



10 Years and Counting

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Pest management in schools has been a focus in the industry and among state and federal officials for at least a decade and at times has become a heated debate. Balancing the threats of pest exposure to children with potential exposure to pesticides is the challenge for pest management staff and school administrators. Integrated Pest Management (IPM) was introduced to schools in the 1990s to help solve some of the issues, and the concept has been widely adopted across the United States whether through voluntary programs or through legislation mandating adoption. Most everyone — including industry leaders, university specialists, school administrators, regulators and activist groups — agrees that some form of IPM makes sense. However, there has been little quantitative data to support the concept. Here we present some of the first data to help validate implementation of IPM in schools.

BIGCHANGES. During the 1996-97 school year, IPM was implemented at the P.K. Yonge Developmental Research School in Gainesville, Fla. This campus contains 26 buildings covering grades K-12 with about 1,200 students and 120 staff. The school's pest management staff, led by Ken Glover, made the transition from calendar-based treatments (routine monthly or quarterly) to a program that focused more on inspections and monitoring. The staff also made more targeted applications of pesticides,

shifting from broad applications of liquid formulations to judicious applications of liquid formulations and strategically placed gel and containerized baits.

In addition, Glover changed the types of pesticides his staff was using. (See chart 1 on page 70.) Aside from the organophosphates used to treat the mole crickets in 1999, there was a decrease in organophosphate and carbamate usage from about 800 grams in 1993 to 0 grams in 2005. Prior to 1997, organophosphates and car-

bamates were used heavily and supplemented with little pyrethroid, IGRs and inorganic products. Over the last decade, organophosphates and carbamates, phased out by the EPA and voluntarily by the school's PMPs, were replaced with newer formulations from a variety of chemical classes and modes of action. The replacements were pyrethroids, inorganic compounds and bait-formulated hydramethylnon and fipronil. The school's pest management professionals also took advantage of new technologies as they became available (i.e., the latest chemistry was indoxacarb, which was first introduced as the active ingredient in DuPont Professional Products' Advion fire ant bait and recognized by the U.S. EPA in its Reduced Risk Program for fire ant control). Now, many bait products are

The P.K. Yonge School in Gainesville, Fla.



available containing indoxacarb and have been widely adopted by the school's pest management professionals as a result of the minimal first aid requirements and favorable environmental profile.

Along with changes made by Glover's staff, the school's employees were all trained on IPM and their role, such as proper pest reporting, importance of follow through regarding maintenance requests and the critical nature of sanitation.

FEWER COMPLAINTS. The changes to their inspection, monitoring and treatment methodologies, as well as the use of improved pesticide technologies, led to a considerable reduction in the number of pest complaints. Overall, pest complaints trended downward upon implementation of IPM. (See chart 2 on page 72.) The number of pest complaints averaged 56 per year prior to implementation and 44 per year since the IPM program has been in place. Complaints decreased by nearly 36

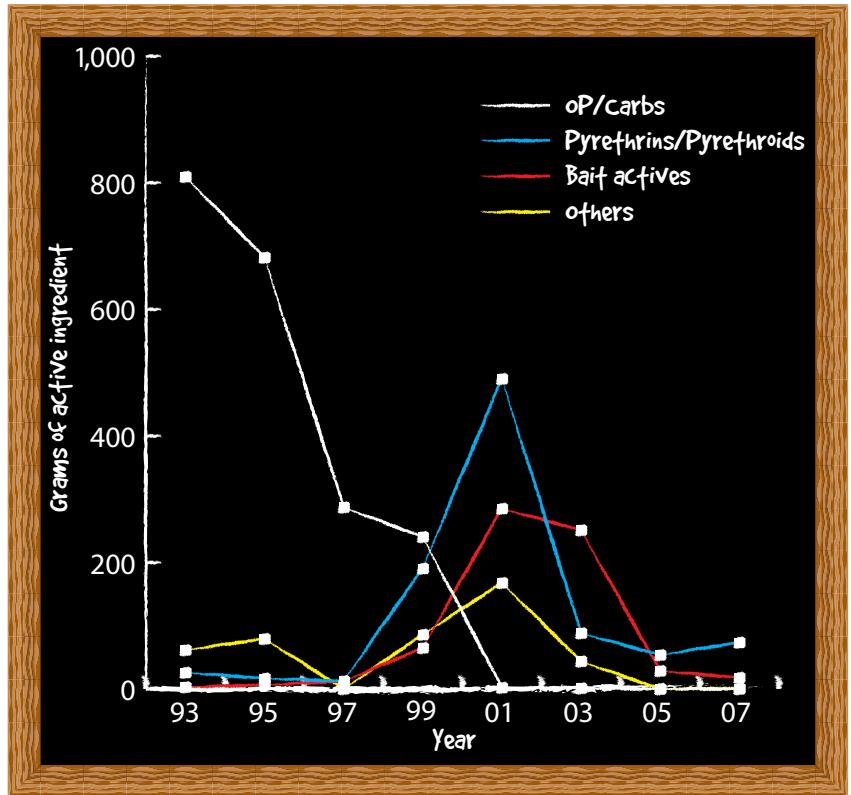


Chart 1. Types of pesticides used.

