Inspect, Detect, Correct

Structural Integrated Pest Management strategies at school

By Jerry Jochim

Editor's Note: This article is adapted from a transcript of Jerry Jochim's presentation at the School Pesticide Reform Strategizing Summit, a meeting of activist leaders on school pesticide reform coordinated by Beyond Pesticides on November 15, 2002. Mr. Jochim has been the IPM Coordinator for the twenty schools within the Monroe County, Indiana Community School Corporation since 1997.

The Monroe County Community School Corporation in Indiana has developed a model Integrated Pest Management (IPM) program. It is dependent on an educational approach that creates an awareness of all school occupants. Monitoring, sanitation and exclusion strategies represent a proactive management program versus the more reactive strategy of chemical pesticide treatments. By incorporating IPM into existing school operations (sanitation, maintenance, and classroom education), our school district has overcome the natural resistance of adding pest management to an already full plate.

IPM is all about education. The more you educate people, the better IPM strategies will work. The advantages of IPM are cleaner buildings, tighter buildings, fewer pests, pesticide exposure is all but eliminated, and IPM fits well with existing maintenance tasks. IPM, for the most part, is just common sense.

Monroe County's IPM Approach

IPM is a process of utilizing education, exclusion, sanitation, monitoring, mechanical trapping, and if necessary, the least toxic pesticide available.

Implementing an IPM program

Inspections. "Inspect, detect, correct," is a phrase I use to get the custodians to understand the IPM approach as they go through a school. Inspect and constantly look up at the ceiling, check pipes, and check anything in the walls. Constantly try to look around and if they detect a potential pest problem we get it corrected. We do a lot of inspection.

Custodians carry "maintenance needs" packets to keep track of needed school repairs. It's a little checklist, a tool that has been really helpful and the custodians like it. They check off the problem, write down the room number and save it for later. Maybe it's something they fix, maybe they will give it to the supervisor, or maybe there is a work order that needs to be submitted. But, it reminds them that these things need to be fixed. We want to patch, seal or otherwise close all possible pest passageways.'Our solution is to keep insects and rodents out. If they are outside, they're not a pest. But when they come inside and they're competing for our food, our water and our living area, then they become a pest.

A spatula is a really good inspection and cleaning tool. If a spatula fits in a crack, in concrete, baseboards, wallboards or underneath chalkboards, insects can use that space to access the room.

Use the Proper Sealant. When a hole or crack is found, expandable foams are not the best way to prevent pests. They are filled with voids that can lead to pest harborage. Concrete patch or silicon gel can effectively seal cracks and gaps.

Sanitation. This is key of course. Do not give insects a reason to be a pest. Get rid of the food and keep them outside so they are not pests. Keep food in pest proof containers and use plastic containers that seal.

Monitor. Our custodians check monitoring traps on a weekly basis. Then each month they send me a report. Most of the time the reports come back negative for pest infestations. If they have a problem, this is one of the ways they let me know. We use cockroach monitors in all of our buildings. They fit into corners and on shelves in kitchens and teachers' lounges and problem classrooms. I do not apply any baits unless I know I have a problem, if I do apply something, it's least toxic product that I have available.

Record Keeping. Pest-sighting logs are kept in the office area and teacher lounges. If anyone sees any kind of pest, they are supposed to write their name, a description of the pest, and how many were seen. Having the person's name is important so I can get a better idea of the pest problem. Having pest sighting logs helps, but we don't always get a high degree of cooperation with them.

Least-Toxic Alternatives. We only use trapping methods for rodents. That's all. We don't use any rodent baits because rodents can relocate them. Rodent bait pellets can get into the cafeteria food.

Specific school problem areas

Plants. Foliage against building walls leads to pest invasion by providing pests more opportunity to enter the building. Keep the plants away from outside walls.

Trash should be handled properly. Don't contribute to a pest problem.

Harborage like this can lead to building invasion.

A dumpster that is overflowing attracts all types of pest problems. Dumpsters' lids should fit tightly.

The more you educate people, the better IPM strategies will work.

Garbage. Put covers on your trash cans and handle trash properly. Sometimes, dumpsters overflow. If this is routine, arrange for more pick-ups or get a larger dumpster.

