IMPLEMENTING an IPM PROGRAM in RESEARCH LABORATORIES

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INTRODUCTION

From October 1997 through April 2000, the Occupational Safety and Health Branch located in the Division of Safety, Office of Research Services, National Institutes of Health in Bethesda, Md., initiated a pilot IPM program in research laboratories. The program was conducted to examine application of IPM methodologies under the unique challenge of minimizing disruptions to laboratory staff while protecting the research environment and controlling pests. The objectives of the study were to: identify the resident pest complex, examine monitoring procedures and factors that impede monitoring, assess the perceptions of laboratory workers regarding pest management, clarify how laboratory workers handle requests for structural repairs and sanitation, and determine the level of IPM service needed to maintain pests at acceptable levels.

MATERIALS and METHODS

Two monitoring cycles, monthly and quarterly, were evaluated during this study by a pest management technician and an entomologist. Catchmaster® sticky traps were placed in the laboratories, and occupants were interviewed regarding pest-related issues. Pest infestations were treated using insecticide bait formulations. Concurrently, staff entomologists conducted four surveys of laboratory occupants and distributed sixteen hundred questionnaires. Each questionnaire consisted of four or five close-ended questions that required either a multiple choice or a yes/no response. Questions focused on the occupant's awareness of pest infestations, their perception of the program's effectiveness, and attitudes toward pest control.

RESULTS

A total of 590 questionnaires were returned (37%) during the four surveys. Sampling size and number of respondents varied between the surveys. Monitoring (i.e., entering laboratories, placing sticky traps, collecting data, and interviewing occupants) was generally not disruptive and could be performed while the laboratories were occupied. Ninety-eight percent (n=69) responded that a pest-management inspection inside their laboratory was not disruptive. Eighty-three percent of respondents (n=191) rated the thoroughness and frequency of pest management services as either 'excellent' or 'satisfactory' (Figure 1). Awareness of the IPM program increased from 29% (n=79) to 78% (n=69) between November 1997 and February 1998, probably due to the repeated contact between pest management and laboratory personnel.

Respondents' acceptance or rejection of pesticide use was nearly evenly divided. When asked if they had a pest problem and could pesticides be used, 29% of respondents said 'yes', 33% said 'no', and 38% 'did not respond' (n=253). This division of opinion suggests a general unfamiliarity with IPM program practices (i.e., reduced pesticide use and least toxic products) and suggests a need for educating laboratory personnel on IPM practices.

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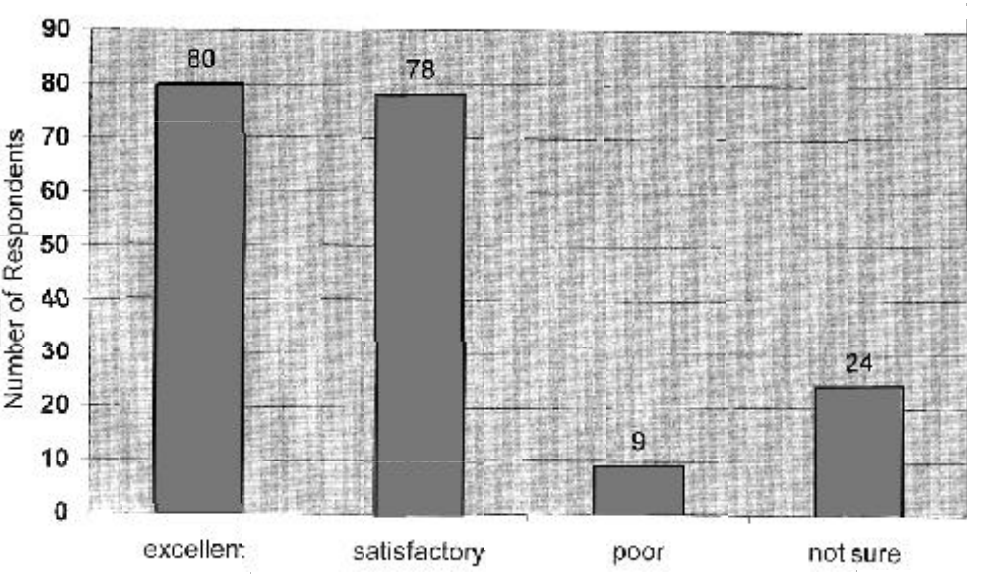

Figure 1. How would you rate the thoroughness and frequency of pest-control services that have been provided in your laboratory?

Most of the arthropods trapped in laboratories were incidental invaders (e.g., spiders and flies). German and brown-banded cockroach infestations were localized in laboratories. A reduction in cockroach numbers was achieved within six months using insecticide bait applications.

The data indicate that laboratory occupants are willing to request facility repairs. When asked how are maintenance services requested, 61% responded that 'they called them in', 21% 'reported them to the administrative office', and 18% 'didn't get involved' or 'were not sure' (n=191). However, few laboratory occupants reported sanitation deficiencies. When asked how they reported sanitation problems, 27% reported that they 'called them in', 16% 'reported them to the administrative office', and 57% responded that 'they didn't get involved' or were 'not sure' (n=187). The lack of participation in correcting sanitation issues could be due to such factors as undefined reporting procedures, short-term assignments, high turnover rate, inadequate workspace, and the perception that sanitation doesn't directly impact their work.

The quarterly monitoring scheme, supplemented with additional service requested by laboratory occupants, provided an effective level of pest management. This monitoring scheme can be used to meet future pest management needs in research laboratories. However, increased communication and staff cooperation with laboratory occupants will be required to improve resolution of sanitation issues.

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