores, natural dog bones are often infested, so carefully inspect any treats that you bring home for your pets. Along those same lines, pet hair can also be a good food source carpet beetles. If your customer has pets, recommend that they perform a deep cleaning of the any areas where pet hair might have accumulated, like in the cracks and crevices around floor vents or baseboards. Finally, if the structure has a history of infestation by overwintering pests like, multi-colored Asian lady beetles, brown marmorated stink bugs, cluster flies or other pests, carpet beetles may be feeding on dead insects in the wall voids. It turns out that dead insects are a favorite food for carpet beetles, in fact, entomologists take care to keep them out of preserved insect collections where they can be extremely destructive.

Q As part of my company’s public relations effort, we have been sending press releases about seasonal pests to the local new outlets (newspaper, television and radio), but we haven’t had a single response. What are we doing wrong?

A Congratulations on taking proactive steps in your marketing efforts through media relations outreach. A few pieces of advice to help maximize your efforts:

1. Make sure your distribution list is up to date. Journalists come and go and change assignment areas from time to time. Make sure the individuals you want to see your messages are the ones getting them. Prime targets in the professional pest management industry are those who cover health, home and garden, science, lifestyles, and sometimes, features.

2. Call! Reporters and assignment editors receive countless press releases every single day. Don’t wait for them to read your materials and call you—reach out to them!
3. **Relationships are always key.** Journalists, particularly in smaller communities, are more likely to contact those with whom they have a relationship. Cultivate relationships by inviting news outlets to events you sponsor and by being a credible and reliable resource whenever called upon.

4. **Timing is everything!** When there are national news stories involving pests, that’s a great time to send a release offering a local perspective. It’s also important to know when NOT to reach out to journalists. Don’t try to compete with “hard” news such as natural disasters, major national events, etc. Be sure not to over-saturate reporters’ in-boxes. A release or two each month should be sufficient.

Velvet ants aren’t pests, but since they can deliver an extremely painful sting, you should encourage your client to make the yard less inviting to the host species that females are searching for.

5. **Remember the fundamentals.** PMPs understand IPM but reporters don’t! In fact, they aren’t likely to know any industry jargon. Keep your releases simple, structured, and direct. Make sure the most relevant information is all in the first paragraph. And most importantly, don’t get discouraged! It may take a while to generate a story from your press releases by careful work and persistence will pay off. 

---

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**Follow-Up Marketing Ability is Free!**

You Are Building Your Database for Future Marketing with Every Call!
It’s no secret that social media can be a powerful marketing tool for businesses big and small. Facebook, Twitter, Instagram, Pinterest, LinkedIn and the like can help companies to engage with current customers and attract new business.

However, many brands that regularly use social media are finding that it is becoming increasingly challenging to keep fan engagement levels up. This is largely due to social media channels—with Facebook leading the way—implementing algorithms to determine how much of any one page’s content gets shared. This means that just because you post something, not all of your fans will see it. On Facebook in particular, posts that drive engagement tend to be given preference. As a result, understanding best practices to encourage engagement have become all the more critical.

1. Timing is everything
Before you hit “post” on your next status update, consider the timing. On Facebook, interaction for posts tends to be highest on weekends. This makes sense if you consider that the majority of fans are probably at work or school during the weekdays. (So even if they are sneaking a look at their News Feed, they aren’t as likely to comment or share your post). Despite this finding, SocialMediaToday.com reports that only 30 percent of marketers, brands and businesses are posting on Facebook during weekends.

Of course, you won’t want to post only on weekends. So when you do post during the week, keep in mind that Mondays and Tuesdays tend to see more engagement than Wednesdays through Fridays. It is also generally more effective to post in the afternoon, rather than between the hours of 8:00 p.m. and 8:00 a.m., regardless of the day of the week.

But do not worry—no one is suggesting giving up precious weekend or evening time to update business social media pages. Rather, take advantage of scheduling tools that allow you to upload a post—or many posts—and pre-schedule them to be sent out at a certain times and on certain days. Many social media sites have this capability built right in, or social media management dashboards like HootSuite can be used to make scheduled posts a breeze.

Posting is not an exact science and the most effective dates and times for sharing content can vary depending on the channel and the engagement level of your audience. Try testing posts at various times of the day and week to see what delivers the best fan response for your page.

2. Keep it visual
If you think about your own personal use of social media, it probably will not come as a surprise to learn that people engage more with posts that include a photo. In fact, a HubSpot.com study found that Facebook posts with photos received 53 percent more Likes than the average text post, and photo posts attracted 104 percent more comments than the average post.

3. Provide a clear call to action
It may seem silly, but it is actually very important to tell your audience what you want them to do with the information you are posting. Want your fans to share
your photo? Like your status? Comment on a post? Tell them so! Try using all caps to grab their attention, for example, “Have Bed Bugs? COMMENT below with your story?” Asking questions is another easy way to engage your audience.

