PestManagement PROFESSIONAL

MOSQUITOES

PAST, PRESENT, FUTURE

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Bring value to your mosquito customers

BY **DR. JANIS REED, BCE** Technical Services Manager, Product Development Team. Control Solutions Inc.

ach spring, I get excited about blooming plants, greening and growing grass, and getting outdoors and enjoying the mild temperatures before summer crushes us with 100°F temperatures. Unfortunately, this time of year brings a few downsides, too: Allergies. Daylight saving time. A reminder that swimsuit season is coming.

We also face an increase in insect and arthropod activity — which for pest management professionals (PMPs) is good news, but at the same time we face an increase in mosquito activity.

Mosquito management is a tricky business. We are tasked with trying to control flying insects on our customers' properties that, with some species, could potentially be traveling more than 70 miles from their breeding area. Homeowners often panic because not only are these insects annoying and capable of causing painful bites, but they can also transmit important human pathogens that cause disease.

Worldwide, mosquitoes kill more humans than any other animal — even other humans. Having the right tools, knowledge and high-quality control products can make all

In the past two years or so, Zika virus has emerged as a very real risk. As entomologists, scientists and medical professionals learn more about this disease, the public is becoming more aware and educated about vector-borne pathogens. In addition to Zika, West Nile Virus, chikungunya and other encephalitides continue to be diagnosed throughout the United States. As a result, homeowners are becoming more concerned about the biting mosquitoes in their own backyards.

Consequently, this causes a PMP's phone to ring and service call to be scheduled. While there will always be do-it-yourselfers, our clients have good reasons to call a professional: We have the knowledge, skills and abilities to tackle these tough pest management problems.

ADDING VALUE

I often ask PMPs, "What value-added services are you providing your mosquito customers?" Generally, I get good answers. PMPs are inspecting properties for clogged gutters/ downspouts, containers holding water, unattended birdbaths or children's pools, and other "hot spots" for mosquito larval

DR. REED is technical services manager for pest control operators for Control Solutions Inc. (CSI), a member of the ADAMA Group. She may be reached at janis.reed@ controlsolutionsinc.com.

development. However, as an industry, we can do more for those customers who are concerned about mosquitoes in and around their properties. Consider suggesting and/or offering to do the following at your next residential account:

- Trim overgrown plants that could provide harborage and resting areas.
- Install a fan to increase circulation.
- Clean out clogged or improperly functioning gutters.
- Remediate drainage issues.

Do you provide a handout on how customers can protect themselves from mosquito-borne illness with the use of insect repellents? A leave-behind is an excellent value-added service many PMPs are not taking advantage of using.

On a larger, community-wide scale, there are things you can do as well. As you are entering the neighborhood or general area of the treatment, your inspection should begin. Are there any conducive conditions in the general area, such as water retention ponds, creeks, ditches, storm drains or other small bodies of stagnant water? In large developed tracts of land, such as subdivided neighborhoods, it might be prudent to meet with homeowner associations and city leaders to address mosquito breeding concerns. In these situations, we have the opportunity to be not only trusted professionals, but experts in our field.

At Control Solutions Inc. (CSI), we are dedicated to providing the best quality, consistent, reliable and effective products to our suppliers and customers. We offer several mosquito management options: Our Cyzmic CS is an encapsulated lambda-cyhalothrin product, proven to provide more than 60 days of continuous control with a single application. Our complete portfolio of vector control products can be viewed online at ControlSolutionsInc.com. We strive to create effective, reliable, economical pest control solutions to help PMPs maximize results and income potential. At CSI, our mission is to develop innovation you can apply.

MOSQUITO MANAGEMENT SURVEY



FULFILLING CUSTOMER DEMANDS

Customers have compelling reasons for requesting mosquito control, *PMP*'s survey shows.

BY **DIANE SOFRANEC** | Managing Editor

he reasons why pest management professionals (PMPs) offer mosquito management services have not changed much over the years. Some solid motives include increasing revenue, satisfying customer demand and accepting new opportunities. But what's most compelling these days is disease prevention.

