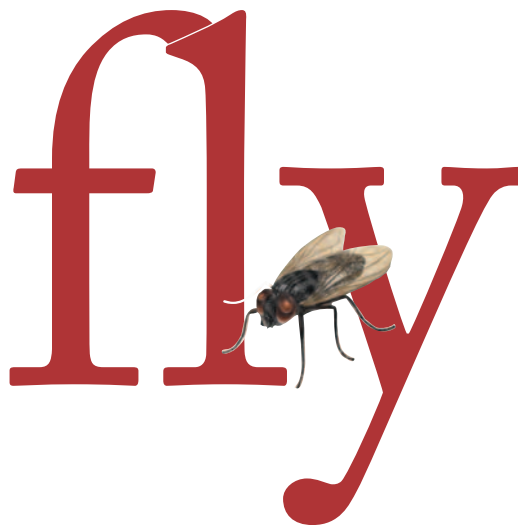


FOOD PROCESSING

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Glue boards, light traps and multi-catch traps are your first line of defense in minimizing flies and other pests in plant environments.

by Frank Meek, Special to Food Processing

The gold standard for pest control in food and beverage plants is Integrated Pest Management (IPM), an ongoing, preventive control system that reduces pesticide use through sanitation, exclusion and other techniques. IPM employs the use of several control measures: inspection, exclusion, sanitation and, when necessary, minimal use of pesticides. Pesticides are the treatment of last resort and should only be used to target particular pest species at particular locations within the plant.

Whenever pest activity is noted, devices such as glue boards, insect light traps, and multi-catch traps should form the first line of defense. Next, check for entry points that need attention. Look for breaks in caulk, sealants, screens, weather stripping and cement mortar.

Proper sanitation is critical. To avoid attracting pests, keep all food and beverage waste in closed containers. Remove waste several times each day to the proper out-

door trash receptacle. Clean the inside of waste containers daily and use trash can liners, and routinely remove trash and debris from around the building.

Light traps

Flies are a major problem in even the cleanest processing plant, since they thrive in warm, moist conditions with a ready food supply. Dual doors and air curtains can be installed to prevent flies from entering. Light also plays an important role in fly control, with exterior lighting being a primary consideration. Change direct lighting on the building to indirect lighting, away from the structure. Install high-intensity ultraviolet lights farther away from the building to draw insects away. Closer to the facility, install mercury vapor lights so they shine toward guest and employee entrances. If it is necessary to install lights on the building, sodium vapor lighting is more effective than mercury vapor in minimizing fly attraction.

While many processing plants are skeptical about spending money to replace lighting, the investment pays off handsomely in terms of overall pest management expenditures.

Along with proper sanitation, insect light traps (ILTs) can also reduce dependence on chemical control methods. However, ILTs are only a small part of the overall fly control program. In fact, these devices should be considered “flying insect monitors” rather than control devices. They do remove adult flies from circulation, but should not be the only control method. Again, sanitation is the key to reducing fly populations.

While the fly light is sometimes viewed as nothing more than a box with glue and light bulbs in it, design does have an impact on the unit’s efficacy. Units that have too much closure on the front grill may provide less light output, thereby attracting fewer flies. Units with too much open space in front may catch

clothes, fingers, cigarette butts — even trash.

Which ILT should you choose for your facility? The answer is based on several factors. The most important units are for kitchen or food processing areas. A second type is a large industrial device for large production facilities and warehouses. The third type, also known as a sconce or decorative unit, is for any public area. The fourth, an electrocution device, can be used outdoors or in non-food warehousing areas. Not all electrocution devices are certified for outdoor use, so review manufacturer specifications prior to installation.

Location and inspection

As in real estate, location is the critical factor with ILTs. Placement should be based on several factors. Competing light sources must be considered. An ILT placed in direct sunlight is not going to catch many flies. Similarly, an ILT won't be successful if it is placed where security lights compete with it. If the flies can't distinguish the ILT's ultraviolet (UV) output from other lighting, artificial or otherwise, they may not enter the traps.

The ideal place to locate an ILT is where insects are congregating. A very thorough inspection can determine the best location. Look for signs of fly rest areas, including the presence of "specs," which are fecal material. Place the ILT as close to these areas as possible. Keep in mind that there are often several such locations in a given facility. The resting areas may change throughout the day as temperature and light patterns shift.

Further, different fly species are attracted to lights located at different heights. Daytime flying insects, such

as the housefly, are caught in the so-called "strike zone"— the space from the knees to the shoulders. This range, three to six feet, is where ILTs should be placed, if day flyers are the only target. For nighttime flying insects, such as moths, ILTs should be wall-mounted eight to ten feet off the floor.