4. Keep it short
Twitter limits posts to only 140 characters, but studies have shown that even shorter posts are re-tweeted more often. According to MediaBistro, a tweet should be between 70 and 100 characters, to leave room for a re-tweets, @usernames and comments.

Concise posts shouldn’t just be saved for Twitter. On Facebook, a good rule of thumb is to keep posts under 240 characters. In one study, social media marketing company Vitru (recently acquired by Oracle) found that as a Facebook post gets longer, the engagement rate steadily decreases. The study examined 11,000 posts made by the 150 largest pages on Facebook. By taking the likes and comments for each post and dividing by the number of fans, Vitru was able to find the engagement rate as a percentage.

The trick is to cut down on character length without losing content. Don’t be afraid to take full advantage of commonly used abbreviations, acronyms, and to utilize hashtags. And, when posting links, be sure to use bit.ly or another link shortening site to help save on characters.

5. Make it mobile-friendly
When writing a post, keep in mind that an ever-growing number of fans/followers are most likely viewing content on a mobile device such as a smartphone or tablet. It’s just one more reason why short, concise posts and photos that can be read quickly tend to be the most effective. It is also a good idea to avoid linking to huge files that will take a long time to download on such devices.

6. Don’t over-post
One could argue that you could potentially increase your social media interaction by posting more often. But have you ever “unliked” or “unfollowed” someone simply because they are filling up your entire news feed with non-stop posts? It happens and it is annoying. Therefore, finding the right balance of frequency is key.

You will need to test the waters to find what works best for your pages and followers, but some general guidelines are as follows:
- **Twitter:** Two to three tweets a day
- **Facebook:** Four to five posts a week
- **Instagram:** One photo a day
- **Pinterest:** Two or three pins a week
- **LinkedIn:** One or two updates a week

According to SocialMediaToday.com, “Brands that post [to Facebook] one or two times per day see 19 percent higher interaction rates than those who post three times per day. The key here is not to bombard fans with too many posts, as the Facebook feeds optimization team often penalizes for this. That’s why it’s advisable not to exceed more than 7 posts a week (or 1 to 2 posts a day).”

7. Say something new
Perhaps above all else, it is most important to post fresh content as often as possible. That is not to say you can’t re-tweet or share others’ posts, but you should also try to put out new information. If you have trouble thinking of new content to post, consider appointing key people in your office to help gather information for potential posts. Ask them to send photos, company news and other relevant information as it happens.

The next time you post an update to your company’s social media channels, try testing out some of these tips that can help to drive fan interaction. Whether that means posting at a different time of day, shortening the length of the post or adding a photo, take note to see how these changes impact engagement. Over time, you will find the best practices that work best for the brand and your followers.
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– Training and recommendations
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NEW!
LESCO 50 Gallon Tank Sprayer

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*Consult Owners Manual for full warranty details.
The Occupational Safety and Health Administration (OSHA) is phasing in changes to the revised Hazard Communication Standard (HCS) (29 CFR 1910.1200) during a multiyear period (December 1, 2013–June 1, 2016.) While there are many components of the revised standard that will affect the professional pest management industry, this update will focus on addressing the training components employers are required to cover with their workers before December 1, 2013. OSHA believes this training, on labels and Safety Data Sheets (SDS), will ensure employees have the information they need to better protect themselves from chemical hazards in the workplace during the transition period.

This revision of the HCS, the first since 1994, was completed to align OSHA’s HCS with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The major changes from the previous HCS include a hazard classification system using defined criteria to evaluate health and physical hazards, as well as classify mixtures. Signers of the GHS believe global benchmarks will facilitate consistency in designation of hazards across manufactures and countries. Second, there are new labeling requirements for chemical manufacturers and importers that include a harmonized signal word, pictogram, and hazard statement for each hazard is required to be listed. In addition, precautionary statements must now be provided on all labeling. Finally, SDS now has a specified, consistent, 16-section format.

**Pesticides and the Revised Hazard Communication Standard**

Pesticides will remain under the jurisdiction of EPA. Even though OSHA is moving forward to change the MSDS and all chemical labels, EPA is not requiring pesticide labels to make any changes to comply with GHS. This will lead to confusion because it is very likely the signal word on the OSHA regulated SDS and the signal word on the EPA regulated pesticide label will not match. For example, since OSHA’s HCS does not use the signal word CAUTION, the SDS for all pesticides (labeled CAUTION) will display a signal word...
of WARNING. The three sections below: 1) Label Elements, 2) Safety Data Sheets and 3) SDS Section 15 – Regulatory Information will further address how EPA plans to address the differences.

**Training Elements: Labels and Safety Data Sheets**

There are two main elements of OSHA training that are required to be completed by December 1, 2013. Each person dealing with chemicals must be verifiably trained on 1) label elements of non-pesticide chemicals and 2) the new SDS format applicable to both pesticides and non-pesticides.