As stewards of public health, PMPs help prevent mosquito-borne viruses and disease, including the Zika virus, West Nile virus (WNV), chikungunya, dengue, malaria, yellow fever and Eastern equine encephalitis. Look no further than your own backyard for the threat of these illnesses.

The U.S. Centers for Disease Control and Prevention (CDC) says 47 states and Washington, D.C., reported WNV infections in 2017. Of the 2,002 confirmed and probable cases of WNV, 121 people died. "In my home state of Illinois, there were 87 cases reported last year, resulting in five deaths," says Adam Ring, owner of A-Action Pest Control in Antioch, Ill. "We feel compelled to do our part to help reduce these risks for our customers."

Also last year, the CDC advised the public that Zika cases had been reported in Texas, Florida, Puerto Rico, U.S. Virgin Islands, and American Samoa. As of March 2018, there were more than 42,800 confirmed cases of Zika in the U.S. and its territories. Will Zika make headlines again in 2018?

"It's our guess — and believe me, this is a guess — that Zika is not going to be a big issue this year," says American Mosquito Control Association (AMCA) Technical Advisor Joseph Conlon. "We've

CONTINUED ON PAGE MM6



SOURCE: PMP MOSQUITO MANAGEMENT SURVEY DEC. 2017 – JAN. 2018

AREA OF OPERATIONS

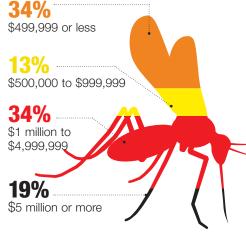
MIDWEST (OH, IN, IL, MI, WI, MN, MO, IA, ND, SD, NE, KS)

WEST (AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY)

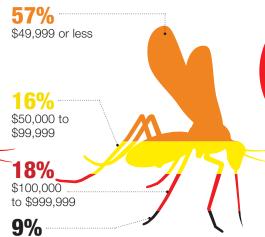
SOUTH (AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, WV)

NORTHEAST (CT, DE, ME, MD, MA, NJ, NH, NY, PA, RI, VT, D.C.)

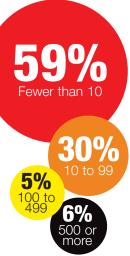
2018 PROJECTED TOTAL REVENUE



2018 PROJECTED MOSQUITO MANAGEMENT REVENUE



NUMBER OF TECHNICIANS



MOSQUITO MANAGEMENT REVENUE BY STRUCTURE TYPE

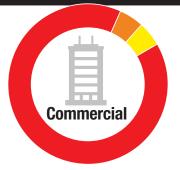
\$1 million or more



33% generated 25% or less of their mosquito management revenue from residential

7% generated 26% to 50% from residential

60% generated 51% or more from residential



90% generated 25% or less of their mosquito management revenue from commercial

5% generated 26% to 50% from commercial

5% generated 51% or more from commercial



95% generated 25% or less of their mosquito management revenue from govt./municipal

3% generated 26% to 50% from govt./municipal

2% generated 51% or more from govt./municipal



OSQUITO MANAGEMENT SURVEY

CONTINUED FROM PAGE MM4

taken significant steps to prepare ourselves for Aedes aegypti and A. albopictus surveillance and control."

He may be on to something. Pest Management Professional's (PMP's) 2018



JOSEPH CONLON

Mosquito Management Survey reveals the number of respondents who said their customers specifically asked whether their services control mosquitoes that carry the Zika virus dropped. This year's survey shows 44 percent whereas last year, that figure was 55 percent.

EDUCATION IS CRITICAL

With mosquito-borne illnesses in the headlines, education has helped convey the importance of mosquito management efforts. "Mosquitoes and their associated diseases are mentioned regularly in all forms of media today," says Ring. "By educating our customers on the biology, habitat and health risks of mosquitoes, our customers quickly learn we are dedicated to controlling populations and protecting their families."

With mosquito-borne illness top of mind for many customers, mosquito management work is picking up for the PMPs who offer it. The majority of PMPs asked — 78 percent — expect mosquito control jobs to increase in 2018.



