

NC STATE UNIVERSITY

**Pest Control Practices in North Carolina Public Schools:
Changes between 2002 and 2006**

A report compiled by

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October, 2006

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AGRICULTURE & LIFE SCIENCES
ACADEMICS ▲ RESEARCH ▲ EXTENSION

Executive Summary

This report presents the results of a survey conducted to discover the changes that pest management professionals (PMPs) have instituted in their practices after participating in educational and outreach programs on Integrated Pest Management (IPM) conducted by the School IPM Program of North Carolina State University. From 2002 to 2006, 372 PMPs from up to 50 pest control companies were trained in IPM techniques in 50 workshops (consisting of lectures, facility walks-through and demonstrations) at various locations in North Carolina.

Pest Management Professionals (PMPs) have changed their pesticide use patterns to increase effectiveness and safety as a result of attending the IPM education and outreach programs. When the 2002 and 2006 surveys are compared, a majority of PMPs currently incorporate important IPM procedures into their pest control operations. In both 2002 and 2006, PMPs considered ants, cockroaches, rats and mice, respectively as serious pests in schools. Similarly, PMPs and their companies' standard operating procedures continue to determine whether or not to use pesticides and how frequently they are applied to control pests in schools. However, the numbers of pest control companies that apply pesticides on a regular schedule, and on school days declined by 5% and 15% respectively. In addition, the percentage of PMPs that primarily use pesticides to control ants, bees & wasps, cockroaches, and termites declined by 11%, 33%, 35%, and 10% respectively. And there was an increase in use of reduced risk formulations e.g. baits; and application methods e.g. crack & crevice treatments, and a reduction in broadcast and wide area pesticide applications e.g. space sprays.

Sixty-two percent of the companies defined IPM correctly but very few companies implement their own definition of IPM. Although IPM is not wholly practiced, a majority of companies incorporate important IPM procedures (e.g. pest identification, inspections, record keeping, notification, training, recommending non-chemical measures etc.) into their pest control operations. When the 2002 and 2006 surveys are compared, there was a 7% increase in the number of PMPs that reported use of IPM and 11% more companies thought IPM was very effective in solving pest problems in schools.

There is evidence of change in pest management practices in schools as a result of the educational program and other influences within the pest control industry. PMPs have changed their pesticide use patterns and incorporated IPM procedures in their pest control operations to increase safety to school occupants and the effectiveness of pest control operations. However they are lacking when frequency of pesticide use is considered. Continued education and outreach is needed to consolidate, establish and continue the change process.

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Introduction

Pest management in public schools continues to be an issue of nationwide concern to parents, school occupants, governments (local, state, and federal) and environmental groups. Research indicates that children are especially at risk to pests and pesticides. Children's bodies, behaviors, and size make them both different from and more vulnerable than adults to pesticides (NRC 1993). From conception through adolescence, they are in a dynamic, often sensitive state of growth as their immature nervous, respiratory, reproductive, and immune systems develop. In North Carolina, the State Legislature passed "The School Children's Health Act" in 2006 to safeguard the health of children and school occupants. This bill requires school districts to notify parents, guardians, and school staff about pesticide use on school property as of October, 2006, and to implement Integrated Pest Management (IPM) programs by 2011.

Integrated Pest Management (IPM) is a proven approach that can effectively control pests and minimize the risk of pesticide exposure to school occupants. IPM is a comprehensive pest management approach that combines multiple control methods, e.g., biological, physical, mechanical, cultural, and chemical tactics that are effective, economical, environmentally sound, and socially acceptable in a comprehensive plan to prevent and solve pest problems. IPM emphasizes the use of non-chemical control methods, but reduced-risk pesticides and/or formulations can be applied when necessary. Other components of IPM include routine inspections, regular monitoring, and pest identification, identifying conditions that contribute to pest problems, record-keeping (to track problems and prevent recurrence) and evaluation of pest management actions.