The required training elements are in gray boxes below. To increase comprehension about how the new HCS labels and SDS interact with pesticides, additional notes are included below each required HazCom training element.

**Label Elements:**

Employees should be trained to understand the following NON-pesticide label elements.

### Manufacturer Information

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<th>HCS</th>
<th>PESTICIDES</th>
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<tbody>
<tr>
<td>Requires supplier/manufacturer 1) Name, 2) Address and 3) Telephone Number</td>
<td>Requires supplier/manufacturer name and address. EPA also requires EPA Establishment Number (EPA Est. No.) to designate where the product was manufactured.</td>
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**Notes:** EPA encourages, but does not require a telephone contact number on pesticides.

### Product Identifier

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<tr>
<td>The product can be identified by the chemical name, code number or batch number.</td>
<td>Are required to display a name registered with the EPA.</td>
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**Notes:** For both pesticides and non-pesticides, the name on the label and the SDS must match.

### Signal Words

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<tbody>
<tr>
<td>Signal words are used to indicate relative level of severity of the hazard. In the revised HCS, there are two signal words, “Danger” and “Warning.” Within a specific hazard class, “Danger” is used for the more severe hazards and “Warning” is used for less severe hazards.</td>
<td>Pesticide labels will continue to use the current signal words; “CAUTION” “WARNING” and “DANGER.” Unlike the HCS, acute toxicity studies are used to designate the formulation into one of four toxicity categories: I, II, III, or IV. Category IV products do not require a signal word. CAUTION is used for Category III, WARNING for II and DANGER for Category I.</td>
</tr>
</tbody>
</table>

**Notes:** Whether the product is a pesticide or falls under the HCS, there will only be one signal word on the label. For example, if one of the hazard or toxicity categories warrants a “WARNING” signal word and another warrants “Danger,” “Danger” will appear on the label. It is the more severe of the two signal words and is thus more protective of the user.
### HCS Hazard Pictograms and Corresponding Hazards

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Flame</th>
<th>Exclamation Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carcinogen</td>
<td>Flammables</td>
<td>Irritant (skin and eye)</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Pyrophorics</td>
<td>Skin Sensitizer</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Self-Heating</td>
<td>Acute Toxicity (harmful)</td>
</tr>
<tr>
<td>Respiratory Sensitizer</td>
<td>Emits Flammable Gas</td>
<td>Narcotic Effects</td>
</tr>
<tr>
<td>Target Organ Toxicity</td>
<td>Self-Reactives</td>
<td>Respiratory Tract Irritant</td>
</tr>
<tr>
<td>Aspiration Toxicity</td>
<td>Organic Peroxides</td>
<td>Hazardous to Ozone Layer (Non Mandatory)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gas Cylinder</th>
<th>Corrosion</th>
<th>Exploding Bomb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gases under Pressure</td>
<td>Skin Corrosion/ burns</td>
<td>Explosives</td>
</tr>
<tr>
<td></td>
<td>Eye Damage</td>
<td>Self-Reactives</td>
</tr>
<tr>
<td></td>
<td>Corrosive to Metals</td>
<td>Organic Peroxides</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flame over Circle</th>
<th>Environment (Non Mandatory)</th>
<th>Skull and Crossbones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidizers</td>
<td>Aquatic Toxicity</td>
<td>Acute Toxicity (fatal or toxic)</td>
</tr>
</tbody>
</table>
2012 REVISED HAZARD COMMUNICATION STANDARD (HCS)

A QUICK LOOK AT THE FACTS
When must training be completed?
Before December 1, 2013

Who needs to be trained?
Workers who may be exposed to hazardous chemicals under normal conditions or in foreseeable emergencies. Workers, such as office workers who encounter hazardous chemicals only in non-routine, isolated instances do not require training. (This is the same as in the previous 1994 HazCom Standard)

Why has the Hazard Communication Standard (HCS) been revised?
To incorporate the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS). This classification system will harmonize communication of hazards throughout the world.

When did the 2012 revised HCS become effective?

What remains the same in the new HCS?
The 2012 HCS is a modification to the existing 1994 standard. According to OSHA, the parts of the standard that do not relate to the GHS (such as the basic framework, scope, and exemptions) remained largely unchanged.

What has changed in the new HCS that affects PMPs?
- Labels elements for NON-pesticide chemicals
- MSDS (now referred to as Safety Data Sheets, SDS) for pesticide and NON-pesticide chemicals

What type of training must be completed and documented before December 1, 2013?
- Training on the new label elements of non-pesticide labels
- Training on the new, standard, 16-section SDS format
- Training on what can be found in each section of the SDS
- How the new labels and the new SDS interact

What happens if I don’t complete the training before December 1, 2013?
Your company will be considered in NON-compliance with the 2012 revised Hazard communication standard. This could lead to fines being levied by OSHA inspectors.

