

Household Integrated Pest Management



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Integrated pest management, or IPM, is defined as the use of a combination of pest control strategies in an environmentally, ecologically, and economically sound manner to maintain pest populations below a designated level (threshold). Control strategies used in IPM programs include physical, mechanical, and cultural techniques; biological control through natural enemies; modification of pest behavior with pheromones; and the judicious use of less toxic or selective pesticides.

Central to any IPM program is the concept of a “threshold”—that pest population level below which control actions are not implemented. In agriculture, IPM programs employ a threshold known as the “economic injury level.” When the number of pests is below that level, it may cost more to control the pest than what the part of the crop lost to pest damage is worth.

Because a house is the average person’s biggest investment, the idea of an economic injury level does not apply in the same manner to household pest management. Instead, the concept of “aesthetic injury level” is often used in household situations. Aesthetic injury level is defined as the number of insect pests below which a homeowner concludes that control measures are not necessary. A household IPM program can include many of the same types of tactics as other IPM programs. Physical and mechanical control, biological control, and pheromone traps have all been used successfully in household settings.

A well-designed household IPM program includes several components, beginning with pest identification. Actual pest control should start with nonchemical strategies, supplemented by less toxic pesticides if necessary. Regular monitoring should follow to determine the effectiveness of the program.

1. Identification. The first step in any IPM program is to correctly identify the insect. It may be that the insect made its way into the house by accident and that control measures are unnecessary. On the other hand, it may be that chemical control measures are necessary but that they should be supplemented with structural modifications to ensure long-term effectiveness.

After you have identified the pest, understanding the pest’s biology and habits will help you determine which control measures are appropriate. Many good references on insects are available through your WVU County Extension Office or your local library.

If the other steps in your IPM program are implemented correctly, pesticides should become a minor player, to be used only as a supplement.

2. Nonchemical Pest Management Strategies. Three keys to successfully implementing nonchemical household pest management are to determine the pest’s (1) entry method, (2) food, and (3) preferred climate. Once you know these three things, you can set about to reduce, eliminate, or change them, and your work toward controlling the pest will be much easier. Keep in mind that not all three will be applicable to all types of pests.

Exclusion—to restrict pest entry—includes home fix-up and repair techniques. Window and door screens, caulking of cracks and crevices, and

structural repairs will keep many insect pests out of the house.

A good way to reduce the availability of food is by sanitation or good housekeeping. Spring cleaning, regular vacuuming, and daily emptying of the trash will go a long way toward making a house less attractive to many insect pests.

A reduction in moisture and humidity through plumbing maintenance and air-conditioning or a dehumidifier will reduce the attractiveness of the indoor environment to many insects. Outdoors, trimming vegetation away from the house, using crushed stone instead of bark mulch around the foundation, and reducing or changing outdoor lighting can alter the habitat so that insects find it less inviting.

Instead of an immediate “spray and kill it” response to the presence of an insect, environmentally conscious household residents may wish to consider using an IPM program.

3. Judicious use of less toxic pesticides. If the other steps in your IPM program are implemented correctly, pesticides should become a minor player, to be used only as a supplement.

Less toxic pesticides are considered so because of several factors. Many possess lower inherent danger to human health or the environment. Some of the botanical pesticides, which come from plants, as well as such inorganic pesticides as boric acid, silica gel, and diatomaceous earth, fall into this category. Others, the

microbial or biological control agents like bacteria, fungi, and nematodes, are more specific to a particular pest. Still others, such as bait stations, are packaged for delivery in such a way as to greatly minimize human exposure.

Any pesticides used indoors should be carefully selected and properly applied. Many can be effectively used as spot treatments, applied only to a pest's entry point or harborage site, rather than to the entire house.

4. Monitoring. Regular monitoring will keep you abreast of how your pest management tactics are working and alert you to seasonal increases in pest numbers. Monitoring might be conducted weekly for a severe pest problem, followed by monthly checks as the problem diminishes. Sticky traps can be used to monitor for cockroaches. Pheromone traps are available for house flies and pantry pests like the Indian meal moth. Flea combs can be used to monitor levels of adult fleas on cats and dogs.

According to the National Home and Garden Pesticide Use Survey, conducted by EPA in 1990, 75 percent of household residents use pesticides indoors. Survey respondents stated that they often apply a pesticide to kill an insect even though the insect may not be a major problem. At the same time, many household residents dislike using chemical pesticides indoors. Household IPM seems to hold many of the answers to this predicament. Instead of an immediate “spray and kill it” response to the presence of an insect, environmentally conscious household residents may wish to consider using an IPM program.

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