Pest control companies play a critical role in pest control operations of schools in North Carolina (Lilley, 1999). A survey of facilities managers of North Carolina public schools revealed that licensed pest control companies have contracts to perform some level of pest control in 96 percent of the school districts that were surveyed (Lilley, 1999). The importance of pest management professionals (PMPs) in school pest management programs was evident in a 2002 survey of PMPs that have school contracts (Nalyanya et al 2002). Data from the later survey led to the conclusion that PMPs are vital in the decision-making process for pest control in schools. They decide whether or not to use pesticides to resolve pest problems in schools. Although 89% of the responding pest control companies claimed to use IPM in their school accounts, they still applied pesticides routinely, whether needed or not. One recommendation from this survey was to target PMPs with an effective IPM educational program to reduce frequency of pesticide use and increase adoption of IPM techniques, procedures, and practices. We developed an educational program consisting of training workshops that provided information on the concept of IPM and

how to implement it in a school environment, accompanied with practical information through demonstrations and facility walk-through. A training manual, brochures, and a Web-site were developed and made available to PMPs. The goal of our latest survey in 2006 was to determine the effectiveness of the educational effort in changing the pest management practices, and adopting IPM practices by PMPs in North Carolina. The expectation was that the program had helped PMPs adopt IPM practices and had reduced pesticide use in schools.

Objectives

1. To identify changes in the important pests and the pest control practices in schools between 2004 and 2006.
2. (a.) To find out how PMPs define IPM and assess their attitudes toward IPM.
(b.) To investigate the extent to which IPM has been adopted by PMPs.
(c.) To discover the constraints to adoption or implementation of IPM in schools.

Methodology

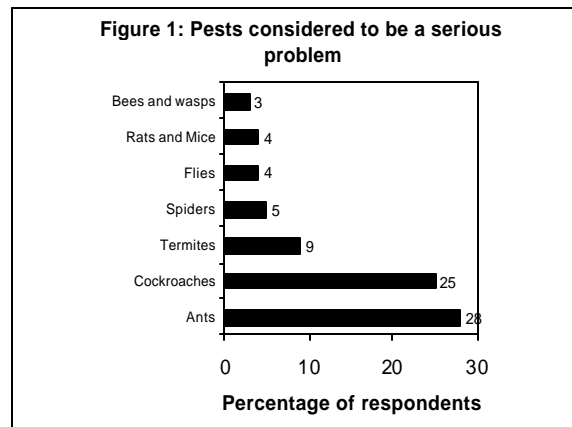
The school district maintenance departments and county school board offices were contacted to identify pest control companies that contract with public schools in North Carolina. One hundred and two companies or company branches were enlisted for this survey.

The survey instrument was the same as the 2002 survey with minor alterations. We included spot treatments in the choices for Question 4, which intended to find out the pesticide application methods, and we added Question 29 to find out if the pest control companies offer similar services to more than one school district. A pretest was done to correct any flaws in the questionnaire. Thereafter, telephone interviews were conducted during regular work hours (8:00 a.m. to 5:00 p.m.) in October 2006 by the Center for Urban Affairs and Community Services at North Carolina State University. The respondents were company owners or managers with various levels of education: 34% had a high school or some college education, 64% had a 2-year and 4-year college education while 2% held masters level education. The response rate was 82.9% (n =123). The responses to survey questions are presented as percentages where the list of options was read to the respondents and as number of companies where the choice of probable responses was not read (Appendix I).

Results

Pests and Pest control practices

Serious Pests: The pests considered to be a serious problem in public schools of North Carolina are ants, cockroaches, termites, spiders, flies, and rats and mice, respectively in the order of importance (Fig. 1). A majority of responding companies (57.5 %) are required to control pests in all areas of the school buildings including cafeterias (16 companies), bathrooms (12 companies), administrative offices (10 companies) and classrooms (6 companies).