ADAM RING

"We are excited for 2018, and look to triple our 2017 numbers," Ring says. Although his company initially only provided one-time mosquito treatments before customers' special events, in 2017 the company got serious about mosquito control.

"We hadn't thoroughly educated ourselves on

mosquitoes, and simply attempted to treat them via insecticide treatments alone," he says. "Reviews were mixed back then, and I decided to stop treatments altogether."

During a pest management conference, he adds, discussions with PMPs who successfully offer mosquito management services changed that.

"I realized I had the wrong mindset, and that I had previously performed mosquito control incorrectly," Ring says. "I returned to my office motivated and dedicated to mosquito control education and certification."

Now. A-Action Pest Control technicians are licensed through the Illinois Department of Agriculture and the Illinois Environmental Protection Agency.

"In 2017, our first year, we added more than 130 mosquito control program customers," Ring says. Better yet, reviews from customers have been "fantastic," he adds.

LONG-LASTING CUSTOMERS

A-Action technicians carefully inspect customers' properties and structures to identify potential breeding sites, as well as optimal insecticide application sites. Ring says he expects his company's thorough, successful treatments to lead to lifelong customer relationships and referrals.

"We inform our customers of steps they can take to eliminate breeding sites on their properties," he says. "This partnership ensures a long-term relationship."

Scott Fortson, president of Terminix Service Inc. in Columbia. S.C., agrees with the notion that providing mosquito management



helps to retain customers across all services.

"Your happy existing pest control customers hear about the mosquito control services performed at their neighbors' or friends' homes," he explains. "If you don't offer mosquito control, you risk customers leaving you to go to

CONTINUED ON PAGE MM8

More than 42,800 individuals with lab-confirmed cases of Zika virus have been reported in the United States and its territories as of March 2018. More than 7,000 pregnant women in the United States and its territories have lab evidence of a Zika virus infection.

SOURCE: U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

SOURCE: PMP MOSQUITO MANAGEMENT SURVEY DEC. 2017 - JAN. 2018

MOSQUITO MANAGEMENT **SERVICE FREQUENCIES**

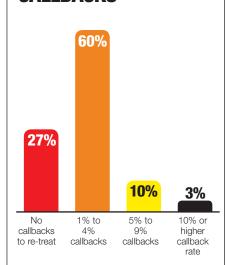
(in order of customer requests)



16% One time (special event) 8% Other (misting, communitywide spraying)

7% Quarterly 1% Annual

2017 MOSQUITO MANAGEMENT **CALLBACKS**



MOSQUITO MANAGEMENT JOB GENERATORS

Add-on service for current general pest management clients

2 New clients requesting mosquito management services

 $oldsymbol{3}$ Add-on service for current termite management clients

MOSQUITO MANAGEMENT REVENUE PROJECTED CHANGE 2018 VS. 2017

Project an increase of 25% or more	42%
Project an increase of less than 25%	35 %
Project mosquito management revenue to remain flat	21%
Project a decrease	2%

MOSQUITO JOB CALLS PROJECTED CHANGE 2018 VS. 2017

Project an increase in mosquito job calls of 25% or more	46%
Project an increase of less than 25%	32%
Project calls to remain flat	19%
Project a decrease	20/

TOP 4 MOSQUITO SPECIES BY NUMBER OF JOBS & REVENUE GENERATED Asian tiger mosquito (Aedes albopictus) **Encephalitis** mosquito (Culex tarsalis) Yellow fever mosquito (A. aegypti) Southern house mosquito (C. quinquefasciatus)

41% of respondents who perform mosquito work confirm that their promotional and advertising materials for mosquito management mention the Zika virus.

Of respondents **70** who perform mosquito work say their customers specifically ask whether their services manage mosquitoes that carry Zika.



MOSQUITO MANAGEMENT SURVEY

CONTINUED FROM PAGE MM6

a competitor who offers both general pest and mosquito control services."

Demand for mosquito management services is high in Fortson's area, thanks to its proximity to the coast. For the past 12 years, his company has made his customers' backyards more enjoyable.

