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NEWSLETTER 411



Hide & Seek!

By Dr. Stuart Mitchell

Bed bugs hide and seek their blood meal victims with ease. For the pest management professional, bed bugs hide and are hard to seek!

Effectively locating these CO₂ and heat-seeking suckers begins with a bugs' life basics. With many sizes as they grow, adult bed bugs are about 3/10 inch long, reddish-brown-colored, and look sort of like an apple seed. Antennae come out from the head next to compound eyes.

Under cover of darkness and with well-developed legs and feet, bed bugs climb many surfaces and cling to the skin for fearsome feeding as someone snoozes. Being so secretive to snoozers, the nagging nuisance of bed bugs may cause bodily blood shortages. The more common bite plights are itching and a sometimes-secondary infection from significant scratching.

Bullying female bed bugs protectively place 2 to 3, 1/25-inch long, whitish eggs per day each throughout their lives. Eggs are placed in many locations within the buggy background. Young bugs (smaller than the head of a pin) come out of hidden eggs after about 10 days and quickly seek blood meals.

Time taken to go through five bed bug growing stages depends upon stable temperature, relative humidity, and plenty of snoozers. Bed bug nymphs and adults rest and relax in selective sites. "R and R" sites (refugia) allow young bugs to get gut micros that are needed to survive.

Seeking the sites where bed bugs hide is hard. Look carefully for bloodstains on surfaces, feces, eggs (hatched or un-hatched), and "skins" shed from growing bugs.

With a flashlight and magnifier and/or blue light and orange goggles (as bed bug eggs glow or fluoresce), inspect an area 10 to 20 feet in and around the potentially buggy bed.

INSPECT TO DETECT:

- Mattress, including buttons, seems, and cords (look for tears)
- Box springs
- Bed frame
- Headboard
- Furniture next to bed turned over and inspected (inside and under drawers-screw holes)
- Electrical fittings and appliances (wall outlets, light fixtures, switches, telephones, clocks, HDTVs, computers, etc.)
- Cable, computer, and phone lines
- Underneath carpet edges and tack strips
- Floorboard seems
- Behind loose or torn wall paper and coverings
- Door and window frames
- Picture frames, wall mirrors, blinds, curtains, curtain rods, books, cracks and seams in ceilings and moldings, smoke/CO₂ detectors, and thermostats
- Coat hangers, shelves, under counter tops, behind toilets, under sinks, shower areas, etc.
- Animal cages
- Clutter piles and areas
- Carts and wheelchairs
- No space within a structure should be overlooked as a potential bed bug site
- Ask people living in the structure about bed bug sightings
- Write down findings for documentation!**

When seeking where bed bugs hide, do not mistake carpet beetles, cockroach young, mites or other potential pests for bed bugs. The better we understand where bed bugs hide, the easier they are to seek and suppress.

For your information...

NEW CURES FOR HUMAN DISEASE MAY BE FOUND IN THE HOUSE FLY. RESEARCHERS HAVE SEQUENCED THE GENOME OF THE HOUSE FLY.

House flies can potentially transport over 100 disease pathogens. Researchers isolated genes that allow House flies immunity to such pathogens.

In addition, it was discovered the genetic code enables a fly to dissolve waste (such as feces). Such discovery may lead to better human

waste management as well as environmental improvement. With an anatomy that is a functional harborage for pathogenic micros, House flies spread disease via ongoing contact with carrion, garbage, feces, and many other organic wastes. Understood to feed upon aqueous matter such as feces, flies must evacuate their own feces that also may contain significant loads of pathogens.

House flies consume the same foods as humans (resulting in contamination and possible food borne illness). House flies apparently have genetic immunity to their filthy habits.