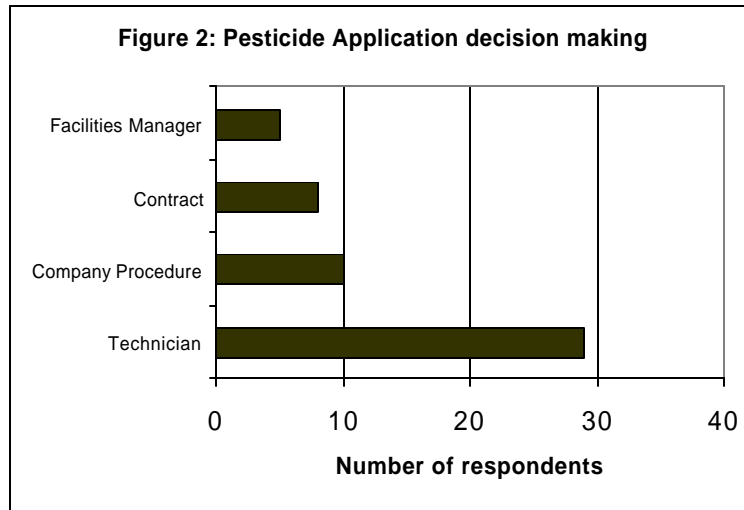
Current pest control methods: Pests are controlled predominantly by using pesticides. Ants are controlled using pesticides by 82.76% of the respondents who consider ants to be a serious problem. One hundred percent of the companies that consider termites and ticks a serious problem use pesticides for control. Between 50% and 75% of companies that consider pantry pests, bees and wasps, spiders, and rats and mice serious problems also use labeled pesticides. The pesticide application methods that were used most of the time include baiting (70%), crack & crevice treatments (50%), baseboard sprays (12.50%), dusts (5%) and space sprays (5%) respectively. Trapping was used mainly to control spiders (100 %), flies (100 %) and rats and mice (57.14%). In addition, more than 80% of the companies recommend structural repairs, screening, sanitation and proper food storage to improve the effectiveness of pest control efforts.

Decision-making for Pest Control

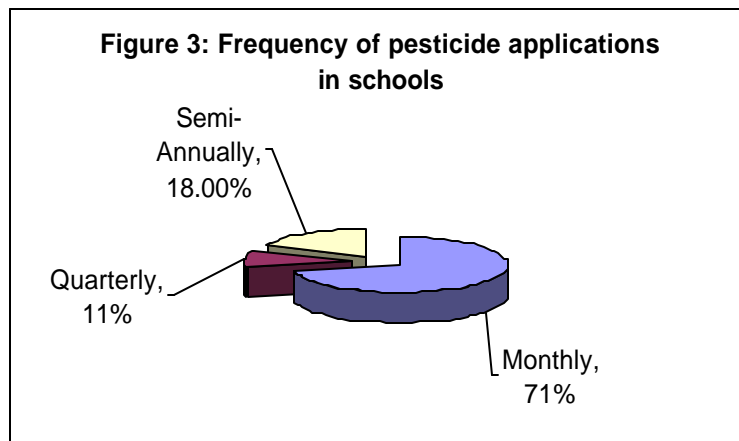
Pesticide application procedures: This survey shows that PMPs or pest control technicians (29 companies) and their companies' standard operating procedures (10 companies) determine whether or not to use pesticides in schools. The recommendations of facilities managers and contract requirements play a lesser role in deciding whether or not to use a pesticide (Fig. 2). But once a decision to apply pesticides in the school is reached, 97.5% of the companies base their

selection of pesticide product on safety to children, 72.5% on effectiveness and 95% on formulation. Contract requirements (67.5%), ease of application (42.5%) and price (22.5%) are less important criteria in the selection process.

Seventy percent of the respondents who consider some pests a serious problem apply pesticides on a regular schedule. Of the respondents who apply pesticides on a schedule, 71% of the companies apply pesticides monthly, 10.71% apply quarterly and 17.86% apply semi-annually (Fig. 3).



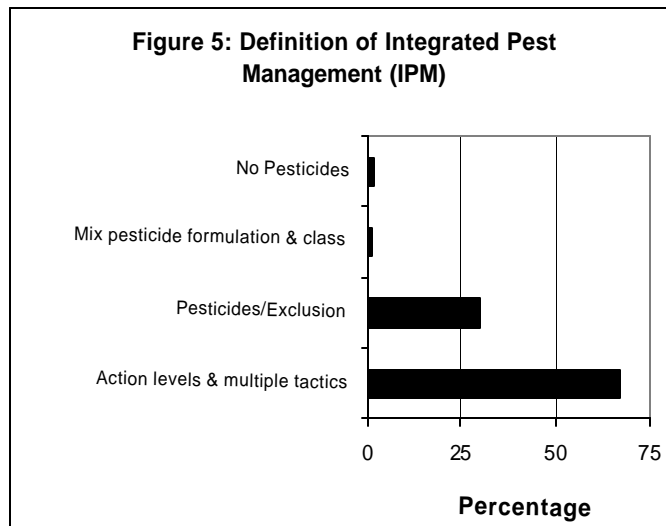
In order to safeguard the health of school occupants, pesticides, especially sprays, should not be applied in occupied structures. Sixty percent of the respondents apply pesticides on school days; however, of the companies that apply pesticides on school days, 91.67 % treat after school hours