"You have kept pests from entering their homes; now you can keep mosquitoes from bothering them in the backyard," he says. "Customers perceive this

64%

of respondents who perform mosquito work say news of the Zika virus helped boost the number of mosquito management service calls they received in 2017.

additional service to be very beneficial because they are not tied to the inside and can enjoy the outside."

Most PMPs say the revenue their mosquito management services generate come from residential customers, according to *PMP*'s 2018 Mosquito Management Survey. It accounts for more than half of their mosquito management business, said 60 percent of those asked.

UNPREDICTABLE POPULATIONS

Is it possible to predict whether mosquitoes will turn out in force in a given year? For PMPs like Fortson, there's no telling how long mosquito season may last. In most of his service area, it runs April through October. But when spring — and the warmer temperatures it brings — arrives early, he sometimes receives calls in late February and March.

Precipitation is a factor, too. Stagnant water collecting in containers and holes, as well as puddles of water slow to recede after a storm, are ideal breeding places. Areas experiencing drought will have mosquitoes with increased biting intensity, Conlon says.

It's extremely difficult to predict mosquito populations, which makes the PMP's role all the more important.

"One never knows when the next disease is going to hit," Conlon says. "We need to be prepared, and PMPs are part of that preparatory infrastructure." PMP

You can reach SOFRANEC at dsofranec@northcoastmedia.net or 216-706-3793.

EXPERT TRAINING BOOSTS SKILLS

Pest management professionals (PMPs) who want to enter the mosquito management business or brush up on their training should check out the American Mosquito Control Association (AMCA) website at Mosquito.org. Under the "Resource Center" tab, you can access online training modules. You don't have to be a member of the AMCA; however, you do have to register. All online training is free.

"You have to score an 85 percent on the final exam of each module before you are allowed to go to the next one," says AMCA Technical Advisor Joseph Conlon. "And they are not that easy, frankly."

The training focuses on the Aedes aegypti mosquito; those who successfully take all four modules will receive a certificate of completion.

Also on the website is the 2017 version of

the "Best Practices for Integrated Mosquito Management" manual, which is free to download.

"We must be prepared to meet any and all contingencies coming forth and keep a robust public infrastructure that includes PMPs," Conlon says. "PMPs and mosquito



abatement professionals need to understand that we are saving lives."

The AMCA is comprised of nearly 1,500 public health professionals dedicated to preserving the public's health and well being through safe, environmentally sound mosquito control. It includes individuals and public agencies engaged in mosquito control, mosquito research and related activities.

MOSQUITO FACTS OF NOTE

BY FRANK MEEK, BCE | Contributor

hen you hear the word *mosquito*, what comes to mind first? For most people, it would be disease, death, and maybe annoyance. These are, of course, all correct thoughts — correct issues that we face from this near-perfect animal.

In their 2001 book, Mosquito: A Natural History of Our Most Persistent and Deadly Foe, Andrew Spielman and Michael D'Antonio describe the mosquito as an elegant and beautiful creature. They also describe the mosquito as the deadliest insect on the planet.

"All (mosquitoes) manifest exquisite adaptation to their environment. As a larva, the mosquito feeds and navigates in water," the authors write. "As an adult, she can walk on water as well as land. She flies through the night air with the aid of the stars. She not only sees and smells, but also senses heat from a distance. Lacking our kind of a brain, she nevertheless thinks with her skin, changing direction, and fleeing danger in response to myriad changes in her surroundings."

Some other facts that actually make this an interesting insect include:

- The sounds mosquitoes make for mating help them determine whether a mosquito they are listening to is of the same species.
- When feeding, the female takes in two to three times her body weight in as little as 90 seconds.
- After feeding, she will move a short distance away and land. Over the next 45 minutes or so, she will separate the water from the blood and excrete it as urine.

HISTORICAL HEROES

Mosquitoes have caused changes in history, shaped civilizations, and have been responsible for not only death, but also for survival of communities.