Custodial Closets. Custodial closets are a prime area for pest infestation if they are not kept clean. Insects can distinguish between cleaning chemicals and foods in brooms and mops. Insects can live in brooms. I've seen mop buckets with ants crawling all over the mop. This happened because someone had mopped up a soda spill the night before and left it in the bucket without cleaning it out. The next day it was covered with ants. Custodial closets and cleaning equipment need to be kept clean.

Bathrooms: With all the water in bathrooms, this is a prime area for insects. Cleaning cracks and crevices with an icing spatula can reveal insect harborage and food. Bathrooms provide access for all kinds of pests including mice and roaches. Escutcheon plates around pipes also need to be sealed up. Pests love pipes.

Our custodians kept telling me they had roaches in one of the classroom bathrooms. I flipped the light on at ten o'clock at night and I saw roaches. They darted right to the front of the classroom into the restroom and went right into a hole around the pipe. There was no escutcheon plate around the pipe to prevent traffic in and out of the wall. It's like condominium's inside concrete block walls to insects and mice. They can go many places and have nice apartments everywhere they go. We baited where we found them'and waited a few days until they were gone and sealed up the hole.

Ceiling Tiles. Sometimes you might see a gap between ceiling tiles. This is another access point for pests to enter classrooms. Also, any time a tile gets damp, it is important to quickly change it to prevent mold.

Doors. Open doors can lead to many problems, such as allowing pests to easily enter the school building. It's also important considering the security issues we have today—it all blends together. Make the buildings secure.

Daylight that can be seen between the door and the doorframe shows where insects can access the building. If you can stick a pencil under the door a mouse can enter. A quarter of an inch is all a mouse needs to crawl underneath a door.

Closets. Clutter invites pest populations. It dilutes pest control practices by increasing pest harborage and increasing pest travel time to baits. This is where educating the school occupants is key.

One of our smallest elementary school's custodian called me two weeks before spring break and said, "Jerry, I need some mousetraps." So I sent him some mousetraps. Next day he called me again and said, "Jerry, I need some more mousetraps." Next day, he called me again and needed more mousetraps. I asked him what was going on and he said,""I don't know. They're just coming out of this one classroom." The custodian opened the closet in the classroom and found it to be extremely cluttered with paper, boxes and craft materials. After moving some stuff around in the closet, he set the traps. In that one classroom he caught fifteen mice, in three sur-

rounding classrooms there were another fifteen mice and three mice got down the hall. In a two-week period he caught thirty-three mice in a school that had less than three hundred students. After that, it was spring break and the teacher was asked to empty out her closet. When she started cleaning it up she saw all the mouse droppings, signs they were in there for a long time. That was two years ago. We haven't had a mouse problem in that school since.

Pets in School. A lot of our teachers have pets in their classrooms. One even has three Norway rats. She had roaches because she was not storing the food properly. Pets' food must be kept in sealed containers in order to prevent pest outbreaks.

Recycling. Recycling containers can be a big problem when it comes to pests. If soft drink cans are not taken out daily or at least three times a week, you will probably get fruit flies. People will call me and say we have little gnats-like things flying all over the place. I will check it out and sure enough, they will have recycle cans that have not been emptied for a while. Recyclables need to be taken care of on almost a daily basis.

Kitchens. Kitchens have plenty of food for pests. Kitchens may look like clean rooms but you have to get down to the pest's perspective where you can often find a lot of things like French-fries in the corners of the room. Fries are a great food for several pests, such as roaches, mice and ants. Also, oil can be splattered on cardboard boxes. Roaches can live in and off of cardboard boxes. They live off the glue, which is starch, and fibers of the cardboard. When you throw in this dessert, oil and greases, why would they ever want to leave?

In one of our high schools we had a problem in the kitchen. The kitchen staff will sweep the floors and sometimes sweep up the traps as well. They do not notice when they sweep up the traps. Later, we will notice several traps are missing. To solve this problem we are now having the cooks check the traps in the kitchen. It will give them more ownership and understanding for keeping the traps in place.

Donations. Sometimes schools will collect donations, such as clothing. I understand why they collect them, but from my perspective, it can be a nightmare. We have had several cases where roaches and/or mice have been brought in with this clothing. Please be careful of donations.