when school buildings are unoccupied. Eight percent of the respondents treat school buildings at anytime regardless of whether the buildings are occupied.

Integrated Pest Management (IPM) definition and Use

IPM definition: Sixty-seven percent (67%) of the respondents defined IPM as the practice of controlling pests based on action levels and using a combination of pest control tactics. Thirty percent defined IPM as the combination of pesticides (including baits) and pest exclusion measures to solve pest problems, 1% described IPM as mixing or rotation of pesticide formulations and classes, while 1% of the respondents thought IPM was pest management with absolutely no use of pesticides (Fig. 5).



IPM use: Ninety-one percent of the respondents claimed to use IPM in schools. IPM was said to be very effective in solving pest problems by 80% of the companies that presumably use IPM but only somewhat effective to 19% of the companies; no company reported that IPM was ineffective. According to 69 respondents, the main reason for adopting IPM in the schools was child safety, while 54 companies adopted IPM because it is very effective. Of the 10 companies that do not use IPM in the schools, 6 said that there was no demand for IPM, 1 that IPM was too costly for schools, and 1 that current methods are effective (because baits are effective and available).

Twenty-three percent of the companies that correctly defined IPM also reported that they use IPM in the schools they service; however, they also apply pesticides on a calendar schedule. Only 11% of the respondents that reported using IPM defined IPM correctly and do not use pesticides on a calendar schedule. This shows that PMPs do not practice IPM but use IPM type practices in their operations e.g. recordkeeping, notification, regular training, inspection and monitoring, pest ID, sanitation, and structural modifications.

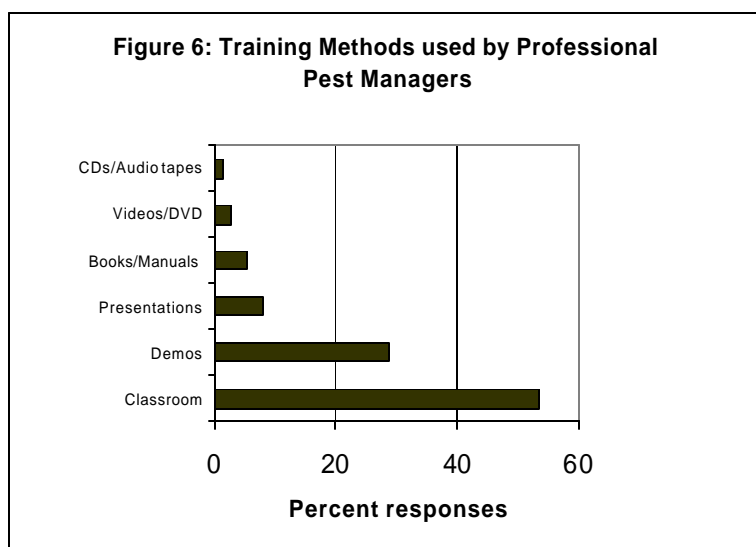
Notification and Record-keeping

Notification: When this survey was being conducted, the notification clause of The North Carolina School Children's Health Act was just taking effect (October, 1st, 2006) therefore the responses to this question were not affected by this law. However, 85% of the respondents provide notice before or after applying pesticide. They notify the school principal/assistant principal (24 companies) or the maintenance supervisor (20 companies) before or after pesticide application. Why do they choose to provide notice of pesticide application? Sixty five percent of the respondents provide notice to safeguard the health of children, 12% to reduce the liability to the company and 18% because they are required by county regulations.