Pope Gregory the Great (590 – 604 AD) wrote a lot about the illness in Rome that occurred when the weather turned warm. From his writings, many later pontiffs refused to sit in Rome. Malaria had been present so long in the country that many of the locals had developed immunity to the disease. Invading armies pushing into Rome, however, had not been exposed. Thus, early Rome was protected not by its fierce armies as much as it was by the mosquito.

Roman soldiers were protected to a point from the sickness — that is, until they invaded territories with different strains of malaria present. Around the end of the first century, Rome started its invasion of Scotland. The Romans reportedly lost approximately half of the 8,000-man force that was sent to the country, thanks to the malaria strain in Scotland.

In 1022, King Henry II was defeated in Rome by an illness so devastating that historians said it "can in no way be described."

Again, malaria protected the people of these countries and regions.

It wasn't until the 1890s that the connection between mosquitoes and malaria was made. A British physician, Sir Ronald Ross, studying mosquitoes in India made the final correlation between the malaria parasite and the mosquito.

Historically, mosquitoes also have been used as torture

devices and biological weapons. Centuries ago, Siberian tribes would tie a condemned prisoner to a tree and allow nature to work. In his 1985 book Natural Acts, American author David Quammen reported that an

unprotected person in the wrong place at the wrong

time could sustain as many as 9,000 bites per minute.

That rate would remove approximately half the blood from a large man in two hours. There are further reports of infected mosquitoes

being collected and released in enemy territory to spread

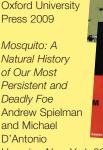
disease to change the outcome of battle and war.

This small elegant and beautiful animal has been credited with good and bad works, both natural and human-driven. Perhaps it should receive a little more respect for its place in history. PMP

You can reach MEEK, international technical and training director for Orkin Pest Control, at fmeek@rollins.com.

FURTHER READING

Six-legged Soldiers: Using Insects as Weapons of War Jeffery A. Lockwood Oxford University Press 2009



OSQUITO MANAGEMENT SUPPLEMENT

Check out our bonus mosquito tips online at

10P 5 PMPPestTalk.net. MOSQUITO MANAGEMENT TIPS

Many pest management professionals (PMPs) offer mosquito management as an add-on service. Whether your applications are one-time only or seasonal, the following advice may help boost business. BY DIANE SOFRANEC | Managing Editor

INSPECT THOROUGHLY

"Being thorough will provide a quality treatment that will allow you to sell your services to the account again and again." - Roger Meitler, Owner, World Pest Control, Plainville, Kan.

"Identify, correct and treat all potential breeding sources. Any item or area that holds, or potentially could hold, standing water must be corrected so mosquitoes cannot lay eggs that will hatch in the water and become viable adults. Do not overlook even the tiniest of items.



such as plastic bottle caps, toys, flower pots, etc." - Dennis Judy, Owner, Judy's Pest Services, Snellville, Ga.

"It's a must to eliminate and treat mosquito breeding areas; otherwise, you are solving part, not all, of the problem. Treatment has to be targeted where mosquitoes are. Spraying the lawn while ignoring bushes and shaded foliage will not be a successful treatment." - Josh Wise, Service Manager, A Plus Pest Control, Edmond, Okla.

"Mosquitoes like calm, standing water. If you have a pond with no movement, add an aerator to constantly move the surface water around. Not only will this help with the mosquitoes, it will add oxygen to the pond."

- Jamie Fontenot, Quality Manager, The Bugman, Baton Rouge, La.

"Always ask the customer to clean up any debris. Check your surroundings for items that should not be sprayed, as well as tripping hazards."

- Andrew Harrington, Pest Control Specialist, Orkin, Queensbury, N.Y.



"A thorough inspection does not mean a casual walk around the house or property; it should be an intense search for breeding sites. The inspection must include safety issues, such as tripping hazards and areas that may cause concerns with drift or product contamination. Be sure to include a look at adjacent properties for issues that may prevent treatment on that day." — $Patrick\ Boland$, ACE, Technical Director, Scherzinger Pest Control, Cincinnati, Ohio

FOLLOW DIRECTIONS "Comply completely with the label of the product. Many products have a 'rainfast' time listed on them, and even a light rain that is not timed well with the application can wash off and put pesticide where it doesn't belong. As a professional working outdoors, it is our responsibility to our clients and fellow workers

to be aware of what Mother Nature is doing." - Chris Olson, Production Manager, LaRosa Landscape Co., Cedarburg, Wis.

