

ADVERTORIAL

# 2021 State of the **MOSQUITO** **CONTROL MARKET**



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# A GREAT YEAR But Growth Slowed

Last year, mosquito control revenue grew again at pest management companies, just not as much.

According to the 2021 PCT State of the Mosquito Control Market survey, which was sponsored by MGK and compiled by independent research firm Readex Research, 50 percent of pest management professionals said revenue from mosquito control services increased at their locations. The average reported increase was 19.7 percent.

Fewer PMPs said this business segment grew, however, compared to in years past. In 2019, 63 percent of PMPs reported a jump in year-over-year mosquito control revenue; 67 and 65 percent cited increases in 2018 and 2017, respectively.

Still, the service remained an important money-maker for the 73 percent of pest management companies that offer it.

“It’s a significant part of the business. It plays an integral part in our total home experience that we look to provide our customers,” explained Trey Strickland, technical leader at Waynes, an Anticimex company in Birmingham, Ala.

Mosquito control is a win-win for companies like Fahey! Pest and Lawn Solutions in Sarasota, Fla. “I think it’s a great added-value service to your customers and an added revenue stream to your company,” said Kyle Varona, the company’s general manager.

More customers had mosquito problems in 2020 and were motivated to act. According to the PCT survey, 59 percent of

PMPs said requests for mosquito control increased somewhat or significantly last year compared to 2019.


The Asian tiger mosquito, a newcomer to New York City, generated more calls for Standard Pest Management. “It’s a daytime biter, and it’s a real quality of life mosquito that just annoys the heck out of people,” said Gil Bloom, president of the company.

In Houston, *Psorophora ciliata*, or the gallinipper mosquito, drove interest in mosquito control for Providence Integrated Pest Management. Mosquitoes are a perennial issue here, but last summer was the first time owner Kenneth Beason ran into this particular species.

“It’s enormous — almost the size of a wasp — extremely aggressive, and they bite very hard,” said Beason, who felt the pest’s wrath firsthand while working in the field.

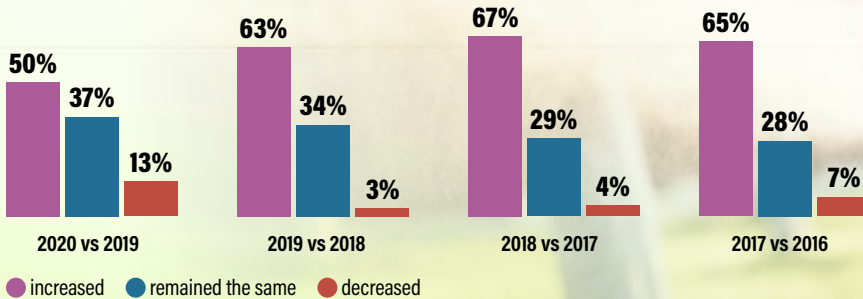
Allen Langley, president of H & H Pest Control in Shelby, N.C., said mosquito-only companies developed the market. “Now, all of us are into it, and we make extra income off of it. It’s brought us a lot of new business,” he said.

Last year, mosquito control services on average generated 18.3 percent of total annual revenue at companies, or about \$54,600.

By comparison, 56 percent of PMPs said they earned less than 5 percent of revenue from mosquito work in 2014, when PCT published its first Mosquito Control Market report. Back then, only 38 percent of companies offered mosquito control. 



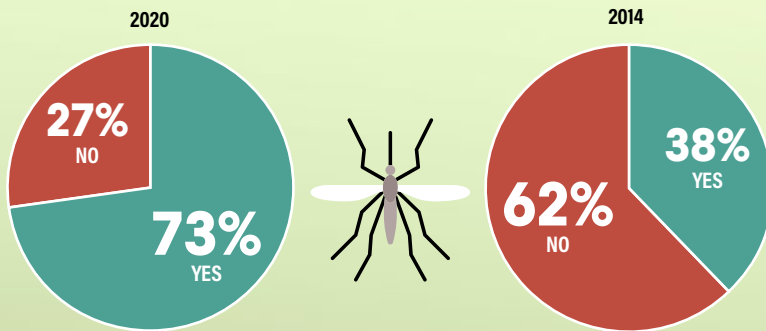
**Change in percentage of mosquito control service revenue at your company location:**