Record keeping: Most companies maintain various kinds of records of pest control activities in schools. Ninety-nine percent of the respondents maintain records of pesticide applications because the structural pest control law of North Carolina requires them. In addition, they maintain records of regular inspections (83%), monitoring (76%), pest sightings (72%), and recommendations for sanitation improvements and structural repairs (69%).

Training and pest control information sources

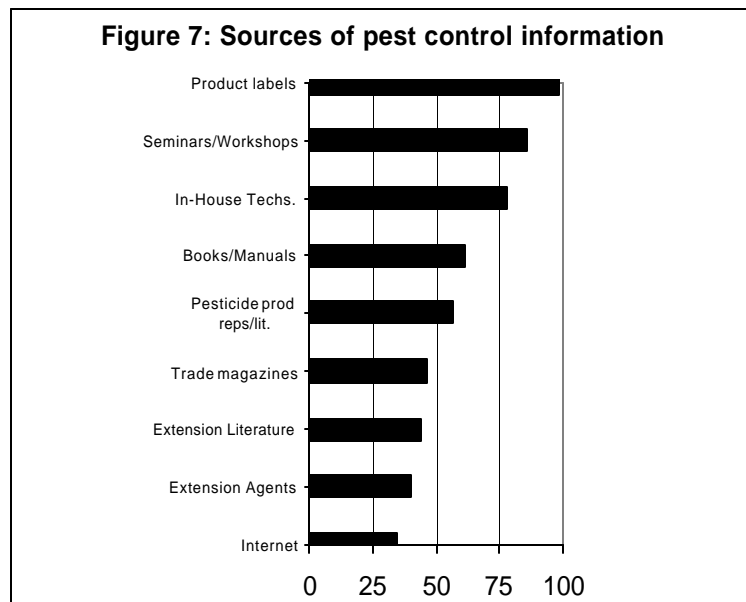
Training schedule and preferred methods: The employees/employers of pest control companies are trained in pest management monthly by 43% of the respondents, weekly by 21%, quarterly by 16%, bi-monthly by 8%, semi-annually and annually by 13% of the respondents collectively.



Classroom type teaching (41%) and hands-on demonstrations (23%) are the preferred methods of training (Fig. 6). More than 95% of the respondents highly emphasized training in pest

identification (98%), inspection and monitoring (98%), and regulations and liability (95%). Ninety percent of the respondents highly emphasize record-keeping while 80-86% emphasized chemical control methods, tools and equipment, building and construction, and IPM; 76% emphasize non-chemical control, while 52% emphasize sales and marketing, respectively.

Sources of pest control information: The three most important sources of pest control information to PMPs are pesticide product labels (98%), seminars/workshops (85%), and in-house technicians (77%). The three least important are trade journals (46%), extension literature (44%), extension agents (40%) and the internet (28%). Books and manuals (60.78%) and product representatives and literature (56.86%) are of moderate importance (Fig. 7).



Discussion and Conclusions

Pest Management Professionals (PMPs) changed various aspects of their pest control practices and left some unchanged even after participating in IPM training programs. First, there was no difference in the order of importance of the pests between the 2002 and 2006 surveys (ants, cockroaches, termites, spiders, flies, rats and mice, respectively in order of importance). Second, PMPs are still very important in the decision-making process for pest control and are relied upon by school administrators to control pests in schools. Pest control companies and their technicians decide the pest control methods to use, whether to apply pesticides, and how frequently to apply pesticides in school buildings. Pest control companies rely on their standard operating procedures

and technicians' evaluations of pest situations to determine whether to use pesticides in the schools. According to this survey, contract requirements do not significantly affect the frequency of pesticide applications in schools, neither do contracts appear to determine whether pesticides will be used, but contracts determine the choice of pesticides to apply. Third, although PMPs supposedly use IPM in schools, they also apply pesticides on a predetermined schedule, contrary to the principles of IPM.