Depending on the facility, you most likely will have several species of flying insects. Be creative. You may need ILTs that are on in the daytime, and a separate set that is on at night, or at varying times of day. Your pest control technician should do a complete site survey prior to recommending and installing units.

The areas under the mounted units must also be considered. Although ILTs have a glue board in them to catch and hold insects, they should never be installed over food contact surfaces, such as prep tables, prep/wash sinks or processing conveyor lines. If service is missed and the glue on the board starts to dry, the insects may fall out of the units. Not all insects that die in an ILT are caught on the glue board. If the airflow in the facility is moving across the front of the unit, it can blow out loose insects.

Monitoring only

Again, insect light traps should be considered a monitoring device. Analyzing the contents of the traps should provide clues about the possible source of an infestation. Knowing some basic biology of common flying insects in your region will likewise help pinpoint the source. Keep a record of the catch and analyze the trend. If an increase in a given species occurs at the same time each month or year, take a proactive approach.

Drain flies — meaning common nuisance flies, fruit flies,

phorid flies, and moth flies — are another common problem in food and beverage processing plants. Drain fly larvae thrive on the organic debris that builds up in drains and other locations. In addition to drains, they can be found in sewage filters, the water traps of plumbing fixtures, and in built-in sinks and garbage disposals. Phorid flies breed anywhere there is decaying organic matter.

These can often be found in more than one area of a facility, and their breeding grounds are usually well-concealed. As a result, they can be extremely difficult to control. Never assume that drains are the only potential source of infestation.

The treatment of these pests is particularly challenging because pesticide application in drains is not always a sound strategy. Many pest control companies can provide environmentally friendly solutions that organically break down drain grease and grime, thus removing the drain flies' feeding source. These materials contain no pesticides, but instead incorporate naturally occurring enzymes and bacteria to remove grease and grime build-up in drains. While most of these compounds are approved for use with plumbing systems, the





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Because they act over time, these compounds may require multiple applications to penetrate small cracks and crevices in flooring. Applications of these products can be as simple as adding the compound to mop water, or as intensive as dismantling drains and applying it with scrub brushes.

Heat treatments

Not all pests that fly can be called flies. Many stored-product insects can attack raw goods as well as finished product. Treatments for these types of insects have changed greatly.

With the phase-out of methyl bromide looming, food processors are looking to less conventional pest management techniques, such as heat. Heat treatments are sometimes employed by organic food processors and large processing companies as part of their IPM programs.

As an alternative to conventional fumigation methods, heat offers a number of advantages:

- It delivers a 100 percent kill ratio because it eliminates all stages of insect life.
- Heat requires minimal preparation of the area to be treated.
- Spot treatments can be per-

formed, making it unnecessary to shut down or evacuate an entire facility.

Heat treatment works by raising room temperature to 126 to 131 degrees F in increments of five to 10 degrees per hour. This process may take as little as eight or as many as 30 hours. During heat treatment, insects are killed by dehydration, and the destruction of some of their key enzymes and proteins. Some food processing and storage facilities are ideal candidates for heat treatment because the products and equipment are able to withstand the high temperature levels.

IPM considers a multitude of situations and solutions for pest control.

As new research and federal regulations continue to limit pesticide use in food processing, pest control companies are continually developing effective new products and treatments. Food processors can potentially improve their corporate image and enhance employee safety by choosing environmentally friendly solutions. **FP**

Frank Meek is a board-certified entomologist and national pest control technical manager for Orkin Pest Control. A 16-year industry veteran, Meek's varied experience in all areas of pest control. During his tenure at Orkin, Meek has worked in both residential and commercial pest control. He works closely with leading universities on Orkin's behalf to learn more about the impact of pests on society.

Insect light traps: do's and don'ts

DO:

- Use wall-mounted units low to the floor, three to six feet, for daytime flying insects.
- Use wall-mounted units high, eight to ten feet, for nighttime flying insects in facilities with ceilings no more than ten feet high.
- Use ceiling-mounted units placed eight to ten feet from the floor for nighttime flying insects when the ceiling is higher than ten feet.
- Position ILTs between the attracting source and the production areas.
- Keep wall-mounted units at least five feet from the food production areas.

DON'T:

- Mount units where natural light from outside can compete with the light from the ILT.
- Mount inside where high-intensity mercury vapor lights are installed.
- Use ceiling mounted units in food processing areas. There is a possibility of the contents being blown out if the glue boards dry out between service calls.
- Place where light from the ILT can be seen from the outside.
- Place in explosive environments.
- Rely solely on ILTs for a control program. They are only one tool in an integrated program of sanitation and exclusion.