

**INTEGRATED PEST MANAGEMENT (IPM)
IN
NORTH CAROLINA SCHOOLS**

**A sample of school districts that have implemented IPM
programs**

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(Have we missed your story? Let us know.)

BUNCOMBE COUNTY SCHOOLS

Contact person: Mr. Clark Wyatt

Number of Schools: 43

Pest Control: Contracted to Dodson Pest Control

Important Pests: Ants, Mice, Cockroaches, Fleas, Lice

The IPM Program:

Buncombe County Schools shifted from monthly pesticide sprays to IPM 6 years ago (1997). A parent complained that her 2 children suffered health problems when custodians misapplied foggers in a school during routine pests control getting both teachers and parents concerned. Dr. Mike Waldvogel (Urban extension specialist, North Carolina State University), helped the school system to formulate an IPM contract and a request for bids emphasizing IPM procedures and practices i.e. inspection, pest identification, non-pesticide technologies, structural and procedural modifications to remove conducive conditions, and use of least toxic compounds and reduced risk pesticide formulations and application methods when needed. Dodson pest control won the bid. After inception of the IPM program, any chemicals available to custodians were removed from the schools.

Logbooks (pest sighting logs, IPM plan, MSDS sheets etc) were placed in the cafeterias and main office of each school. On each scheduled monthly service visit to a school the PMP checks the logbook, addresses the pest problems and inspects the school. In case of an emergency, the school calls Clark, who in turn calls the PMP. The quality of service is ascertained by periodically following the PMP to see how he works and by the number of calls schools make for pest control.

Education:

- Presentations to promote IPM at the Principals meetings, maintenance employees, faculty meetings (1/month), and cafeteria employee's meetings; meetings with child nutrition director, assistant superintendent etc.
- Situational: problem reports present opportunities to explain IPM. Clark once followed an ant trail from outside to the exposed snacks in a teacher's desk drawer. This convinced the teacher to store the snacks in a pest proof container.
- Letters and memos sent to let schools know about the IPM approach.

Challenges:

- Health inspectors can become a hindrance to IPM because they do not understand how IPM works. A school can be cited if cockroaches are seen in traps, yet traps are essential for detection and monitoring pests. The contractor should explain to health inspectors the function of monitors and traps in IPM.
- Most pest problems even in cafeterias and teacher's lounges are introduced. Students sometimes bring cockroaches into the schools in their backpacks.

Roaches were seen crawling out of a student's bags during breakfast in the cafeteria. Thereafter students were asked not to bring their backpacks into the cafeteria.

- It is difficult to convince the school community that surface sprays do not solve pest problems. But with education, this problem is being solved.

Cost:

There is one contract for the entire school district renewable annually. Indoor and outdoor pest control services are contracted at \$55/school/month.

Comments:

There are many advantages of IPM over traditional pest control:

- Reduced pesticide use and storage also reduces the liability.
- They save money because no chemicals, traps/monitors are purchased
- Pest control is done during regular school hours, therefore the PMP is seen working and solving pest problems.
- Records show that pest problems are seasonal. At the beginning of spring and summer, the number of pest reports increase. The onset of winter comes with rodent problems, as mice try to find warmer nesting sites indoors. With preventative maintenance (sealing cracks and crevices, and installing door sweeps etc.) and good sanitation pest problems can be anticipated and averted before they happen.
- IPM has reduced the number of calls from 60-80/month to 3-4/month. Clark and other maintenance employees have peace of mind and can focus his energy on other pressing issues.

CATAWBA COUNTY SCHOOLS

IPM Contact Persons: Jane Williams and Scott Bowmann

Number of schools: 25 (Total number of sites 30)

Pest Control: Contracted to Orkin Pest Control

Important Pests: Ants, Mice, Roaches, Flies (common Houseflies)

IPM Program:

The Previous pest control system was not as effective as required. Dr. Mike Waldvogel(NCSU Urban extension specialist) asked them to participate in a Pilot IPM program. They accepted and saw how easy it was to implement IPM. Consulting with Mike and participating in the Pilot IPM program made them shift to IPM easily. Scott downloaded an IPM contract and request for bids from the Florida State University website, and adapted it to Catawba county schools needs. Orkin Pest Control won the contract and started IPM in 1999.

IPM Program:

Logbooks were made and placed in the cafeterias because the majority of pest problems occur there. They then focused on changing the system of reporting pest problems. Front office staff and others requesting pest control services were constantly reminded to record the pest problems in the log book. The PMP scheduled 2 visits per month per site to check the logbook and to attend to any reported problems. During those school visits PMP inspects the school and communicates to Scott any required repairs or maintenance.