There were numerous notable changes in pesticide application patterns and pest control in general when the 2002 and 2006 survey results were compared; for example :

1. There was a slight change in the proportion of PMPs who considered certain pests a serious problem. Those who considered cockroaches a serious problem increased by 3%, pantry pests increased by 2%, spiders by 3% and ticks by 1%. Ants (20%), termites and wasps, and rats and mice (by 7%) each declined in seriousness as pests.
2. The proportion of PMPs that primarily use pesticides to control ants, bees & wasps, cockroaches, and termites declined by 11%, 33%, 35%, and 10% respectively; while the PMPs who primarily use pesticides to control rats & mice increased by 46%.
3. The proportion of PMPs who apply pesticides on a predetermined schedule declined by 5% (75% to 70%).
4. The proportion of companies that apply pesticides on school days declined by 25% (85% to 60%).
5. Of the companies that apply pesticides on school days, the ones that apply after school hours increased by 7% from 91% to 98% (2002 to 2006).
6. The percentage of companies that defined IPM correctly, as the use of action thresholds and multiple methods of control increased by 5% (62% to 67%).
7. The percentage of companies that reportedly use IPM in school accounts increased by 7% (84% to 91%).
8. PMPs have a positive attitude towards IPM in schools. The proportion of PMPs who think IPM is very effective increased from 69% to 81%
9. There was an increase in the importance of extension agents, extension publications and the internet as sources of pest management information (a 6%, 8% & 6% respectively). There was however a 21% decline in importance of books and manuals and a 6% decline in importance pest control product representatives.
10. The proportion of PMPs that recommended changes in school cultural practices (sanitation, structural repairs, screening, caulking, food storage) to enhance effectiveness of the pest management program increased by 10% (from 70% to 80%).

The survey data suggest that the training program effectively changed various aspects of the pest control practices of PMPs that contract with schools in North Carolina. The PMPs became more aware of the vulnerabilities of children and the risks of pesticide use in the school environment. And as a result they worked to increase safety of their operations in schools as exemplified by choice of pesticide formulations that have a low risk (e.g. baits) of being contacted by children; choice of pesticide application methods that target pesticides to the pest harborage (e.g. crack & crevice and spot treatments); and applying pesticides when schools are unoccupied (e.g. after school hours and on weekends). They increasingly recommend non-chemical measures to schools so that effectiveness of pest control operations is enhanced.

Many PMPs were positively disposed towards the use of IPM in schools. They reported that IPM was very effective in solving their pest problems and claimed to use IPM in their school accounts. However, they continue to apply pesticides in schools on a pre-determined schedule. Strictly speaking, only 11% of the responding PMPs that claimed to use IPM did not apply pesticides on a schedule. Although many companies do not wholly implement IPM in their school accounts, they apply important IPM procedures in their pest control operations (see previous paragraph). It is not clear why PMPs continue with the practice of applying pesticides on a predetermined schedule. Nalyanya et al. (2002) proposed several reasons for this practice including: (i) schools consider a pesticide application as evidence of a service; (ii) It is legal to apply pesticides on a schedule and schools specifically require it in the contracts; (iii) some PMPs consider pest control to be equivalent to a pesticide application; and (iv) some PMPs are skeptical about effectiveness of IPM. The reason(s) for this practice should be investigated to provide information that can be used to make future education workshops more effective.

In order to effect more changes, there is a continuous need for education to clarify the definition of IPM and to distinguish IPM from conventional pesticide-based pest control. Pest management professionals should be continuously targeted with a convincing educational program to effectively increase the adoption of IPM and to continue reducing the frequency of pesticide use in North Carolina schools.

Recommendations

Based on the findings of this survey we recommend these actions:

- Continue with the educational programs consisting of workshops/seminars and hands-on demonstrations to train PMPs in the principles and practices of IPM. The program should present information targeting important pests (ants, cockroaches, termites, bees, wasps, rats and mice, flies etc.) and all possible problem areas (e.g. cafeterias, bathrooms, classrooms, stores, etc) because more than 50% of PMPs are required to service all areas of schools.
- The data show that the importance of books and manuals as a source of pest management information is declining. The reason for the change and the most preferred method of providing information should be investigated. However, we should continue promoting manuals, books/booklets, fact sheets and other printed material with information on IPM that can be readily implemented to reduce the frequency of pesticide use in schools.
- The increase in importance of the Internet as a source of pest management information is a very positive step and as such Internet use should be promoted as a means of accessing information and downloading literature.
- Research is needed to investigate why PMPs who are familiar with IPM and report that IPM is effective in solving pest problems still schedule their pesticide applications.
- The School IPM Program of North Carolina State University has emerged as a reliable source of pest management information and it is important to market and promote use of our extension literature and personnel.