Source: Readex Research, 2017-2021

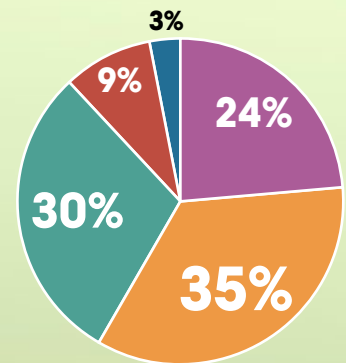


**Does your company location offer mosquito control services?**



Source: Readex Research; 2020 respondents: 267; 2014 respondents: 381

**Change in number of mosquito control requests in 2020 compared to 2019:**



- increased significantly
- increased somewhat
- remained the same
- decreased somewhat
- decreased significantly

**14%**  
cannot compare;  
was not involved  
before 2020

Source: Readex Research; Respondents: 195



**18.3%**

average percentage of overall revenue derived from mosquito control services at companies in 2020

Source: Readex Research; Respondents: 195



**19.7%**

average percentage that revenue from mosquito control services increased at companies in 2020

Source: Readex Research; Respondents: 84



**\$54,600**

average total revenue generated by companies for all mosquito control services

Source: Readex Research; Respondents: 195

# MULTI-FACETED

## Treatment Approach

According to pest management professionals who took part in the 2021 PCT State of the Mosquito Control Market survey, companies typically controlled mosquitoes using targeted applications of mosquito adulticides (71 percent), larval control (62 percent) and fogging (56 percent).

In follow-up interviews, most said their employees use mist blowers to apply a synthetic product and often an insect growth regulator to yards about every three to four weeks during mosquito season.

“The key to successful mosquito programs is, per label, providing that complete coverage around the home where the mosquito’s going to rest or a mosquito’s going to look to breed,” said Trey Strickland of Waynes, which rotates products with different modes of action to ensure treatments remain effective. Waynes employees target shady, moist areas in the yard, such as heavy foliage and underneath decks and porches.

H & H Pest Control adds a “sticker” to its product mix to help materials adhere to vegetation. “We seem to get better control with that,” said Allen Langley.

Other PMPs use green products, such as botanical oils. Because these products have shorter residuals than conventional pesticides, they need to be applied more frequently.

“We’re primarily using 25(b) products simply because of the rules and regulations




here in New York state,” said Gil Bloom, Standard Pest Management. He has found 25(b) products, considered minimum risk by the U.S. Environmental Protection Agency, to be effective, but he also makes sure clients understand their limitations.

Matthew Jennings of SafeYard Mosquito Services has some customers in metro Atlanta who want organic mosquito control. “Certain situations demand that I cannot use chemical,” he pointed out. This includes properties with koi ponds and those near natural bodies of water.

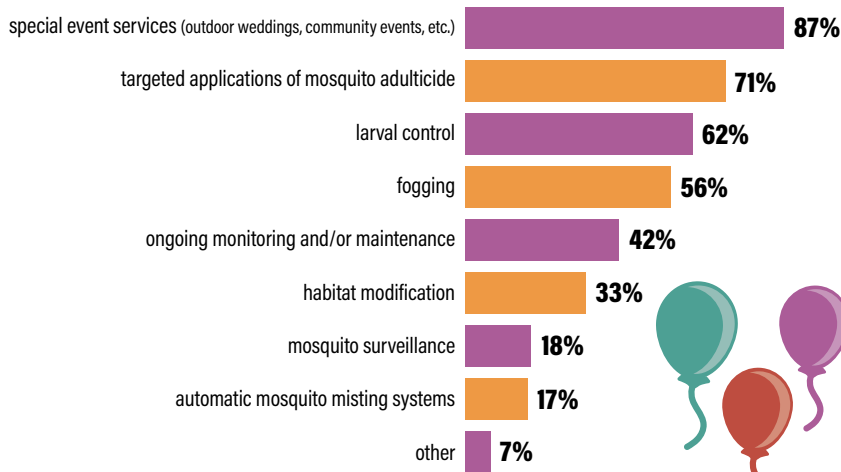
Thoroughly documenting property conditions helps companies provide consistent

control, even if a different technician steps in to do the work. “You’ve got to learn the yard and find out the problem areas so you can notate it on the account. In the long run, that helps, because you’ll have less re-treats, which nobody wants,” said Jennings.

