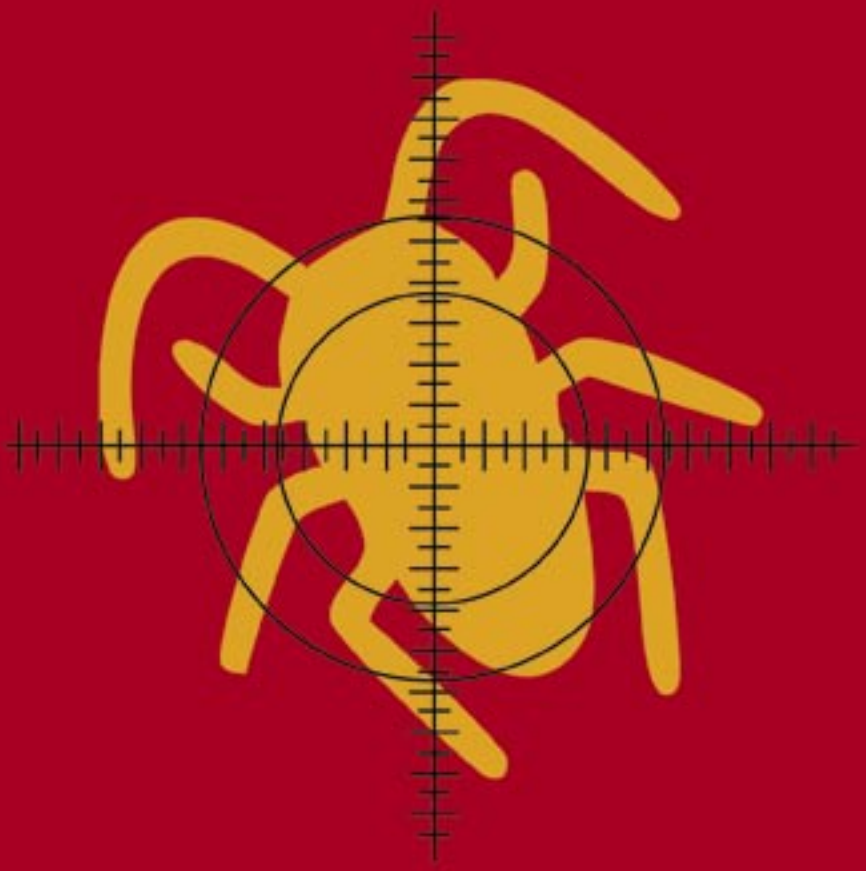

By Ted Snyder

Stick it to Them: Insect Espionage

Creating a great IPM program means using all of the equipment at your disposal — including insect monitors.

James Bond would be impressed with all the high-tech gadgets available for pest management professionals to stick into their service programs, such as thermal imaging for termites, bar-code reading PDAs, IR thermometers, text messaging two-way cell phones and pocket-sized LED UV lights. But there is one simple tool that is perhaps most often overlooked, yet increasingly important in pest management today. This tool is the insect monitor.

Part of the great appeal I find for insect monitors is that they give us an easy way to begin incorporating Integrated Pest Management into pest management programs. Instead of spending time treating with a compressed air sprayer, your time is spent putting out monitors, inspecting monitors and directing your applications to areas where pest activity is noted on your monitors. The espionage theme of ensnaring our target pests and discovering their encampment

would not be lost on Agent 007.

Using insect monitors seems deceptively simple. You peel the backing off the glue, fold them, and put them out, right? But, where specifically do you put them to get the best reading of pest activity? How do you keep them from being damaged or stolen? Answering these questions is essential to using monitors in your programs.

PERFORMANCE GLUED TO LOCATION. Location is key. Placement requires knowledge of the habits of the pest you are dealing with and often the agility or ingenuity to get the monitors in best location for that pest. There are two principles to follow to get the best results from your monitors.

The first principle for monitor placement

THE IPM EQUIPMENT BELT

The "old school" style for a PCO's equipment belt was to have a compressed air sprayer and wrench for adjusting the nut on the wand that always leaks. The "new school" style is to have an equipment belt stocked with IPM tools.

Moving into using IPM doesn't mean that you just substitute a flashlight and box of monitors for a compressed air sprayer. Having an equipment belt with everything you need to service an account is important to be able to effectively perform IPM and convey a professional, modern image.