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percent for ants and 80 percent for cockroaches. Complaints for vertebrate pests (primarily rodents and raccoons) and stinging insects remained consistent, but mosquitoes and spiders did, however, increase over the 10-year period. The spider presence may be attributed to reduction in broadcast applications of pesticides. Mosquito control tends to be handled by local government authorities, so the pest management professionals have limited ability to impact mosquito presence.

The use of IPM practices also led to a decrease in the total amount of active ingredient used. The school's PMPs used almost 900 grams of AI to treat the school in 1993. That number steadily decreased as IPM was implemented, and in 2007, only 92 grams of AI was used.

There were large mole cricket outbreaks on the school's sports fields in 1999 and 2001 that required immediate attention. In 2001, the school's PMPs also embraced a new termite barrier treatment to prevent

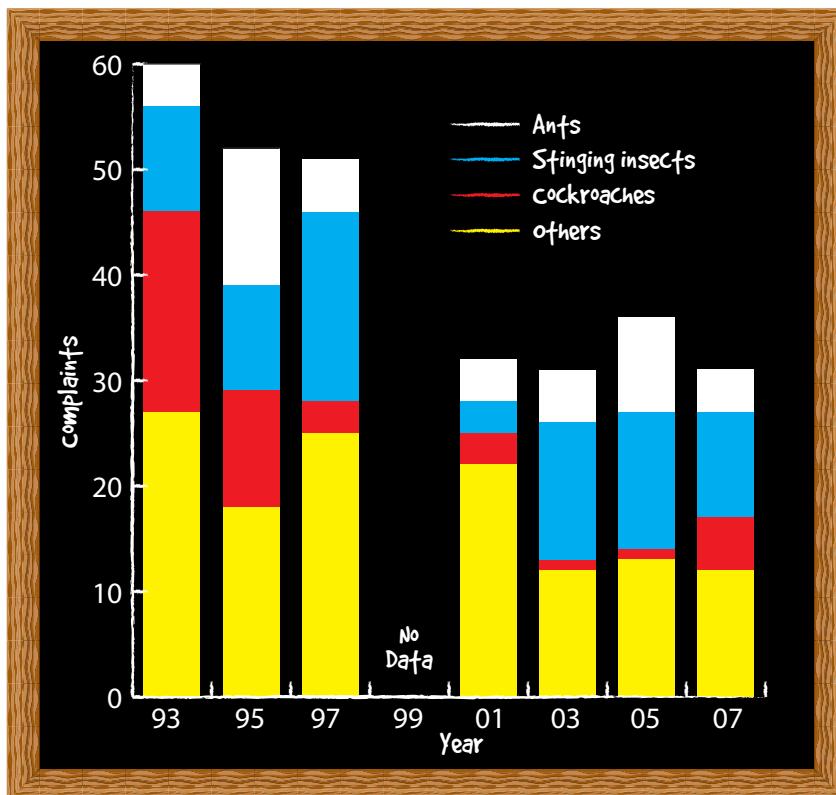


Chart 2. Total pest complaints.

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/// SCHOOL IPM

The University of Florida's Ken Glover applies DuPont Advion cockroach gel (left) and broadcasts DuPont Advion fire ant bait (right).



termite infestations. Both situations led to an increase of the total AI used for those years above pre-1997 numbers.

A total of 3,300 grams and 1,050 grams of AI were used in 1999 and 2001 respectively. At first glance these data may ap-

pear as evidence of failure or a treatment not consistent with IPM as the amount of insecticide used increased substantially. However, IPM is a process and the program needs to be flexible to allow for proper treatment during unusual circumstances. In these cases, the PMPs quickly considered a variety of treatments and selected the options that would most rapidly address the situation.

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CLOSING THOUGHTS. The transition to an IPM approach was a success at the P.K. Yonge school. Since 1996, the program's emphasis is not on routine, calendar-based spraying programs, but on inspections, communication with school staff, and the use of lower-risk options when treatments are necessary. This has led to an adoption of new technologies, a reduction in pest complaints and a reduction in the quantity of insecticides applied at the school.

As more school administrations and state governments require school IPM programs, PMPs should use this opportunity to embrace inspection and monitoring methodology as well as improved product technologies. Additionally, this is an opportunity for PMPs to demonstrate their expertise in pest management practices and help educate contract coordinators and purchasing agents at these institutions about the benefits of IPM. The current case study provides evidence that IPM can work effectively and can be sustainable over the long term. We encourage pest management professionals and other readers to use this case study to aid in adopting IPM in as many of their programs as possible. **PCT**

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