In 2020, the average callback rate for mosquito control was 6 percent.

In addition to recurring mosquito control programs, 87 percent of companies offered special event mosquito control services, such as for outdoor weddings and community events. This accounted for only 8.3 percent of mosquito work on average. 

### What types of mosquito control services does your location offer?



Source: Readex Research; Respondents: 195; Respondents could select multiple answers



**8.3%**

average percentage of mosquito control performed for special events



**6%**

average callback rate for mosquito control service in 2020

Source: Readex Research; Respondents: 195

### PARTNERSHIP: A Core Component for Success

"Customer education for us is extremely important. We want to provide a really great service, but there are times where we have to have a partnership with the customer," said Trey Strickland, Waynes.

Customer help is needed to eliminate standing water in the yard to reduce mosquito breeding areas. This may include cleaning clogged gutters, re-grading low areas of the yard, and emptying toys, planter pots, equipment, tarps and tires.

"It doesn't take much water to breed mosquitoes," reminded Strickland.

Likewise, it is essential to set realistic expectations for mosquito control. "Never promise that you're going to control and get rid of all the mosquitoes," advised Andrew Taylor, Plunkett's Pest Control. You're trying to sell a reduction in population; otherwise, you'll be back at the property multiple times for retreats, he said.

In addition to educating clients in-person about mosquito control, PMPs said they reinforce key points via customer emails, social media posts and website content.



### PUBLIC HEALTH: Not a Big Motivator

Customers understand the risk of vector-borne diseases, agreed 49 percent of PMPs who participated in the 2021 PCT State of the Mosquito Control Market survey.

And 66 percent of PMPs agreed mosquitoes represent a greater threat to public health than five years ago. That's when Zika virus was endemic throughout the world.

Customers, however, are more motivated to buy mosquito control service because the pests are a nuisance, said PMPs in follow-up interviews. Unless West Nile virus or some other mosquito-borne disease is making headlines, protecting their health is not top of mind.

"If it doesn't get the press, it doesn't exist," agreed Gil Bloom, Standard Pest Management. "I think pest control and people who sell mosquito repellent are the biggest groups trying to remind everybody about West Nile virus."



**96%**

PMPs who agreed their company provides an essential public health service by performing mosquito control.

**80%**

PMPs who disapprove of using scare tactics to promote mosquito control services.

**66%**

PMPs who agree mosquitoes represent a greater threat to public health than they did 5 years ago.

**49%**

PMPs who agree customers understand the risks of vector-borne diseases.

Source: Readex Research; Respondents: 195

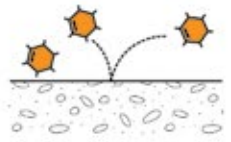
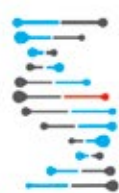


# Resistant Mosquitoes: What to Know and How to Treat Them

Ongoing public awareness of the mosquito as a vector, combined with real, and often emotion-laden, public concern over pesticide use and pesticide resistance continues to shine a light on mosquito control efforts across the United States. Pest management professionals have joined mosquito control professionals on the front line in this fight for many years now. Mosquito resistance to control is often suspected but much less often verified. Now is the time to take seriously. Now is the time to build a better understanding of resistance and use tools at our disposal in the most efficient manner to combat it.



## What Is Resistance?

Resistance is the result of gradual, genetic changes in the mosquito population over generations that lead to pesticide tolerance. Resistance development in mosquito populations is practically inevitable if control methods remain unchanged over time. The reason for this is that mosquitoes evolve rapidly. We know that all populations of living organisms change over the course of many generations. Some organisms, like plants, may take one year to produce their next generation as seeds. People may take between 20, or even 30, years to yield the next generation. Mosquitoes can produce their next generation in just two to three weeks. Rapid reproduction of thousands of mosquito offspring in a matter of weeks results in swarms that can evolve around our control efforts. Research has shown that resistance to pesticides can happen in more than one way. Understanding whether any resistance is present and the type or types of resistance present on the ground, is paramount. As Janet McAllister, Ph.D., entomologist, of the Center for Disease Control shared, "Blindly rotating isn't an effective strategy for fighting resistance. Understanding the resistance situation on the ground and choosing the appropriate tool based on evidence is necessary."

