

## **Pest Monitoring Pays Big Dividends at McMinnville Housing Authority**

Over the years, cockroaches became a serious problem at McMinnville Housing Authority (MHA). The Pest Management Professional (PMP) made monthly visits and used a variety of control methods, but infestations persisted. Residents complained and took pest control into their own hands, maintenance personnel found cockroaches in smoke detectors, and employees feared carrying pests home. The staff understandably worried about the potential of lower REAC scores. To solve these problems, MHA looked to Integrated Pest Management (IPM). An IPM program consists of a series of steps to prevent and control pest infestations. The steps include monitoring pest populations to provide a continuous evaluation of the program's effectiveness.

In the fall of 2011, trainers from the Northeastern IPM Center conducted IPM training for staff and residents. Once everyone understood the biology and behavior of cockroaches and the other pests in the area, they could see how IPM would work. They made a plan to turn units into pest-proof boxes to prevent pest entry. Then, the only pest entry would be hitchhiking on residents' possessions. Move-in procedures and resident education about prevention and inspection lessened the chances of pests entering undetected.

### **Ready for a Clean Sweep**

MHA is in McMinnville, Tennessee and has 424 units. The staff chose the 80-unit West Riverside Housing Development as the pilot site. Built in the 1963, West Riverside has mostly duplexes. At the start of the IPM program the site was undergoing major renovations. MHA relocated residents during construction. Construction crews removed interior walls and cabinets, exposing many areas where cockroaches had been hiding. Where inspection of exposed areas found no cockroaches, frass (droppings) indicated their presence. MHA saw renovation as an opportunity to clean up the homes and pest-proof them against future infestations.

### **Success by Design**

The West Riverside layout enhanced pest control success. The units are separate from one another. Each building is a duplex, offering the ability to have pest-proof compartments by focusing on pest-proofing ducts and other connections between the two homes. Once the structures were pest-proof, the only way for German

Cockroaches (the main pest of MHA) to get in was by hitchhiking on residents' belongings.

Patricia Basham, Executive Director of the MHA, was aware of IPM and wanted to learn if it would help improve pest control. With renovations under way, she seized the opportunity to pest proof her units and start a pest management program that would keep them pest-free.

Basham knew there was more to pest control than calling the PMP; that it was important to have everyone living and working at MHA functioning as a pest control team. The renovation contractors were pest proofing homes, but it was up to the residents to keep the pests away. The lease mentioned housekeeping, but many residents never learned how to maintain a clean home or help solve pest problems. Basham modified lease to include IPM and the residents' role in IPM. She also started resident training to spread the IPM message and to change residents' routines so that homes were not pest-friendly.

### **Work Order Makeover**

In addition to renovating, MHA was upgrading its electronic work order system. Rather than keeping everything in her head, Basham wanted to track the IPM program's progress through this new system. She enlisted the help of Todd Robinson, the West Riverside Maintenance Supervisor. Robinson and his crew work in units every day and know the residents and the pest pressures at the site. These employees could make repairs and the recommendations needed to make homes attractive for people but unattractive to pests. At the beginning of the IPM program, Robinson helped develop a maintenance check sheet to coordinate maintenance and pest management issues.

### **The Plan**

Sealing units helped not only with weatherization but assisted in pest exclusion and the elimination of areas where pests could hide. As part of the renovation, crews removed much of the cockroach frass. In addition, the PMP used bait and other least-risk methods to eliminate cockroaches if crews found them. Robinson and his crew learned the dos and don'ts from the IPM training and Stoppests.org. "[As part of the training] we went into our public housing units, some undergoing major renovations, and learned the signs of current and/or previous infestations," said Basham.

MHA added IPM housekeeping expectations and non-compliance ramifications to the lease. IPM training is now part of new resident orientation. Existing residents receive training run by MHA personnel using the resident training video available at Stoppests.org. Now residents know what to look for, what to report, and how their actions affect pest control. "We strengthened our policies and procedures and continue to train residents in the ways they can prevent and control pests in their units," said Basham. Although residents are on the front line, maintenance and management staff also find problems.



**Residents receive pest control and cleaning supplies as part of their training.**

### **Monitoring is Key**

In an IPM program, monitoring devices capture pests and provide the data for determining where pests are active. Visual inspections done during the day may miss beginning infestations since the pests are mostly active at night. Monitoring seems like extra work, but it pays dividends. According to Basham, "We immediately ordered the cockroach monitors and placed them in our units." With the monitoring records in hand, MHA manages pests property-wide and has the documentation to prove it.