Exposure	Incubation	Symptom Onset	Illness	Recovery or Death
<ul style="list-style-type: none"> - Exposure to Ebola virus through contact with infectious blood or body fluids, contaminated environmental surfaces, or an infected individual or animal. - In some instances, exposure may be due to aerosolized viral particles. - Exposed individuals are not contagious. 	<ul style="list-style-type: none"> - Virus multiplies within the body before symptoms develop. - Individuals become contagious when symptoms appear. 	<ul style="list-style-type: none"> - Initial symptoms of EHF may include fever, fatigue, muscle pain, headache, and sore throat. - Symptoms appear similar to other viral illnesses. 	<ul style="list-style-type: none"> - Illness progresses to include nausea, vomiting, diarrhea, impaired organ function, and blood count changes. - Some cases experience a rash and internal and/or external bleeding (e.g., from skin, eyes, or gums). 	<ul style="list-style-type: none"> - The bodies of individuals who die from EHF remain infectious after death, and must be handled accordingly during death care. - Individuals who recover from EHF generally are no longer contagious.
Day 0	2-21 days	14-21 days		Up to 49 days

Ebola, learn more about it! <https://www.osha.gov/SLTC/ebola/index.html>

Dos & Don'ts: Fruit Flying Infection Fundamentals

By Dr. Stuart Mitchell

Flying insect control is not just dealing with an "annoyance." Public health can be threatened, and business interruption possible, via the presence of Fruit flying infections." Real control is a function of knowing the Fruit flying infection fundamentals.

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| <ul style="list-style-type: none"> ✓ Do interview your client to gather detailed information regarding Fruit fly pressures and possible sources (demonstrates your genuineness and professionalism). ✓ Do determine the fly species. ✓ Do conduct a floor temperature survey using a laser thermometer (>70°F favors Fruit fly emergence and <60° does not). ✓ Do recommend employing a service provider for linens, rags, and mops. ✓ Do suggest routine cleaning within elevator pits, sump lifts, under loading docks, and the surface of dumpster pads (a written cleaning schedule). | <ul style="list-style-type: none"> ✗ Don't allow expensive produce to spoil (bring to mind storing within refrigeration as there is always room). ✗ Don't overlook cleaning of refuse containers (emphasize daily cleaning and use trash bags). ✗ Don't tolerate delayed maintenance issues such as plumbing leaks, cracks in flooring, and divides in wall-coverings (insist on repairs). ✗ Don't accept holes in window and door screens (replace or repair using 16 mesh screen). ✗ Don't ignore landscape irrigation systems (encourage proper watering calibration). |
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Competent interventions result from knowing the fundamental Dos and Don'ts. Effective interventions deliver both long-term, referring customers and recurring revenue!



BETWEEN A RAT AND A RODENT PLACE!

By Dr. Stuart Mitchell

As rat biology and behavior are progressively researched, the resultant investigative insights provide pest management professionals with intuitive rat pest solutions. When a PMP is between a rat and a rodent place, knowing the rats' capabilities results in RATical rat reduction as well as robust recurring revenue.



RATS' CAPABILITIES

- ☑ Extend and reach approximately 13 inches above a flat surface.
- ☑ Can jump at least 36 inches above a flat surface.
- ☑ Submerge and swim for up to 30 seconds.
- ☑ Can swim up to a half-mile.
- ☑ Can swim up and through toilets.
- ☑ Roof rats can walk horizontal and vertical wires.
- ☑ Can crawl along conduits and pipes.
- ☑ Can pass through openings > ½ inch square.
- ☑ Can climb the interiors of 1½ to 4 inch diameter pipes.
- ☑ Can climb the exteriors of 3-inch pipes.
- ☑ Can climb conduits and pipes within 3 inches of walls.
- ☑ Gnaw wood, glass, synthetic building products, lead pipes, cinder blocks, aluminum, and sheet metal.

RATICAL RAT REDUCTION

- ☑ Bait stations with clear labeling.
- ☑ Bait station systems for many environments (disguised as utility boxes, rocks, to go underground, or to work within most interior and exterior structural niches).
- ☑ Rodenticide baits with high quality, environmentally friendly, decidedly effective active ingredients of various formulations (liquid, meal, pellets, paste, and block).
- ☑ Non-toxic baits for detection of rat activity or census.
- ☑ Florescent bait technology assures program efficacy by tracking rat activity through urine and dropping behavior.
- ☑ Advanced design mechanical traps for challenging environments or where rodenticides cannot be used.
- ☑ High quality food attractants increase mechanical trap placement effectiveness.
- ☑ Innovative glue board systems used within sensitive areas.