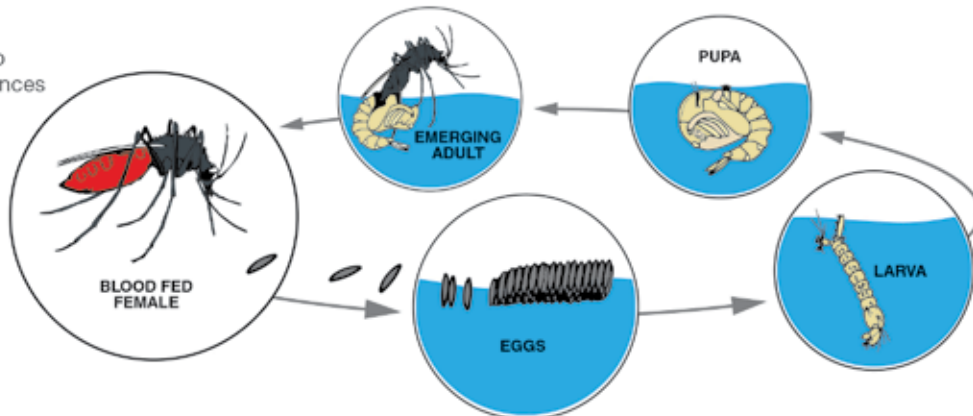
TYPES OF RESISTANCE			
 <p>Reduced penetration of mosquito cuticle by insecticide</p>	 <p>DNA change at insecticide binding site</p>	 <p>Enzymes inside the mosquito break down the insecticide</p>	 <p>Able to detect and avoid insecticide</p>
CUTICULAR:	TARGET SITE:	METABOLIC:	BEHAVIORAL:
<p>The mosquito cuticle can become less penetrable by one or more insecticides, which can slow absorption of the chemicals into their bodies.</p>	<p>Target site resistance occurs when the pesticide binding site changes such that the pesticide can no longer bind properly inside a mosquito. Without proper binding at the target site and insecticide may lose some or all of its effectiveness.</p>	<p>Metabolic resistance is the result of increased detoxification of one or more insecticides by enzymes produced within the mosquito. New research suggests the possibility that this type of resistance may, at times, occur inside the insect cuticle – the first point of contact between a mosquito and an insecticide. Many times, metabolic resistance will cause increased susceptibility to one class or insecticide will decrease susceptibility to another class of insecticide. This is known as cross-resistance.</p>	<p>Behavioral resistance can occur through a change in the activity, or behavior, of a mosquito population in response to a prolonged and consistent use of a control measure. Behavioral avoidance of insecticide-treated bed nets by mosquitoes is an example in which behavioral resistance has resulted in the decreased effectiveness of a control measure.</p>

## Recipe For Resistance

Insects in general, and mosquitoes in particular, evolve quickly to changes in their environment, such as the presence of insecticides, since they are capable of producing many generations in a short time. One female mosquito may produce between one thousand and three thousand eggs in her lifetime. In two, maybe three weeks, thousands of eggs will have become adult females laying eggs. The high numbers of individual mosquitoes in field populations combined with rapid reproduction results in their ability to evade control at an alarming rate. Prolonged and consistent use of a single control measure is conducive to resistance evolution. This dynamic is greatly exacerbated and complicated by forces other than mosquito control efforts:

**1)** by far, most insecticides present in the environment come from agriculture, **2)** many of the insecticides used in agriculture and for mosquito control are of the same class, pyrethroids and **3)** there are few alternative control measures for adulticide use. While synthetic pyrethroids are commonly used because they are very effective, some target pests have developed resistance to them due to their prolonged and consistent use.

Speed of mosquito reproduction enhances the capacity for populations to evolve quickly



## Solutions

Effective mosquito treatments start with an IPM approach followed by targeted chemical treatments.

### SURVEILLANCE AND EXCLUSION

Inspect the entire area for harborage and breeding sites. Remove all sources of standing water and other potential breeding sites.

### SYNERGIST

Select a product that contains a synergist. While synergists are not insecticides by themselves, they enhance insecticide efficacy. Piperonyl butoxide, commonly referred to as PBO, is one of the most common synergists used in insect control today. It prevents the breakdown of the insecticide in the insect which leads to increased efficacy at lower concentrations.