Education:

No elaborate educational program was followed. Education was dealt with in a situation-by-situation manner, educating teachers and staff about IPM has not been systematic. Using phone calls, memos, and personal contact, teacher by teacher class by class as pest problems arise especially in the kindergarten where kids bring food into the class. They encouraged teachers to keep pests out by storing food in sealable plastic containers. Most schools are comfortable with the new system.

Challenges:

Users of schools for non-school activities do not take care of trash etc. leaving food for pests.

Comments:

They were both very positive about IPM. They'd rather be caulking in a school that attend to a pest crisis. Resistance to IPM implementation is due to lack of knowledge rather than lack of money.

ELIZABETH CITY-PASQUOTANK PUBLIC SCHOOLS

IPM coordinator: Currently Anthony Keeling

Number of schools: 13

Important pests: Ants, Fire ants, Cockroaches

IPM Program:

ECPPS has an in-house pest control program employing a staff of 3 certified pest control technicians. Previously, they contracted a pest control company that sprayed the base boards in classrooms and food service areas monthly. They switched from a contractor to an in-house program in 2003 when they realized that the cost of pest control was increasing yet calendar spray program was not working. Mr. Jack Ward (maintenance director), learned about IPM and proposed to the school board that they could get safer and more effective and affordable pest control with IPM than conventional pest control. He got permission to implement an IPM program.

He first appointed and trained a member of his staff (Mr. Bailey) in pest control and IPM. This person would coordinate the IPM effort and control pests. He selected a person who was concerned about pesticides in schools willing to learn, demonstrate, and effectively communicate about IPM to the school community. According to one of the cafeteria managers, they used to have severe cockroach infestations everywhere in the kitchen. "It was so terrible, you'd open a door and close it right back up again because you'd see them crawling all over the door frame and scare you half to death. They even came up on to the serving lines a few times and crawled right up into the kids' lunch trays". Now that's in the past. The cockroach problem was eliminated using targeted applications of gel baits to the identified hot-spots, and deep cleaning as recommended by Bailey.

The kitchens used to have stacking deep fryers that were difficult to clean because there wasn't enough space in between them. Bailey recommended that the kitchen replace them with new fryers that stand off the ground on 6" legs, next to each other but with plenty of space between, behind and underneath to clean. He also helped the cafeteria manager to work out a more effective kitchen cleaning system. Mops are now kept off the floor, appliances are regularly moved to clean around and underneath, cleaning staff are held more directly accountable for doing their jobs, and the result is a squeaky clean kitchen with no pests in sight.

Through IPM the once terrible fire ant infestations are gone from the school yards. They use a monitoring and control method for fire ants which they call the "yellow flag system". A yellow flag placed near a fire ant mound alerts the students, teachers, and staff and grounds keepers to steer clear; careful monitoring of the area around the flag tells Bailey the size of the infestation and movement of the ant population; and strategic application of pesticide granules close to the mound, where ants pick them up and bring them back to their buddies to share, eliminates the mound for good.

Involving students in the process of fire ant control is crucial. Turner has spent time demonstrating fire ant behavior to students. “I’d tap on the fire ant mound and show the kids how fast they come up, from all directions. Then they understand why they stay away from those yellow flags, and even better, they know what the mounds look like. Now when there is a new mound in the yard, a student will come running in to tell me about it”. Turner has a stash of yellow flags to mark new mounds as he and the students see them. *(Original draft by Billie Karel of ARC/PestEd).*

ELKIN CITY SCHOOLS

Coordinator: Mr. Ron Mack

Pest Control: In-house by Ron who is a certified Pesticide applicator.

Number of Schools: 3

Major pests: Ants and cockroaches.

Why Change to IPM? Ron never liked using pesticides around children. Even before inception of the IPM program, he'd wait until students had left an area or building before applying any liquid insecticides. Knowing that pesticides are risky to young children, through pest control conferences and workshops he attended accelerated his switch to IPM in 2004. In addition, IPM is a more effective pest control approach and safer for the building occupants.

IPM Program: Sanitation and building maintenance and repair are highly emphasized to prevent infestations. Ron is the maintenance director and also coordinates the IPM effort at Elkin city schools. Therefore it is easier to get repairs and maintenance done whenever necessary. Education and awareness about the IPM program and the IPM approach

Ron takes IPM to science classrooms at Elkin City Schools. He collaborates with science teachers to promote awareness and student participation in the IPM program. He also requested a seminar on IPM in Schools for the entire school from the School IPM program at NCSU. At the beginning of the school year, he writes and distributes a letter to each employee and teachers to make them aware of IPM and their role in the IPM program.

Challenges: It is challenging to educate staff and secure their participation in the IPM program. They expect a pesticide to be sprayed whenever they report a pest problem. So it seems strange when they see Ron coming in to inspect and recommend sanitation changes, or storing food, candy etc. in sealable containers or sealing gaps and holes where pests might be entering a building, and using baits whenever necessary. But once they understand the need for IPM, how IPM works, and experience the effectiveness of IPM they participate fully.