Pesticides and the Revised HCS
Pesticide labels are not changing to be compatible with the revised HCS. NPMA suggests pest management professionals should understand and be capable of explaining the differences between the SDS and pesticide labels to consumers. See the article and online resources for additional information.

So, what is the best way to complete 2012 revised HCS training?
NPMA online resources. Click on www.npmapestworld.org for information on training opportunities for you and your employees.

Some of the above information was excerpted from http://www.osha.gov/html/faq-hazcom.html
### Pictogram

<table>
<thead>
<tr>
<th>HCS</th>
<th>PESTICIDES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health, physical and environmental hazards are conveyed by nine pictograms in the GHS. OSHA designated eight of these pictograms for use under the HCS. The environmental pictogram is the exception, as OSHA does not have jurisdiction over this area.</td>
<td>Currently EPA uses two pictograms: a version of the skull and crossbones for the most severe categories and a flame symbol for total release foggers.</td>
</tr>
</tbody>
</table>

**Notes:** EPA may incorporate some of the GHS pictograms on pesticide labels.

### Hazard Statements

<table>
<thead>
<tr>
<th>HCS</th>
<th>PESTICIDES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: “Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin.” All of the applicable hazard statements must appear on the label. Thus, there may be multiple pictograms on a label. The hazard statements are specific to the hazard classification categories, and chemical users should always see the same statement for the same hazards no matter what the chemical is or who produces it.</td>
<td>EPA already incorporates many hazard statements into the precautionary statements.</td>
</tr>
</tbody>
</table>

**Notes:** According to EPA, to be consistent with GHS, EPA would need to adopt the GHS criteria and label elements for each hazard class and category the EPA already requires to be on the label. If this were to occur, it would lead to a major revision of all pesticide labels.
Precautionary Statements

<table>
<thead>
<tr>
<th>HCS</th>
<th>PESTICIDES</th>
</tr>
</thead>
</table>
| Describe recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling. For example, a chemical presenting a specific target organ toxicity (repeated exposure) hazard would include the following on the label: “Do not breathe dust/fume/gas/mist/vapors/spray. Get medical advice/attention if you feel unwell. Dispose of contents/container in accordance with local/regional/national and international regulations.” Under the HCS there are four types of precautionary statements:  
  - prevention (to minimize exposure);  
  - response (in case of accidental spillage or exposure emergency response, and first-aid);  
  - storage;  
  - disposal |
| The precautionary statements are designed to provide the pesticide user with information regarding toxicity, irritation potential and sensitization hazards associated with the use of a pesticide. On pesticides, precautionary statements include child hazard warnings, engineering control statements, environmental hazards, first aid, hazards to humans and domestic animals, personal protective equipment (PPE), physical or chemical hazards, signal words and user safety requirements. |

Notes: For pesticides, storage and disposal statements are included in the “Direction for Use” section. To be consistent with GHS, as mentioned above, EPA would need to adopt the GHS criteria and label elements for each hazard class and category to fully implement GHS for pesticide precautionary statements.

Safety Data Sheets (SDS) Elements:
The new SDS may seem familiar. However, currently you are probably more familiar with a Material Safety Data Sheet, commonly referred to as an MSDS. The MSDS will be replaced by the SDS under the HCS. Per the HCS, the SDS is required to follow the 16-section format below.

SECTION 1—Identification
Includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use (directions) and restrictions on use.

SECTION 2—Hazard(s) Identification
The HCS signal word and pictograms will be listed in this section. Also, all hazards and precautionary statements applicable under the HCS will be listed here.

For PESTICIDES, all precautionary statements applicable under FIFRA, as enforced by EPA, will be listed in Section 15. This may include a signal word and precautionary statements that are different from the one listed in Section 2 of the SDS.

SECTION 3—Composition/Information on Ingredients
Includes information on chemical ingredients. May also included trade secret claims.

SECTION 4—First-aid measures
Includes important symptoms/effects, acute, delayed. Also includes required treatment.

SECTION 5—Fire-fighting Measures
Lists suitable extinguishing techniques, equipment and chemical hazards from fire.

SECTION 6—Accidental Release Measures
Lists emergency procedures; protective equipment; proper methods of containment and cleanup for spills and accidental releases.
SECTION 7—Handling and Storage
Lists precautions for safe handling and storage. This section will include incompatibilities for each product.

SECTION 8—Exposure Controls/Personal Protection
Lists OSHA’s Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls and all required personal protective equipment (PPE).

SECTION 9—Physical and Chemical Properties
Lists the chemical’s characteristics.

SECTION 10—Stability and Reactivity
Lists chemical stability and possibility of hazardous reactions.

SECTION 11—Toxicological Information
Includes routes of exposure; related symptoms, acute and chronic effects as well as numerical measures of toxicity.