### INSECT GROWTH REGULATOR

Insect growth regulators (IGR) have a very different mode of action than adulticides used for mosquito control. IGRs affect the hormonal system of the insects rather than killing them outright. One type of IGR is a juvenile hormone (JH) mimic. Pyriproxyfen is a JH mimic and can prevent the transition of larvae into adults, effectively ending their life cycle at the pupal stage. It remains bioavailable after applied. What does that mean for pest management professionals? When IGRs are used to treat potential breeding sites, the IGR will work to prevent emergence of the biting adults for an extended period of time.

*Williams, Jennifer, PhD. 2017. Fighting mosquito resistance: what every control professional should know. Whitepaper, published by MGK. For additional information on fighting mosquito resistance, visit [MGK.com/Resistance](http://MGK.com/Resistance).*

## FEATURED PRODUCT

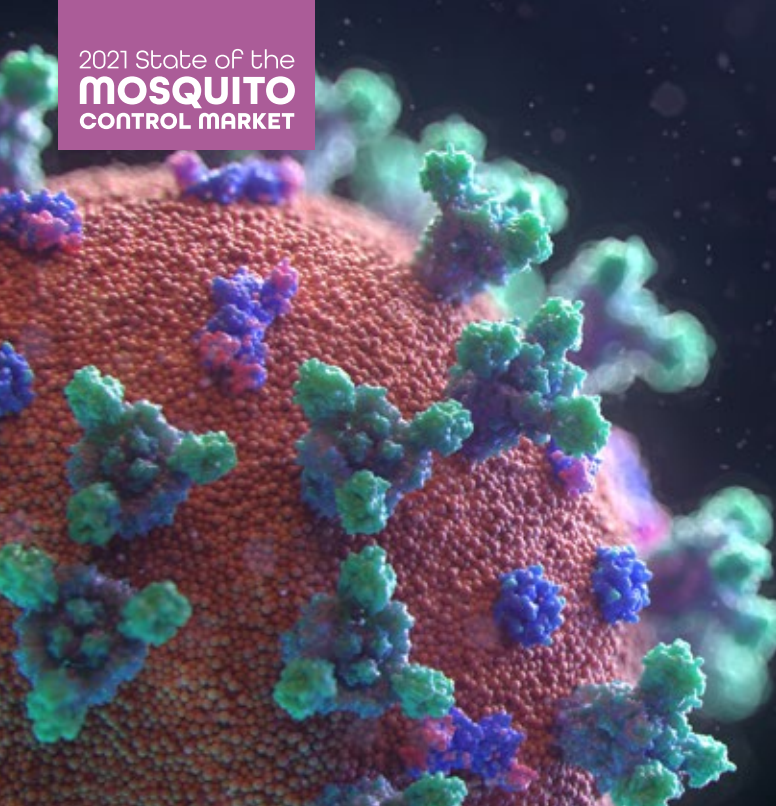
### CHOOSING THE RIGHT MOSQUITO CONTROL PRODUCT

OneGuard® Multi MoA Concentrate is the only barrier treatment PMPs can use that, in addition to a microcapped pyrethroid and knockdown agent, has resistance-fighting PBO as well as an IGR. This multi-mode action, all-in-one solution is effective against *Aedes*, *Anopheles* and *Culex* mosquitoes.

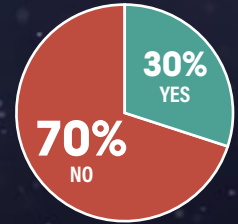
Visit [MGK.com/OneGuard](http://MGK.com/OneGuard) to learn more or [MGK.com/mosquito-control](http://MGK.com/mosquito-control) to see more MGK mosquito control solutions.

For additional information on fighting mosquito resistance, visit [MGK.com/Resistance](http://MGK.com/Resistance).

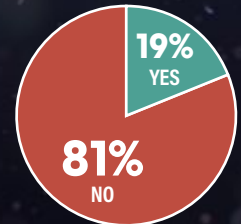




Did your location adjust its mosquito control treatment protocols in response to the COVID-19 pandemic?



Do you expect the COVID-19 pandemic to have a long-term impact on the way your location delivers mosquito control services to the marketplace?



Source: Readex Research; Respondents: 195

# Impact of COVID-19 was Mixed

More than a third (37 percent) of PMPs said the COVID-19 pandemic had a positive impact on their companies' overall *pest control business* in 2020, found the 2021 PCT State of the Mosquito Control Market survey.