Monitoring was something new for MHA and proved its worth. Robinson and Basham developed a customized pest control log for their operation, "We modified our inspection sheet so it would fit our unique situation," said Basham. To coordinate maintenance and pest issues, the check sheet includes pest control parameters anyone can discern and the monitoring results. It is part of routine maintenance inspections and part of the turnover procedures. By maintaining monitoring records, MHA personnel know where pests are under control and can focus time and the PMP's efforts in areas where infestations have begun. Small infestations are easier to eliminate than infestations that have grown and spread. Monitoring increases the efficacy and efficiency of a pest management program.

### **Coordinate the Team**

As with any new technique, synergizing management, resident, maintenance, and PMP roles presented a challenge. The IPM team had the tasks of educating everyone on the site, monitoring and inspecting in each unit, and eliminating pest problems. Combining and refocusing some jobs accomplished more without adding work. Staff continued performing their routine tasks but with added awareness of their impact on pest control.

Before IPM, the PMP spread his time among all units. He performed some monitoring and applied pesticides on a routine basis. The PMP relied on pesticides to keep infestations down until his next visit, "because pest control was viewed as a service, not a way of life for everyone at MHA," according to Basham, "The drastic change came when the responsibility for monitoring was shifted to residents and maintenance." Now every unit has monitors, one behind the refrigerator in the kitchen and another behind the toilet in the bathroom. Maintenance staff checks the monitors and records the results each time they go into a unit. With good recordkeeping, MHA learns where infestations are, then directs the PMP's limited time to eliminating infestations.



**Monitors: in kitchen behind refrigerator and in bath behind toilet.**

Through the work order system, residents and maintenance assist the PMP by supplying information on pest activity. Maintenance personnel always accompany the PMP when he visits units. Even before IPM, maintenance staff members visited each unit bimonthly to replace furnace filters. While there, it takes only a few extra minutes to check monitors and record the findings. On alternate months, management inspects residences. During these inspections they now check monitors and any maintenance items with potential pest control consequences. Someone from MHA, therefore, is in every unit each month checking monitors with very little addition to their workload. The PMP's time is reserved for actual control measures and advising MHA managers on how to improve their program. Compiling site-wide monitoring data helps the PMP and management identify areas for improvement and further refine the IPM program.

### **Good Cockroach Control**

When MHA decided to transition to IPM, the units had been vacant between three and six months and pest activity was low. Without IPM, Basham expected most of the units would be re-infested with cockroaches after residents returned. Since the implementation of IPM, monitoring has detected cockroaches in only four units. In all cases, residents were recent arrivals. Most likely, they brought cockroaches with them from an infested location. Early detection allowed for quick control. Improved control paid dividends in other ways. According to Basham, "The REAC inspector did not find a single cockroach during our recent REAC inspections."

Although MHA implemented IPM because of cockroaches, they knew of other potential pests, including rodents and bed bugs. Through IPM training, staff members and residents learned about other pests and about how to manage them.

Monitoring and good communication set MHA up for success with bed bugs. Since the training, there have been only two occurrences of bed bugs. Residents reported them and the PMP responded immediately, before the infestation could spread. A new bed bug policy is now in place helping ensure future success. Maintenance efforts and housekeeping help manage not only cockroaches but also rodents and ants. A well run IPM program never is limited to a single kind of pest.

Basham sums up her IPM experience this way, "The Northeastern IPM Center has helped us every step of the way, providing names of suppliers, language for policies and anything else we needed. I do hope that HUD continues and even expands this program. Every PHA needs the opportunity to receive this training."

To Replicate MHA's Results:

1. Train staff and residents on pests and IPM.
2. Set up an electronic system for recording monitoring results and pest management efforts.
3. Install monitoring devices in every home (ask your PMP for monitoring options for pests in your area).
4. Assign the monitor checking and recording results role to the staff that enter units on a routine basis.
5. Take action based on monitoring results.

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On behalf of  
The Northeastern IPM Center

**Acknowledgements**

Funding for the IPM training and implementation support came from a Housing and Urban Development (HUD) and U.S. Department of Agriculture (USDA-NIFA) interagency agreement.

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. (EPA)

For more information and resources visit; [www.stoppests.org](http://www.stoppests.org)