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Appendix I: Tabulation of survey results

1. Which of the following pests do you consider to be a serious problem, somewhat a problem or not a problem in the schools that you are serving this year (N = 102)?

Pest	Serious (number/102)	Somewhat	Not a problem
Ants	28.43 (29.0)	61.76	9.80
Cockroaches	25.49 (26.0)	59.8	14.71
Termites	8.82 (9.0)	38.24	52.94
Bees & wasps	2.94 (3.0)	46.08	50.98
Pantry pests	1.96 (2.0)	26.47	71.57
Flies	3.98 (4.0)	37.25	58.82
Ticks	0.98 (1.0)	10.78	88.24
Spiders	4.90 (5.0)	53.92	41.18
Rats & mice	3.92 (4.0)	71.57	24.51
Pigeons & birds	0	24.51	75.49
Other (Paper Mites, Bats Snakes, Millipedes)	0 87.5	12.50	

2. If a serious problem, what primary method does your company use to control the pest? (Percentage of companies that use vacuuming, trapping, caulking, heating, screening, or pesticides).

Pest	Pesticides	Caulking	Trapping	Vacuuuming
Cockroaches	65.38	0	34.62	
Ants	82.76	0	17.24	
Termites	100.00	0		
Bees & Wasps	66.67			33.33
Pantry pests	50.00		50.00	
Flies	50.00		50.00	
Ticks	100.0			
Spiders	75.0		0	25.00
Rats & Mice	75.0		25.0	
Other pests:				
Bats	2			
Snakes	13			
Fire ants	1			
Fleas	2			
Crickets	1			

3. With so many options available for solving pest problems, how do you decide whether or not to use a pesticide at a school site?

	Number of companies
Contract requirement	8
Company standard procedure	10
Technician evaluates need	29
Facilities manager recommendation	5

4. How often do you use the following pesticide application methods in school buildings (N=40)?

	Most of the time	Some of the time	Never
Baits	70.00	30.00	0
Baseboard/surface sprays	12.50	52.50	35.0
Spot treatments	27.5	65.0	7.5
Crack/crevice treatments	50.0	42.5	7.5
Space sprays	5.0	37.5	37.5
Dusts	5.0	35.0	60.0
Tracking powders	0	12.5	87.5
Other pesticide application methods			
Glue-boards	58.33	41.67	0
Call Wildlife resource comm.	44.44		
Monitoring	44.44		

5. How important are the following factors when selecting pesticides for use in school buildings (N=40)?

	Very important	Somewhat important	Not important
Effectiveness	72.5	27.5	0
Formulation	95.0	5.0	4.11
Price	22.5	50.0	27.5
Safety to children	97.5	2.5	0
Contract requirements	67.5	25.0	7.5
Ease of application	42.5	47.5	10.0

6. Does your company service all or only specific areas (N=40)?

All areas	57.50
Specific areas only	42.50

7. What specific areas do you service?

	No. of companies
Cafeterias	16
Science rooms	1
Computer labs	1
Bathrooms	12
Gymnasiums	3
Administration offices	1
Classrooms	6
Other areas (N=35)	
Lockers	1
Janitorial closets	1

8. Do you follow a regular schedule of pesticide application (N=40)?

Yes	70.00
No	30.00

9. How frequently are pesticides applied in school buildings (N=28)?

Monthly	71.43
Quarterly	10.71
Semi-annually	17.86

10. Do you apply pesticides on school days, weekends , or holidays (N=40)?

School days	60.0
Weekends/holidays	40.0

11. When during a school day are pesticides applied (N=24)?

Anytime during the day	4.17
Before school begins	4.17
After school hours	91.67

12. Do you provide notice to the school when pesticides will be applied (N=40)?

Yes	85.0
No	15.0

13. Do you provide notice before or after applying the pesticide (N=34)?

Before	85.29
After	11.79
Both before and after	2.94

14. Who do you notify when pesticides applications are to be made?

	Number of companies
Principal/assistant principal	24
Maintenance supervisor	20
Students, parents, school personnel	4
Other	
Cafeteria manager/food service director	0

15. What is your company's primary reason for providing notice of pesticide applications since it is not required by the law (N=34)?