POSSIBLE NUMBER OF RATS

- ⚡ No rats to a few rats present when no physical evidences are found after a sighting. A possible recent invasion of <5 rats.
- ⚡ A moderate number of rats present if aged evidences of gnaw marks and droppings are found. If no daytime sightings, but >1 sighted at night in an area, possibly >5 rats per sighting area.
- ⚡ Large numbers of rats present if fresh gnaw marks, droppings, and tracks are found. If three or more rats are seen during the day and at night, possibly >15 rats are in the area.
- ⚡ For a "ball park" or approximate number of rats for a specific area, use the following math.
 - Number of burrow openings counted divided by 3 openings per burrow equals approximate number of burrows.
 - Number of burrows times 8 rats per burrow equals approximate number of rats.
 - Example: For a specific area you count 60 burrow openings. 60 openings divided by 3 openings per burrow equals 20 burrows. 20 burrows times 8 rats per burrow equals approximately 160 rats.

Know the rats' capabilities. Know the number of rats. Know RATical rat reduction. Then know robust recurring revenue!



DON'T BE BEHIND THE



EIGHT LEGGED SPIDER AGGRESSORS CAN PUT PMPS BEHIND THE 8-BALL WITH CUSTOMERS! WITH INTEGRATED PEST MANAGEMENT SKILLS, PMPS CALL THE SHOTS AND WIN THE GAME AGAINST THESE PESTIFEROUS PLAYERS.

While most PMPs know that the presence of spiders means the presence of spider food, in many cases a good thing, this fact is typically not a good sell to Arachnophobic customers.

PEST SOLUTION RX: INSPECT & EXPECT

- Inspect with situational awareness.
- Inspect three dimensionally (length, width, and height).
- Inspect the complete interior.
- Inspect the complete exterior.
- Expect a complete picture of the problem.

PEST SOLUTION RX: LIGHTING

- Blue or Mercury vapor lighting is 112 times more attractive to photo positive insects than yellow or Sodium vapor lighting.
- Encourage yellow or Sodium vapor lighting fixtures at outside entrances and on the structure to reduce attraction of insect prey that attract predacious spiders.

PEST SOLUTION RX: POSITIVE PRESSURE

- Push out ballooning (air current dispersal of spiderlings on a line of silk) into a structure through positive pressure.
- Air intake should exceed air exhaust by >10%.
- Air doors can provide positive pressure, air sanitation, heating, and cooling.

PEST SOLUTION RX: SANITIZED ZONES

- Maintain sanitized zones by eliminating poorly managed vegetation, woodpiles, trash, unintended compost piles, boards, and other debris along exterior structural grade areas.

PEST SOLUTION RX: RELATIVE HUMIDITY

- Reduce and manage excess relative humidity within basements, crawlspaces, porches, etc. through active/passive ventilation and dehumidifier systems.

PEST SOLUTION RX: PRESSURE WASH

- Pressure-wash the exterior structure to knock down and destroy spiders, webbing, egg sacks, as well as remove droppings and insect carcasses.

PEST SOLUTION RX: EXCLUSION

- Exclude spiders by caulking and sealing cracks, crevices, and gaps around windows and doors.
- Install tight fitting screens (including appropriate pressure closers for service doors and quick drop screen doors for overhead doors-while open).
- Install pest exclusion brush systems (can be custom made).

PEST SOLUTION RX: HEPA VACUUM

- Use a high-efficiency particulate air filtration (HEPA) vacuum to remove and destroy spiders, webbing, egg sacks, and insect carcasses.
- Use the appropriate attachments to reach areas such as behind and under fixtures, furniture, storage, wall hangings, corners, and ceilings.

PEST SOLUTION RX: MONITORING & TRAPPING

- Glue boards (containerized or non-containerized) and/or adhesive monitors placed flush along walls, adjacent to storages, and in elevated three dimensional orientations monitor spider species and pressure.
- Glue boards can trap large numbers of spiders and reduce human encounters.

PEST SOLUTION RX: PROFESSIONAL PRODUCT TREATMENT

- Treat indoors and outdoors with a professional product which is properly labeled for the spider species and environment.
- Read, understand, and follow all pesticide label directions.

PEST SOLUTION RX: COMMUNICATION

- Communication with customers throughout the process of spider management can be challenging. On the one hand, it is important to show the value of using professional services to manage spider pressures. On the other hand, you need to establish realistic expectations with those whom have a zero tolerance for spiders.

PEST SOLUTION RX: FOLLOW-UP

- If spider management is done correctly, little follow-up is required until the next scheduled service visit.
- Constant communication is critical to win the game against spiders and keep your customers for life.



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