GRANVILLE COUNTY SCHOOLS

Coordinator: None

Number of schools: 14

Pest Control: Indoor pest control contracted to WHITCO Termite & Pest Control (Mr. Mark Harrison Owner). The cafeteria and the rest of the school have separate contracts but with the same company. Termite & critter control is contracted to a separate company.

Important pests: 1. Cockroaches 2. Ants 3. Mice

The IPM program:

The IPM program was initiated by WHITCO pest control 5-6 years ago. Logbooks were prepared and placed in the cafeteria of each school. A liaison or contact person (usually an Assistant principal) was appointed by each school to coordinate communication between the pest control company and the school community. WHITCO prepared the IPM contract. The contract requires a PMP to service the cafeteria and maintenance areas of each school 1/month. Classrooms are serviced on a complaint basis.

Why switch to IPM? The IPM handbook from the EPA had eye opening information for Mark. It opened Mark's eyes to the advantages of IPM over conventional pest control. It made business sense; a PMP does not have to treat all areas of the school on each service visit. It is more effective than traditional pest control. Since he started using exclusion, monitoring and baits, German cockroach problems have diminished. IPM takes less time than traditional pest control since treatments if needed are more targeted.

Cost:

\$133/School/Month + Emergencies

Challenges:

At the inception of IPM there was resistance from the school maintenance department. Because there wasn't as much spraying as before, they assumed that pests were not being controlled, and WHITCO was being paid for doing nothing. He lost that contract but the company that replaced WHITCO was not effective, so WHITCO was recalled. There is still resistance to implementing maintenance and repair recommendations because pest control is not a priority at this time. Second, the turnover of contact people in the schools is very high so Mark has to keep training them as they come. Third, some principals do not understand IPM and therefore they have not established policies for keeping schools free of conditions that are conducive to pests.

NASH-ROCKY MOUNT SCHOOLS

IPM Coordinator: Dennis Fields

Number of schools: 29

Important pests: Ants, cockroaches and mice,

The IPM program: Pest control is contracted to Morgan's pest control company.

Inception: When the maintenance director Mr. Jim Reuter attended an IPM workshop at a conference and learned about the hazards of pesticides and the fact that pesticide applications should not be made on a schedule, he mused at the observation that every month, a pest control contractor comes and sprays his office, many times when he is present, yet he had never seen any pest in the place! Knowing the facts changed his perspective on pest control. He contacted the School IPM program of NCSU and enquired on how to get started with an IPM program. He adapted an IPM type pest control contract and selected a company that knows how to use the IPM approach.

Education:

IPM training workshops have been conducted for custodians and cafeteria managers. The pest control technicians have also received IPM training. In addition, IPM brochures (from the School IPM program at NCSU) were acquired and distributed to teachers, cafeteria managers and staff, to reinforce the IPM message and garner support for the IPM program.

Comments:

Nash-Rocky Mount Schools implemented an Integrated Pest Management (IPM) program in 2003. Since then, we have received fewer pest complaints and the number of pest control work orders has declined. And because we do not apply pesticides routinely, we have also minimized the exposure of children to pesticides without compromising their protection from pests that can transmit disease and disrupt class time. I recommend IPM to any school district without reservation.

PITT COUNTY SCHOOLS

IPM Coordinator: Mr. Douglas Price Jr.

Number of Schools: 35

Important Pests: Ants, Fire ants, Cockroaches, Mice

IPM Program:

They switched to IPM after a Pest management operator sprayed classrooms with pesticide that ended up affecting a number of children. The children had chemical sensitivity. Their mom activated other parents who eventually forced the school district to shift to IPM.

The Pitt county schools IPM program uses a combination of in-house technicians for indoor and outdoor pest control and a contractor when needed. Every school is responsible for conducting their own pest control. The central facilities office provides opportunities for custodians and cafeteria managers to learn about pest prevention and control, and supplies any necessary pest control products. Each school has certified pesticide applicators trained in IPM.

Education:

Because of proximity to the School IPM program of NCSU, maintenance personnel and cafeteria managers at Pitt County schools have attended training workshops on IPM. Doug also makes presentations on IPM at cafeteria managers' professional development workshops every semester to educate them about pest prevention.

Challenges:

The first year was very challenging in creating awareness of health issues related with pests and pesticides, and the training necessary for the implementation of the IPM program.

Comments:

At Pitt County Schools, we feel that IPM is beneficial in creating a healthier environment for students and personnel. As you know, the key to a successful IPM program implementation is the ability to learn and apply what you've learned to others. In addition, training should include staff and even parents on the importance of limiting pesticide use by incorporating long-term prevention steps.

WAKE COUNTY PUBLIC SCHOOLS SYSTEM

IPM contact person: Buddy McCarty

Number of Schools: 135 (+ added every year).