Here are some of the essentials for an effective IPM equipment belt:

- Putty knife or other scraping tool
- Medium paint brush
- Multipurpose tool
- Large slot and Phillips screwdrivers
- Mirror
- Ant bait stations
- Ant gel bait
- Cockroach gel bait
- Keys for opening rodent bait stations
- Stickers to mark areas where monitors are hidden
- Monitors (of course!). These can also be used to capture insects to take back for identification
- A residual aerosol product
- A flushing aerosol product
- Pouches and extension for aerosols

The key to efficiently carrying this much equipment is to have the right equipment pouch. I would recommend a high-quality electrician's tool pouch, which you can get at most hardware stores. — *Ted Snyder*

is to put them out where insects travel. Many insects follow lines. Look at the room you are in and try to identify how many different lines there are to follow. Figure 1 below shows a placement of a monitor along a floor/wall juncture. Other good placements include wall/ceiling junctures and wall/wall junctures. And the best placement of all is a triple juncture of wall/wall/floor or wall/wall/ceiling.

The second principle is to place monitors in or near potential harborage areas for insects. This is where it is especially important to be familiar with the behavior of your target pest. For instance, when monitoring in a commercial kitchen for German cockroaches, some of the key harborage areas would be cracks and crevices near sources of heat, such as ovens, and areas that consistently provide food or moisture. However, if you were monitoring the same kitchen for phorid or humpback flies, key locations would be near floor cracks, drains and potential areas with long standing sanitation issues.

Figure 1. Floor/wall junctions are good locations for monitor placement.

Let's look at some examples of these two principles in action. In Figure 2 at right, a technician is monitoring for phorid flies. The monitor is sitting on the cover of a sanitary sewer, following the second principle of placing the monitor near a harborage site. There is a small flaw in the area of the monitor that can allow phorid flies to make their way out of the sewer, so the technician has used the first principle of placing a monitor along the path that the target pest travels. In Figure 3 on page 58, we see a monitor placed out for German cockroaches in a commercial kitchen. It is following the first principle by being placed along a line and by a vent that could be used by cockroaches to access the underside of the equipment. It is also following the second principle by being placed by the compressor, which is a heat source.

Figure 2. Monitoring a sewer opening for small flies.

CASE OF THE MISSING MONITOR. So, you do everything right by placing your monitors in a prime insect harborage site at the intersection of three lines. But when you come back for your next service, you pull out your flashlight and inspect the area just to find that your monitors are all missing! This is one of the greatest frustrations when using monitors. Ultimately, it is still about the two principles of placement, but with some twists.

Sanitation practices, cleanliness and storage habits are important to consider when

placing monitors. No two situations are alike, but we will cover a few more common issues to help explain some ways of keeping your monitors in place.

Damp environments tend to be the most problematic. Yet, these are the areas that many pests tend to live in, so they are ideal sites for placement. If your monitor is where it can get wet, then it will be of little to no use. Sometimes in damp environments, you can find a small area that stays mostly dry, such as behind a splash plate or underneath a motor housing. Make sure you take advantage of the glue that you generally find on the underside of most monitors to stick the monitor up and keep it from falling down where it might become damp. Also, you may be able to find dry areas by opening the equipment. When these methods don't work, the only solution may be to put monitors in drier areas adjoining the damp area, so that as pests migrate away, they will be caught in the monitors.

Often, the best location for a monitor is along the floor/wall juncture. The baseboards in this location often provide cracks and crevices for insects to harborage in, and some insects, such as ants, will follow this line

Figure 3. Monitors for pest activity inside of kitchen equipment.

once they are inside. If the client's cleaning crew always sweeps or mops this area, your monitor may be removed just hours after placement. Depending on the situation, you may be able to place the monitor behind an equipment or table leg. You may also be able to force part of the monitor into the top of the baseboard if there is a crack.

Another difficult site is food storage areas. Racking provides harborage areas, especially if it is made out of wood, and pests may also harborage inside the food products themselves. Monitors placed on the shelves often get crushed, and monitors along the baseboard area tend to be swept up. A solution that can work if the client has a drop ceiling is to flatten one edge of the monitor, lift up a ceiling tile, and place the flattened edge between the ceiling tile and the support. Another idea is to stick the monitor to the underside of the shelves, although they can be knocked down from this location if the client stacks product too high.

STICKING IT ALL TOGETHER. Perhaps if James Bond's license to kill were only in the category of structural, non-wood destroying pests, he would have put his espionage skills to use with insect monitors. Espionage is just information gathering on the enemy, which is also the first step in Integrated Pest Management.

Author's Acknowledgments: Thanks to Agent 008 (David K.) for inspiring discussions on monitor placement and Agent 009 (David M.) for examples of proper monitor placement.

The author is an urban entomologist and the training and technical services manager at Batzner Pest Management, New Berlin, Wisc. He can be reached at teds@batzner.com.