SECTION 12—Ecological Information*
Any additional ecological Information will be included in this section.

SECTION 13—Disposal Considerations*
Any additional disposal considerations will be included in section 13.

SECTION 14—Transport Information*
Transport information will be included in this section.

SECTION 15—Regulatory Information*
Any additional regulatory information will be included in Section 15. According to EPA’s Pesticide Registration Notice 2012-1, MSDS as Labeling, specifically for pesticide products employees can expect to see the following in Section 15 of the new SDS format.

EPA has stated this is the section where additional information for pesticides is REQUIRED to be located. Any discrepancies with the container label will be addressed in this section. See below, “SDS SECTION 15—SPECIAL INFORMATION FOR PESTICIDES,” for more specific information about how pesticides will be communicated on the SDS.

SECTION 16—Other Information
Includes the date of preparation or last revision among other items.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15.

SDS SECTION 15—SPECIAL INFORMATION FOR PESTICIDES
For pesticides, expect to see the following in Section 15 in the new SDS format.

“This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.”

EPA has instructed the manufacturers/ suppliers to insert the required FIFRA label hazard information in this section. If the pesticide label signal word is different from the signal word on the SDS, this is the area where the difference will be explained.
When Will These Changes be Available?

Even though OSHA is mandating training on the new elements be completed by December 1, 2013, manufacturers are not required to be in compliance until June 1, 2015. It will be some time before the new requirements are consistently seen on a pesticide SDS and the SDS/label for other chemicals.

Next Steps and Additional Training Opportunities

In addition to this library update, NPMA will be presenting a webinar and will make online training resources available to assist in compliance with the December 1, 2013 deadline. Please reference www.npmapestworld.org to find out more about these additional training opportunities.

Additional Resources and References:

Additional information for employers or those designing training resources can be found at the OSHA and EPA websites.

**OSHA General Information:**
OSHA factsheet on December 1, 2013 training requirements http://www.osha.gov/Publications/OSHA3642.pdf

**NON-pesticide Labels:**

**Safety Data Sheets (SDS):**
OSHA QuickCard: Safety Data Sheets (English and Spanish) http://www.osha.gov/dsg/hazcom/SDSitems.html

**Pesticides and the Revised Hazard Communication Standard:**
Pesticide Registration Notice 2012-1, Material Safety Data Sheets as Pesticide Labeling. This is EPA Guidance on how to incorporate GHS into pesticide labeling, http://www.epa.gov/PR_Notices/pr2012-1.pdf
JAPAN—A TRULY REMARKABLE CULTURE

BY KEVIN PASS
NPMA PRESIDENT

This past April, I was invited as a guest of Mr. Junichiro Katayama of Semco Co. Ltd. to speak to a congregation of Japanese pest management professionals. Semco is the largest pest control distributor in Japan and routinely conducts free seminars for Japanese PMP’s. (Yes, that’s what they call pest control operators in Japan, too!) I spoke in Osaka and Tokyo on pest management trends in the United States as well as Action Pest Control’s own successes and challenges!

Before I began my trip, several experienced international travelers coached me on Japanese etiquette. And, while I never quite understood the need to bow, I came ready to bow and properly present and receive business cards. However, after three days in the country, I realized that almost every person-to-person interaction began with a sign of mutual respect—the bow.

In Japan, maintaining a culture of mutual respect is paramount. It is no wonder that I spent five days in Tokyo—a city that swells to 30 million with business commuters—without ever witnessing a single confrontation. I never even heard a raised voice and I certainly didn’t hear any profanity. I even realized that I had gone the entire week without cussing—no small feat for this country boy! In fact, I made it all the way to the Detroit airport without uttering a single swear word. Unfortunately, all bets were off when the service quality at an American restaurant got the better of me! I was ready to head back to Japan—sans the 14-hour flight.

While in Japan, I shared the program with Dr. Chow-Yang Lee of the University of Malaysia. I have never had such a positive experience as a public speaker. When I looked out at the crowd of fifty PMPs, all were dressed professionally and were completely attentive—taking notes and asking questions on Friday afternoon at 5:30 pm. That’s right…5:30 pm on a Friday and not one person was fidgeting or looking at their watch! And what’s even more remarkable was that they were simply to learn and be the best at their profession, because Japan does not require certification!

During my time in Japan, It was interesting to note that the common pests and PMP challenges are virtually the same for Malaysia, Thailand, Korea, Japan and Vietnam as they are for the United States. That knowledge alone makes it very clear why we need to work together to find better pest management solutions in the global marketplace. But there are other shared challenges—such as finding qualified labor—that provide us opportunity on a global scale to promote common ideologies and combat the antagonists to our profession. These opportunities are what spawned the creation of NPMA’s International Task Force, a group of pest management professionals who are focused on identifying how we can work beyond our borders to identify common challenges and seek solutions that can benefit the pest management industry as a whole.