Reduces liability to our company	11.76
Safeguards health of children	64.71
County requires notification	17.65
Other (Part of IPM)	5.88

16. Do you maintain records of pest control activities in schools (N=102)?

Yes	95.10
No	4.90

17. Do you maintain any of the following records (N=95)?

	Yes	No
Pest sightings	91.75	8.25
Inspection records	86.6	13.4
Monitoring records	81.44	18.56
Pesticide applications	96.91	3.39
Recomm. for repairs, etc.	87.63	12.37
Other		
Sanitation records	66.67(2)	
Notes from monthly visits	33.3(1)	

18. How do you describe IPM (N=102)?

Pesticides + pest exclusion		30.39
Mix or rotate pesticides formulations and classes		0.98
Absolutely no pesticides		1.96
Action levels and combination of tactics		66.67

19. Does your company use IPM in schools (N=102)?

Yes	91.18
No	8.82

20. How effective is IPM in solving pest problems (N=93)?

Very effective	80.65
Somewhat effective	19.35

21. Why has your company adopted IPM (Number of companies)?

Profitable	21
Child safety	69
Pesticide resistance	14
Less liability	31
Mandate by school	9
Info available	11
Effective	54
Good knowledge	31
Other reasons:	
Minimize pesticide use	1
Environmental safety	1
NCSU faculty	1

22. Why has your company not adopted IPM (N=10????)?

Too costly for schools	1
Too complicated to do	1
Time consuming	0

Current methods work OK	1
No demand for IPM	1
Lack of information	0
IPM is not effective	0
Other reasons	0

23. Which areas of training are highly emphasized in formal training (N=102)?

	Yes	No
Pest ID	98.04	1.96
Inspection and monitoring	98.04	4.11
Non-chemical control	74.51	25.49
Chemical control	81.37	18.63
Tools and equipment	81.37	5.48
Building and construction	86.27	15.07
Recordkeeping	90.20	10.96
Sales and marketing	51.96	48.04
Regulations and liability	95.10	2.74
IPM	84.31	15.69
Safety	3 (75%)	
Customer relations/comm./satisfaction	1 (25%)	

24. In what primary way do your employees receive training (N=102)?

Presentations	12.75
Hand-on demos	22.55
Videos/DVDs	0.98
CDs/audio tapes	
Books/manuals	22.55
Classroom	41.18

25. How frequently do you or your employees receive training (N=102)?

Weekly	20.59
Monthly	43.14
Bi-monthly	7.84
Quarterly	15.69
Semiannually	3.92
Annually	8.82

26. How important are the following sources of pest control information to your company (N=102)?

Information source	Important	Somewhat	Not important
Extension agents	40.2	49.02	10.78
Extension literature	44.12	36.27	19.61
Prod. Reps./lit.	56.86	38.24	4.90
Product labels	98.04	1.96	0
Trade magazines	46.08	45.10	8.82

Books/manuals	60.78	35.29	3.92
In-House technician	77.45	20.59	1.96
Internet	34.31	45.1	20.59
Seminars/workshops	85.29	12.75	1.96

27 Does the bidding process favor the lowest bidder (N=102)?

Yes	87.25
No	12.75

28. For the purposes of pest control, have you recommended any of the following (N=102)?

Recommendation	Yes	No
Structural repairs	91.18	28.77
Screening	80.39	23.29
Sanitation	96.08	6.85
Proper food storage	83.33	12.33
Caulking	92.16	
Other	3	
Exterior landscape	3	

29. How cooperative are schools in making the recommended changes (N=102)?

Very cooperative	37.25
Somewhat cooperative	59.80
Not cooperative	2.94

30. Do you provide services to any other school districts (N=102)?

Yes	55.88
No	44.12

31. Is there any difference in the procedures used among the school districts you serve?(n=57)

Yes	38.60
No	61.40

32. What is the highest level of education you have completed (N=102)?

High school	23.53
Some college	10.78
Two-year college/vocational degree	46.08
Four-year college degree	17.65
Master's degree	0.98
Ph.D.	0.98