"Certain pesticides are toxic to bees and other pollinators. If actively foraging on flowering plants that were treated, the pollinators may be endangered when collecting pollen. Many labels include a Bee Advisory Box. In addition, new use restrictions indicate application when bees are not foraging, while plants are not flowering and only after flower petals have fallen off. Make sure to read and understand these labels." - Dennis Judy, Owner, Judy's Pest Services, Snellville, Ga.



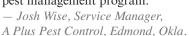
"Use the proper equipment and treatment techniques for each product. Choose equipment that is best for you and your company. Be sure to use the product that is best for the situation." — Patrick Boland, ACE, Technical Director, Scherzinger Pest Control, Cincinnati, Ohio

"Wind drift needs to be monitored. Wear clothing that is waterproof, instead of water-resistant: it's one of the main reasons poisoning incidents occur through the skin. Everyone is wearing cotton baseball hats, but hats should be chemical-resistant. Pant legs should be outside, instead of inside, the boot." — John S. Besic, President, Besic Pest Control, Transfer, Pa.

"Do not skimp on the material you use. Many products are available for mosquito treatment. Just because a product is cheap doesn't mean it is the best product for your bottom line. A quality treatment with a quality product will enable you to resell your mosquito service much more easily." — Roger Meitler, Owner, World Pest Control, Plainville, Kan.

"Talk to your distributors and ask questions. They are your best resources to reduce the mosquito population and satisfy customers." – Jamie Fontenot, Quality Manager, The Bugman, Baton Rouge, La.

TRAIN TECHNICIANS "Educating customers about what your service involves and what they can expect should be part of every pest management program." - Josh Wise, Service Manager,



"Providing a well-trained workforce is essential. A properly trained technician has the knowledge to provide effective control measures safely, while at the same time bolstering customer confidence. In addition, a properly trained employee is less likely to have a morale problem and much less likely to make mistakes while servicing a customer." - Dick Crawford, Quality Control Manager, D A Exterminating Co., Metairie, La.

"Talk to your supervisor or coworkers, and ask questions. There is a wealth of knowledge out there." - Jamie Fontenot, Quality Manager, The Bugman, Baton Rouge, La.

"Many times the service is sold. but when the technician arrives for the application, he may say a few things nonchalantly that are taken as gospel by the homeowner. Complete eradication is not something the technician should be talking about. A simple comment like, 'You won't have to worry about any mosquitoes at your BBQ,' sets in the client's mind that he will not see one single mosquito. That can create an angry customer."

— Roger Meitler, Owner, World Pest Control, Plainville, Kan.

EDUCATE CUSTOMERS

"Many times, effective control requires assistance from the customer. For instance, when attempting to control a bed bug infestation, customers have to be instructed what to do to get their homes ready for treatment. Similar customer education is needed to effectively control many other pests, such as mosquitoes." — Dick Crawford, Quality Control Manager, D A Exterminating Co., Metairie, La.

"Give customers tips to reduce or eliminate mosquito resting places. When the lawn is cut, bag grass and leaves. Keep shrubs trimmed. Fold up patio furniture."

 Jamie Fontenot, Quality Manager, The Bugman, Baton Rouge, La.



PRICE ACCORDINGLY

"Pricing your service is very important. Mosquito control takes a little more time than a simple pest management application, and more material is used, usually at higher concentrations. Take that into consideration." — Roger Meitler, Owner, World Pest Control, Plainville, Kan.

"Underpricing pest control work potentially leads to poor control if you are unable to spend the necessary time on the job. Poor control results in customer dissatisfaction, loss of revenue due to the poor performance of an underpriced job, and the loss of potential work from that customer. A disgruntled customer is more likely to provide poor reviews to neighbors, family members and friends." - Dick Crawford, Quality Control Manager, D A Exterminating Co., Metairie, La. PMP

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