Over the next few months, you’ll be able to see some of the fruits of the Task Force’s labor. If you have any questions, please do not hesitate to contact me directly at kevinp@actionpest.com. In the meantime, I look forward to my next venture to Southeast Asia and its inspiring, remarkable culture.
There are an overwhelming number of social media sites making their mark on the Internet, and every month it seems a new social media network rears its ugly head and tries to suck in the planet. As a business owner you probably don’t have the time to monitor everything being said about your company on every single outlet, nor do you have the time to create, find, and post appropriate content to keep each group of social media followers happy. So why would you want to set up your business on every social media site?
The answer is you don’t. If you are just starting to dip your toes into the social media pool, being selective about which outlet you choose is wise. No reason to dive headfirst if you don’t know how well you can swim.

First, figure out what your goals are. Are you trying to engage potential and current customers? Build relationships? Spread information? Monitor what’s being said about your brand? There is no right or wrong answer to this question, but certain social media sites are better suited for certain goals. You also need to determine how much time you have to commit to meaningful social media updates and monitoring. Creating accounts then leaving them inactive can hurt your online image. So eliminate all of the little guys and focus on the big dogs. If you’re going to spend precious time on a social media network, spend it where the most people are: Facebook, Twitter, LinkedIn, Google+, YouTube and Pinterest.

Facebook
With over a billion monthly users, Facebook is the largest social media network in the world and chances are that members of your target audience are hanging out there. If your goal is to create a community around your brand, get customer feedback or improve customer service, then set up shop on Facebook. Facebook Business Pages provide a great place for reciprocal communication between you and your audience. This requires that your business page be actively monitored and that new content be consistently added. Facebook followers expect answers to their questions, complaints, and comments in a timely fashion. They also want useful information about products, services, and industry news and events. Making your followers feel involved is the key to Facebook success.

Twitter
Twitter’s fast-paced news feed allows people to get real-time updates from businesses they follow. It’s also a fantastic way for business owners to keep up with industry related news. With messages limited to 140 characters, Twitter is more about quick information sharing rather than close-knit community building. Actively monitoring Twitter for mentions of your business, and to respond to any questions or comments from followers is a priority. Your followers will expect some sort of consistent Tweeting from you, be it the monthly sale you’re having or the weekly announcement of your latest blog post.

LinkedIn
LinkedIn is a low maintenance network that allows you to create a professional source of information about both you and your business. If you’re looking to make business connections, find employees, or to show off your industry expertise, set up both a personal and a business LinkedIn page. They require minimal monitoring and there isn’t an urgent need to post daily updates.

LinkedIn business pages allow you to showcase your business as well as individual products and services. Since each product page displays corresponding employee contact information, viewers with questions or comments can contact employees directly rather than posting to your page as a whole. Viewers can also promote products and services that they have tried and enjoyed.

Business pages also have a section where you can post updates about your business, but it doesn’t promote a community vibe like Facebook. With LinkedIn you’re more likely to attract potential and current employees, business connections, or people trying to confirm the legitimacy of your company. LinkedIn’s main attraction is profiles for individual people. Having employees create a LinkedIn account can help to promote the expertise of your business, especially when they take advantage of endorsement features, industry groups and recommendations to show off their skills.

Google+
Google+ fosters a community environment where businesses can interact with potential and current customers. Offering similar features to Facebook but with a much smaller network following, Google+ pages include updates, photo sharing, chats and messaging. But don’t be fooled into thinking Google+ is just a Facebook copycat. Google+ boasts some unique features not found on Facebook. Features that provide distinct search engine result benefits...
to businesses that use it properly. Most notable is the Google+ Authorship feature, which allows you to display your name and image next to your blogs that show up in Google’s search engine results. This authorship feature makes your content stand among the other results and has been proven to increase click-through rates.

Google+ also boasts a +1 button feature allowing people to rank the content on your website and on your Google+ account. More +1s, shares and comments can lead to higher rankings in Google’s search engine results.

The Hangouts feature is also unique to Google+, which allows you to set up group video chats with up to nine people at a time. Hangouts also provide a text chat feature and the ability to watch YouTube videos as a group. All of these features can be used to leverage your social media goals and interact with customers.

Google+ should be consistently monitored for mentions of your business, and updates should be posted consistently to get the most out the search ranking features.

**YouTube**

YouTube is the largest video sharing website online with over 4 billion hours of video watched every month. If you have the right content and customers are watching videos related to your industry online, then you should have a YouTube account. Video marketing is an effective way to share information about your brand and is a less competitive way to rank in search engine results.

Your content should inform, instruct or entertain. People don’t go to YouTube or search for video’s to hear a sales pitch. It’s also important to properly optimize your account and videos with tags,

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### REASONS YOUR SMALL BUSINESS SHOULD USE SOCIAL MEDIA

1. **Branding**—Create a recognizable identity for your product or service. This is extremely important for a small business.