Important pests: Ants, Roaches, Mice, Spiders, Pantry pests, Mosquitoes, stinging insects, snakes, poisonous spiders.

IPM Program:

Buddy came to Wake County Schools after working with Orkin Pest Control for more than 30 years. Every school had a fogging machine. Maintenance personnel routinely fogged and used pesticides unnecessarily. Buddy got rid of all the foggers and started preventative pest control. Pest control training was instituted and the schools divided by geographical location with employees assigned to each location. This helped to focus their attention on fewer sites for longer durations, increased the amount of time and effort for conducting inspections and preventative maintenance, and decreased the amount of fogging and spraying. Pesticides when needed were applied as baits, or in cracks and crevices rather than space spraying.

In WCPSS IPM program, logbooks are placed in the main office and cafeteria of every school. Pest control requests are made through a computerized work-order system. When a work-order is received, pest control employees attend to the pest problems and report the actions taken or recommendations given to the school. If a chemical was applied, the type, amount, and location of application are recorded. This information is stored so that Buddy can inform them of any needed pest control related repairs/maintenance work in real time. Preventative maintenance is scheduled 1 visit/school/month. Emergencies are handled as they arise.

Education:

Buddy works closely with other departments to solve pest problems:

- He gives insights on building pest-proof schools to committees and discussion groups for designing new schools. He recommends the use of canopies that are bird proof; building concrete slabs for dumpsters away from the external exits of kitchens, and building ramps/lifts for easy transit of garbage to dumpsters
- He teaches landscapers to avoid growing trees and shrubs too close to the walls or trees from having limbs leaning on roofs.
- Talks to child nutrition directors about IPM and the role of kitchen staff in IPM. For example he recommends that before soft drink companies deliver drink dispensers to school, the machine should be steam cleaned to kill any cockroaches that may be hiding in them. In addition, the areas under and around vending machines and snack machines need to be cleaned of trash and debris.

So he proposes the placement of vending machines on casters or rig a chain to attach to the wall so that the machines cannot be drawn away by students.

Challenges:

School employees were so accustomed to pest control by spraying a school down. When inspections increased and spraying reduced, they did not think any pest control was being done. Education helped surmount that barrier.

Cost: Not available

Comments:

To Buddy, IPM is the best idea in pest control yet. It requires simple inspections, solving the current pest problems and continuing with preventative maintenance to avoid recurrence of the pest problems. Chemicals may be used to knock pest populations down but not to keep them down. Savings with IPM: IPM saves time, gas, money and headaches.

WINSTON SALEM-FORSYTH COUNTY SCHOOLS

IPM Contact Person: Mr. Steve Cutright

Number of schools: 74

Important Pests: Roaches, bees, cicadas, carpenter bees, termites, bats.

IPM program:

WSFCS operates an In-house pest control program for both indoor and outdoor pests. The indoor pest management program has a staff of 2 certified pest control technicians. A contractor is retained for termite and vertebrate pest control, although the in-house staff occasionally does spot treatments for termites.

They started IPM when a new technician was hired. This technician had worked for a pest control company that used IPM. When he got to WSFCS he enquired if they used IPM. When he found out that they were still applying pesticides on a schedule, he introduced Steve to IPM and they have converted to IPM ever since.

Technicians schedule school site visits 1/school/month and respond to pest control emergencies as needed. Work orders come into the maintenance department electronically. The administrative assistant then prints them out and delivers them to Steve who then assigns them to the technicians. His crew goes to schools from 1:30-4:00 pm every day. After responding to a pest problem they document what action has been taken and return the work order to Steve. The pair pest control technicians travel together so that if there is any heavy lifting, they complement each other.

They use baits for 80% of the pest problems; they rarely need to spray, but when they do, they conduct targeted applications. Each year, they conduct a school district wide facilities audit to guide their preventative maintenance efforts.

Education:

Steve is a great PR person. He works across departments with principals, child nutrition staff to promote IPM.

They obtain information on the latest pest control techniques from attending the Annual Conference of the North Carolina Pest Control Association (NCPA), from the Cooperative extension office down the road, from the county health department and trade journals.

Challenges:

Every 3 years, the school board tries to out-source the pest control and grounds operations that Steve runs. When he compiles the cost, they realize that he does so much at half or a third the cost of contractors. They are surprised at how he manages to do so much with so little resource.

Floor drains present the worst pest problems. In classrooms, areas with carpet are usually problematic. They are selling the idea of getting rid of carpet in most areas, replacing them with easy to clean vinyl or wood. Some educators resist the idea. Classrooms with stuffed animals are also a common pest problems area. They are also moving away from sand to wood mulch.

Comments:

The principals and school community are very satisfied with the results of the IPM program. There is more communication between maintenance personnel and schools which they like. They see the technicians solving their pest problems and they like that too. Besides, it is safe for the kids.