When it came to *mosquito control*, however, only 26 percent said the pandemic had a positive effect, and half said it had no impact.

In follow-up interviews, some PMPs reported that more customers noticed the pests due to the pandemic's stay-at-home orders.

"COVID has brought a higher focus for all to our living spaces, both indoor and outdoor. As people are home more, they're spending more time outside, and they want to have a mosquito-free outdoor space. That's become of great importance,"

said Trey Strickland, Waynes.

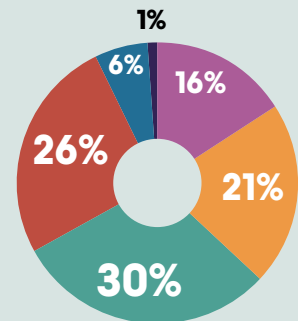
SafeYard Mosquito Services in Holly Springs, Ga., picked up new customers who weren't satisfied with their existing mosquito control service. "Yes, we did gain more business. The downside is people were out in their yards more and they noticed every little thing," said Matthew Jennings, owner of the company.

That made setting customer expectations — that service is about *reducing* mosquito populations, not *eliminating* them — all the more important, Jennings pointed out.

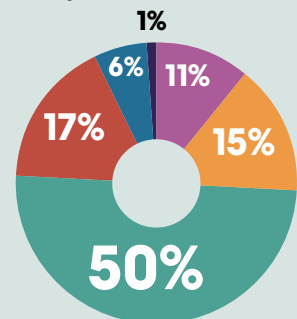
Most PMPs (70 percent) said their companies did not adjust their mosquito control treatment protocols in response to the COVID-19 pandemic, and 81 percent did not expect the pandemic to affect the way their companies deliver mosquito control services to the marketplace long-term.

In 2020, what impact did the COVID-19 pandemic have on your:

*overall pest control business*



*mosquito control business*



- significant positive impact
- modest positive impact
- no impact
- modest negative impact
- significant negative impact
- no answer

Source: Readex Research; Respondents: 195



# Service Opportunities, CHALLENGES

**T**ypically, mosquito control was offered as an add-on service (85 percent) to residential customers (97 percent), reported PMPs in the 2021 PCT State of the Mosquito Control Market survey.

At Fahey! Pest and Lawn Solutions, it can be added to general pest and termite baiting programs for about half the cost of a stand-alone mosquito control program. Although this increases service frequency from three to six times a year, it still makes fiscal sense.

“It’s a significant costs savings for the customer, and it’s still profitable to us, because it’s the same guy adding an extra 10 to 15 minutes to his service while he’s already on property,” explained Kyle Varona.

Nearly all PMPs (94 percent) said their companies provided no-obligation quotes to clients who inquire about mosquito control service.


In follow-up interviews, some said mosquito control provides a path to convert clients to quarterly pest control programs. Others said their companies offer the service because they don’t want to lose customers to competitors who do.

Mosquito control franchise companies were the primary competitors of this service for nearly half (48 percent) of PMPs, followed by local (21 percent) and national (10 percent) pest control companies.

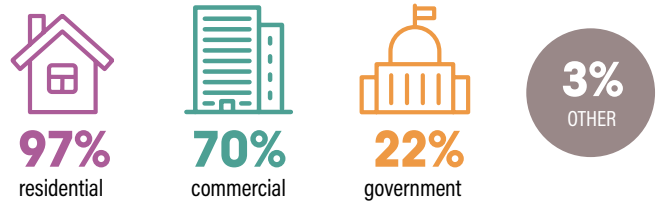
Local government entities providing vector control services were the main competitors for 8 percent of PMPs. “In my particular area, our county has a well-funded mosquito control district that performs very well, so mosquito control is not really part of my particular niche,” said Dustin Whitehead, owner of White Line Pest Management in Roseville, Calif.

Likewise, the mosquito control districts are very effective in greater Minneapolis, said Andrew Taylor, technical director of Plunkett’s Pest Control. “They do a really good job of it up here. I don’t see us beating what’s currently being offered by the county,” he said.

Local and state regulations can inhibit a company’s ability to provide mosquito control service.