2. **Create a buzz**—Get the word out about your products and services in a way that promotes online conversation.

3. **Online reputation management**—Keep an eye on what other people and sites are saying about your name, company, or brand online—and fix any problems, if need be.

4. **Establish yourself as an expert**—Use forums and message boards to answer questions professionally, honestly, and correctly, which will earn you respect as an expert in your niche. People will look to you for answers.

5. **Build relationships and become more personal**—Use a variety of social media, and you’ll build relationships with customers and potential customers. Trust comes through honesty and sincerity.

6. **Open up the line of communication between business owner and potential customers**

7. **Small businesses can compete with the large companies**—With the right type of viral social media, you could get an immense amount of traffic with quickly-growing natural links, and keep traffic coming for a long time.

8. **Much cheaper than traditional marketing and advertising**—Social media marketing shouldn’t cost a small business nearly as much as traditional advertising. However, it will cost you time. Depending how much your time is worth, it might be worthwhile to hire someone to help with the social media marketing. But, all in all, social media marketing is just a fraction of the cost of traditional marketing and advertising.

9. **Your company is more accessible**—An accessible company means a more trustworthy company.

10. **It’s a way to explain yourself**—One of the reasons some businesses are skittish about social media is because they’re afraid of negative comments. It’s possible to receive negative comments. But, social media provides the platform to explain, to make things right. The fact of the matter is—if someone has something negative to say they can say it. Ignoring them doesn’t stop the damage. But, when you reply, you are seen as a business owner who cares, who wants to make the customer happy, and that you’re human. Social media is a two-way conversation, so go ahead and defend yourself—just do it proactively.
keywords, titles and thumbnails in order to have a chance to rank for them and grab people’s attention.

YouTube videos can be integrated into other social media platforms such as Facebook and Google+, and can be used on your websites and blogs. People can comment on your videos, create video responses, and thumbs up or thumbs down your videos.

**Pinterest**

Pinterest boards allow you to dedicate areas to specific products or topics. People can search, like, pin and comment each photo that you pin to your boards. Whenever someone re-pins your content, all of their followers see it also. Viewers can also click though your pins to be taken directly to the corresponding page on your website for more information. It’s a great way to gain exposure for your company and brand.

Like most social media platforms, Pinterest’s community vibe requires more than just a flow of your own company’s content. You should interact with the pins of other users. Share and comment on their content. As a business you can create a community board and invite your followers to share pins related to your brand or products.

It is also important to monitor what people are saying about your products and the photos you pin. Use the feedback you receive to improve your strategy.

**What Have We Learned So Far?**

There is no such thing as a "set it and forget it" social media platform. All of these options require monitoring and each one requires a dedicated amount of time to keep viewers happy. Knowing what your social media goals are will ultimately determine which account you should set up for your business. Don’t let Facebook’s chatty community vibe or Twitter’s fast moving news feed scare you away. This should be a fun and rewarding endeavor that allows you to share your passion with people who are looking for the products or services you offer. Share news that you’re excited about, provide useful tips and information, thank or apologize the customers who leave you feedback, and ultimately be genuine about your business.

> Originally published by Flexible Systems
“WE CONVERTED OUR ENTIRE TEAM FROM WHAT WE WERE USING TO WASP-X® AND HAVE BEEN USING IT EVER SINCE.”

Patrick Boland | Technical Director, Scherzinger Termite and Pest Control

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Abstract

Raccoon eviction fluids (REFs) are biological repellents used by wildlife control operators (WCO) to evict female raccoons and their young from inaccessible locations. Raccoon eviction fluids are designed to smell like a male raccoon and therefore cause a nursing raccoon to leave the den with her young permanently. Though the precise formulas are not disclosed by manufacturers, the active ingredients of REFs include the glands, glandular secretions, and urine of male raccoons. We evaluated the efficacy of 2 REFs to evict female raccoons with young from chimneys. Though our sample size was small (n = 15), we found that eviction fluids merit further investigation as a viable non-lethal repellent for raccoons in human-occupied structures.

Introduction


Traditional methods of control, such as trapping and direct removal, can be expensive and result in property owners seeking less expensive options. Unfortunately, alternative methods such as ultrasonic devices and chemical repellents, have failed to demonstrate effectiveness or raise concerns about safety and humanness (Sprock et al. 1967, Howard and Marsh 1985, Adler 1992, Vantassel 1999, Dept. of Health 2004, DeClementi 2005). Given the cost of traditional control methods, the need for cost-effective conflict resolution is high.

Biologically based repellents evoke an instinctual response of avoidance and therefore offer the potential to be effective, targeted, and humane. Though the precise formulas are not disclosed, biologically based repellents for raccoons, often known as raccoon eviction fluids (REFs), consist of the glands, glandular secretions, and urine of male raccoons along with a preservative (Erickson 2013). To our knowledge, no study has been conducted to test the efficacy of REFs.