Specific pest problems and solutions

Although not much of a problem anymore, pests commonly found in our schools are carpenter ants and roaches. Other pests include bats, flies, rodents, stinging insects, stored grain pests and termites. Roaches used to be our number one problem, but we see very few anymore.

Cluster Flies. We had cluster flies at one school. The flies would go to the window and die. Then we would have custo-

Keep the clutter down and inspect for maintenance repairs.

This escutcheon plate is loose. All possible pest entries should be patched, sealed or closed.

Replace missing or damaged ceiling tiles.

The grease and starch from these boxes provide plenty of food for pests.

dians sweep up them up. We found out a teacher brought in house plants that had fly larvae in the soil. This is one of those education topics. I personally do not want to get rid of the plants, but we have to watch them pretty closely to make sure they don't bring in new pests to the school environment.

Rice Weevils. We had weevils and mealy moths in science rooms because the teacher brought in a galvanized trashcan over half full with bird feed. The custodian called me and said, "we have some really weird bugs in our science room." They were rice weevils. The best thing to do is throw the bird feed away. But because the teacher had birds and did not want to throw it away, storing the birdseed in plastic bags (triple bag it) in the freezer for three days is an effective solution.

Mealy Moths. During summer cleaning in one of our science rooms we discovered moths. The science teacher had left an open bag of corn in his room. The best thing to do is throw it away and clean out the room. We knew it would take awhile to get all the moths and their larvae out of the room. Every few days we checked and saw fewer and fewer. All together it took about six weeks to get rid of them.

Questions and answers

Q. Has IPM in Monroe County Schools decreased the cost of pest management?

A. Before we started IPM, the cost was $34,000 annually. After I was hired we cut that to about half. The total cost is significantly less because we have very little pesticides coming into the school and we have nearly everyone helping with the program.

Q. How did you go about training your staff in IPM, were there any problems?

A. The people we were working directly with saw the results. We made the mistake of not involving the kitchen staff, but once they saw the results they were pleased. It wasn't too difficult. When you can show someone within a year that IPM will not make anyone ill, it works. There is going to be a transition period when starting an IPM program. School staff are going to have to make some changes. But after that it becomes normal, routine. IPM may even be less work, but it the beginning it can be difficult to convince them of that.

Q. How large is your biggest building?

A. There are 20 custodians at our largest high school with 1,800 students and 400,000 square feet of space.

Q. You've said you worked in southwestern climates and northern climates. Some people in southern climates argue against IPM saying it is more difficult for them to get rid of their bugs. From your experience do you perceive climate as a problem?

A. The principle is the same—you want to keep the pests out of the school buildings. Keep the clutter down and inspect for maintenance repairs. There is enough moisture and clutter for roaches to survive. The other big issue will always be sanitation. IPM doesn't mean "no pesticides", they are simply to be used in a smart manner and as a last resort.

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An icing spatula shows that the seal around a sink is missing, identifying the space that pests use to move around.

Q. How do you explain the dangers of spraying pesticides, for example, baseboard treatments?

A. Al Fournier at the IPM Technical Resource Center at Purdue University designed a presentation to show where the pesticide sprays go and how dangerous it is. He put a fluorescing chemical in a conventional pesticide spray container. With a black light, the chemical really showed up. At the IPM workshops he conducts Al asks people to show him how the pest control operators spray using his container. Then Al turns on a black light. His light shows how far up the wall the pesticide goes and how far over the floor. Not only that, when participants lifted their shoes, the chemical was on their shoes and footprints were found going out of the room. This was a real eye opener for a lot of people.

Mr. Jochim not only runs Indiana's Monroe County Community School's IPM program, he is also an IPM trainer. Training has taken him around the country to several states including Alabama, Arizona, California, Illinois, Massachusetts, Nevada, the Navajo Indian Reservation and throughout Indiana. Mr. Jochim likes to provide IPM implementation training to other schools needing assistance when he can get away from his schools. He can be contacted at: Jerry Jochim, IPM/Custodial Coordinator, Monroe County Community School Corporation, 560 E Miller Drive, Bloomington IN 47401, (812) 330-7720, jjochim@mccsc.edu, http://www.mccsc.edu/~jjochim/ipm.html.