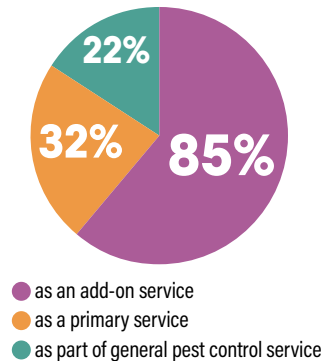
In New York, for instance, applicators need separate licenses for larvaciding, lawn and turf applications, public health pest control and structural pest control. “Regulation makes it difficult to have a cohesive mosquito control program in the state of New York,” said Gil Bloom, Standard Pest Management. 

## For what types of accounts does your location offer mosquito control services?



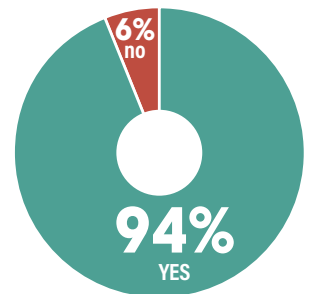
Source: Readex Research; Respondents: 195; multiple answers

## How does your company offer mosquito control service?



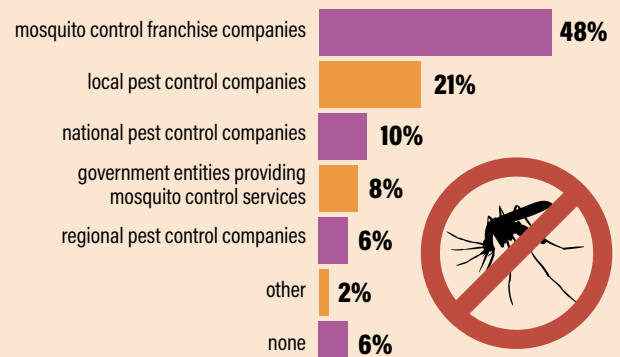
Source: Readex Research; Respondents: 195; Respondents could select multiple answers

## Does your location provide no-obligation quotes to customers inquiring about mosquito control services?



Source: Readex Research; Respondents: 195

## What do you view as your location’s primary competition for mosquito control business in your market area?



Source: Readex Research; Respondents: 195



# Effective Ways to **SELL MOSQUITO CONTROL**

**T**ypically, customers buy mosquito control service because they don't want to get "eaten alive" when they go outdoors to enjoy their patios and pools, said PMPs in follow-up interviews.

"My target customer sees pest control as a part of home ownership. They're already of the mindset that this is something I need to get," said Kenneth Beason of Providence Integrated Pest Management.

No surprise, PMPs were most successful marketing their mosquito control services to homeowners (53 percent) and families with young children (31 percent), found the 2021 PCT State of the Mosquito Control Market survey.

Beason said his mosquito clients have a higher household income, and at least one adult either works from home or is home with children full time. Usually, women

are the decision-makers when it comes to this service, he said.

According to 64 percent of PMPs, word-of-mouth was the most effective type of advertising for mosquito control. Matthew Jennings of SafeYard Mosquito Services offers a discount for referrals; one of his customers holds backyard parties each year to show off the effectiveness of his mosquito misting system, which brings in new clients for Jennings.

Half of PMPs said they promoted their mosquito service online. Beason highlights his mosquito and general pest control service bundle on social media.

He also does neighborhood mailings, which he follows up with timely door-to-door sales. "That seems to be extremely effective," he said. According to the PCT survey, 21 percent of PMPs had success with door hangers/cloverleafing.

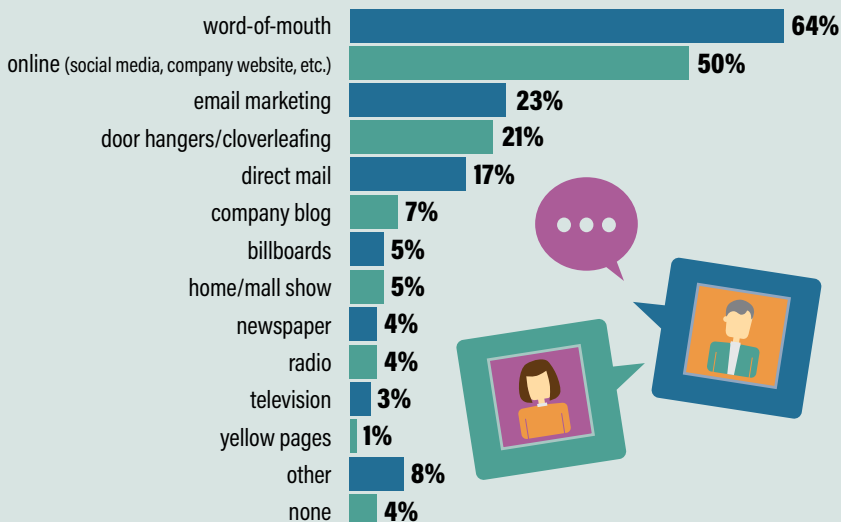
Email marketing, cited by 23 percent of survey respondents, helped Fahey! Pest and Lawn Solutions convince a significant number of existing customers to add on mosquito control last year.