The objectives of this study were to determine:
1. the efficacy of 2 commercially available biologically based REFs to evict female raccoons with their young from chimneys,
2. if female raccoons that moved from their original den site relocated to a different part of the same structure,
3. if evicted raccoons permanently moved from the original structure, and
4. if sites treated with REF caused female raccoons to abandon their young.

Methods

We conducted our study in urban areas of the eastern U.S. during the 2009–2012 denning seasons (spring) for raccoons. We tested Raccoon Eviction Fluid from On Target ADC, Cortland, Illinois, USA (On Target-REF); and Raccoon Eviction Fluid from Wildlife Control Supplies, East Granby, Connecticut, USA (WCS-REF) to evict female raccoons and their young from chimneys. We used filtered water as a control to allow us to differentiate between the effectiveness of the bio-repellents and human disturbance. We relied on cooperating WCOs to verify that chimneys were occupied by a female raccoon with young, randomly select 1 of the 3 treatments, apply the treatment to the cottonballs contained in a plastic holder, drop the container down the flue, record data and the characteristics of the structure before their departure, and return in 2 to 3 days to inspect the chimney to determine efficacy of the treatment. We considered a treatment successful if the raccoons left the chimney and did not relocate elsewhere on same property.

Results

The WCOs provided 15 usable reports (Table 1). Despite the small sample size, WCS-REF was 50% effective, On Target-REF was 0% effective, and water was 25% effective at getting female raccoons and young to move from chimneys. None of the affected female raccoons moved to a different part of the same structure or abandoned their young in the original den. None of the WCOs reported that affected female raccoons returned to the treatment sites during the study between 2009–2012.
TABLE 1. Efficacy of commercially available raccoon eviction fluid to repel female raccoons and young from chimneys, and resulting consequences of treatments, spring 2009–2012.

<table>
<thead>
<tr>
<th>Product</th>
<th>n</th>
<th>Efficacy(^1) (%)</th>
<th>Same structure(^2)</th>
<th>Permanent(^3)</th>
<th>Abandonment of young(^4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racoon Eviction Fluid-Wildlife Control Supplies</td>
<td>6</td>
<td>50</td>
<td>0/3</td>
<td>3/3</td>
<td>0/3</td>
</tr>
<tr>
<td>Racoon Eviction Fluid-On Target ADC</td>
<td>5</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water (control)</td>
<td>4</td>
<td>25</td>
<td>0/1</td>
<td>1/1</td>
<td>0/1</td>
</tr>
</tbody>
</table>

\(^1\) Efficacy was defined as a percentage of replicates with no raccoons present following treatment.

\(^2\) Number moved that ended up in the same structure as original den.

\(^3\) Number moved that never returned to original structure during inspection period.

\(^4\) Number moved that abandoned young in original den.

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**THE ENEMY - BED BUGS**

**KILL ZONE** 120°F-140°F

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**OBJECTIVE**

Arm Yourself With Heat - A Highly Effective Tool in the Battle Against Bed Bugs.

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**DIFFICULTY**

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Discussion

Despite the small sample size, several findings from our study may be of value. The WCS-REF exhibited an efficacy rate of 50%. Wildlife Control Operators should consider it when a customer requests or requires non-lethal or less-lethal control (Vantassel 2012) or if lack of access makes traditional control methods inappropriate. Our findings appear to support anecdotal reports that disturbance of the natal dens of female raccoons may be enough to cause females to move their young. We had no evidence that raccoons returned to the property even when exclusion was not performed. We were surprised by the results related to On Target-REF, given its reputation in the industry (Ryan 1995; personal communication). Aside from participant error or random chance, it is possible the low efficacy rate was due to product age. While these products lack expiration dates, the active ingredient may lose efficacy over extended periods of time or through temperature extremes common in WCO service vehicles.

Our concern that REF would result in undesirable behaviors by raccoons were not fulfilled. Though 1 WCO noted that they removed 2 young, it was unclear from their documentation whether any young had been abandoned. The WCOs also reported no evidence of raccoons moving to other portions of the structure or property. In addition, no animals were found dead during this study.

We believe that the timing of our study may have hindered participation by WCOs. Spring is the busiest time of the year for WCOs, so many that agreed to participate may have later been unwilling to change their management methods to accommodate the research protocol. Several participants stated that they had not received any jobs that met the study requirements, some for multiple years.

Business Implications

Raccoon eviction fluid is another low cost, non-lethal tool for WCOs to consider when raccoons and their young need to be evicted from a structure. We recommend further research in the area of biologically based repellents to assess their efficacy in other situations.
Acknowledgements

We thank the Pest Management Foundation for funding this study.


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