"It was probably the most successful email campaign that we could remember," said Kyle Varona, who plans to conduct a similar campaign for new and existing customers this spring. "Not all of them realize you offer that service, so it's making sure you're getting the word out to them that you can help them with the protection," he pointed out.

Other companies like Plunkett's Pest Control rely on technicians to sell the service to clients.

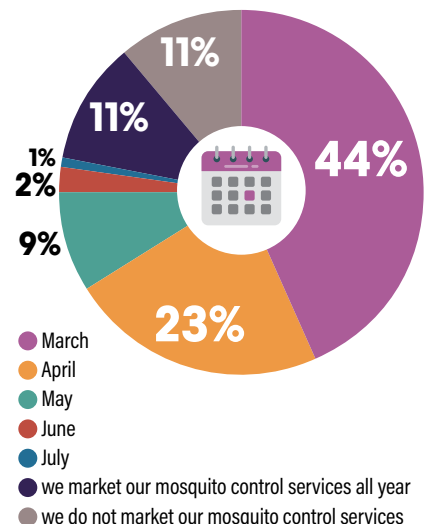
Most pest management professionals (44 percent) said they begin marketing their mosquito control services to customers in March. 🦋

## Most effective types of mosquito control advertising:



Source: Readex Research; Respondents: 173; Respondents could select multiple answers

## What month do you begin marketing mosquito control services to customers?



Source: Readex Research; Respondents: 195

# Expect **DOUBLE-DIGIT** GROWTH in 2021

This should be another good year for mosquito control. Nearly two-thirds (64 percent) of PMPs expected revenue from the service to increase in 2021, according to the 2021 PCT State of the Mosquito Control Market survey.

The average increase was projected to be 18.5 percent.

With more and more people moving to Houston from areas with less pest pressure, the future looks good for Providence Integrated Pest Management, said Kenneth Beason. “For those people, it’s a shock to the system to see some of the pests we have here, which includes mosquitoes,” he said.

Last year, the pandemic helped boost mosquito control for H & H Pest Control; this year, weather may be a factor. “We’ve had a really wet winter and a really wet spring, which is good,” said Allen Langley.

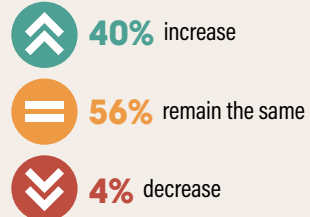
Kyle Varona of Fahey! Pest and Lawn Solutions urged peers to consider offering mosquito control as an add-on service if they don’t already. “It’s not that expensive to perform the service as far as the equipment and the material you have to use,” he said.

To prepare for the jump in business, 40 percent of PMPs said their companies planned to increase budgets for mosquito control application equipment in 2021. 🦟

### Expected change in mosquito control revenue in 2021 from 2020:



### Expected change in budget for mosquito control application equipment in 2021 from 2020:



Source: Readex Research; Respondents: 195



# 18.5%

Average expected change in mosquito control revenue by percentage points

## About the Survey

The 2021 PCT State of the Mosquito Control Market survey was sponsored by MGK and compiled by Readex Research, a privately held research firm in Stillwater, Minn. A sample of 4,229 pest control company owners, executives and technical directors was systematically selected from the PCT database. Data was collected from 267 respondents — a 6 percent response rate — via online survey from Feb. 24 to March 8, 2021. Seventy-two respondents indicated their companies did not provide mosquito control services and were terminated from the survey. The margin of error for percentages for the remaining 195 respondents is plus or minus 6.9 percentage points at the 95 percent confidence level. Charts may not add up to 100 percent due to rounding.



MOSQUITOES SUCK.  
Now you can make them suck less.

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