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Pests and Food Establishments

Underlying issues allow for pest problems

Pests represent a health risk: contamination

Product loss, business loss, regulatory action

2

Cockroaches & Public Health

Mechanical vectors of pathogens

Asthma and allergy triggers

-feces and exoskeletons

3

Flies & Public Health

Adult flies may cause contamination/irritation

- mechanical transmission of bacteria
- salivary secretions and regurgitation
- defecate while feeding and resting
- allergic reactions to hairs & exoskeletons
- myiasis: invasion of human tissue by flies

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Rodents & Public Health

BACTERIAL INFECTION CAUSED BY RAT URINE IN BRONX KILLS 1, SICKENS 2 OTHERS

February 2017

Salmonella viable in rodent droppings for 86 days

handling dead rodents can lead to infection

plague, typhus, hantavirus, allergies, tick-borne disease, febrile illness, food-borne illness, etc...

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Common Pests in Food Establishments

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Every Pest Tells a Story

Knowing the pest can help you determine what conditions are present to support their populations.

A detailed inspection helps you find and address those conditions.

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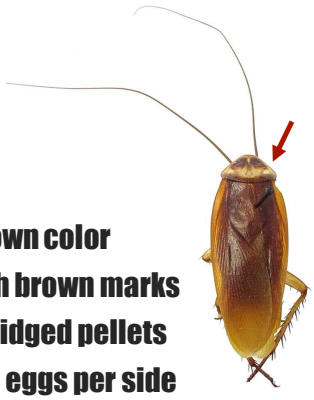
American Cockroach



ID: 1.5 – 2", reddish-brown color
-pronotum yellow with brown marks
Feces: 1/8" blunt end, ridged pellets
Ootheca: 5/16 inch, 7-8 eggs per side

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German Cockroach

ID: 1/2" tan with 2 dark stripes on pronotum
Feces: black specks affixed near harborage
Ootheca: 1/3 inch, tan; 12-24 eggs per side

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Flies

Pest fly species develop in moist situations.

Species tells you what breeding conditions to look for.

Inspection helps you find the conditions.

University of Nebraska
https://bit.ly/2G0pKfL

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Flies

larvae
(maggots)

pupae

adult

Larvae: eyeless, cream colored, mouth hooks, spiracles
Pupae cylindrical with circling lines from segments
Adults with two flight wings (one pair)

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effective pest management depends on accurate identification of pests

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House Mouse

contrast in fur color

seasonal activity

building access*

Peromyscus

Mice

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Norway Rat

tail length | body size | ear size | snout shape

geography | nest site preference*

Roof Rat

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Inspection Tips and Insights

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Inspection Goals

An inspection should answer these questions:

- Are pests present and at what level?
- What factors are attracting pests?
- Where are pests living and hiding?
- How are pests getting in?
- What can be done to eliminate pest attraction, harborage and entry?

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German Cockroach Inspections

"fecal focal points"

crevices near warmth and food

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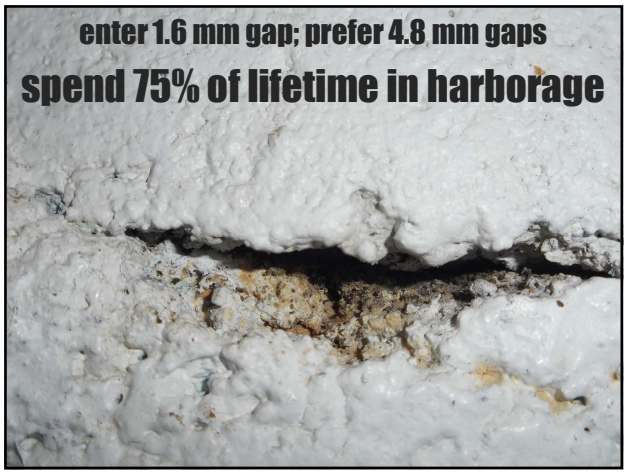

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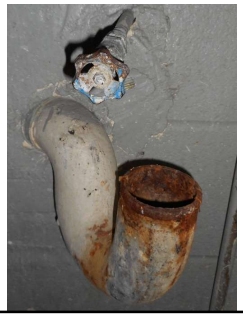
American Cockroach Inspections

unused, dry plumbing (floor, sink, toilet)
broken sewer pipes / waste lines

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Fly Inspections

Breeding and feeding sites can differ


Which is a feeding site?
Which is a breeding site?

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Sanitation Issues and Flies


detailed inspections reveal hidden food items
- -under and behind equipment
- -back leg zones

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Rodent Inspections

- ❑ droppings
- ❑ runways
- ❑ sebum marks
- ❑ burrows
- ❑ gnaw marks
- ❑ nest material
- ❑ footprints
- ❑ caches

Attractive Elements

- ❑ shadows
- ❑ water
- ❑ warmth
- ❑ food

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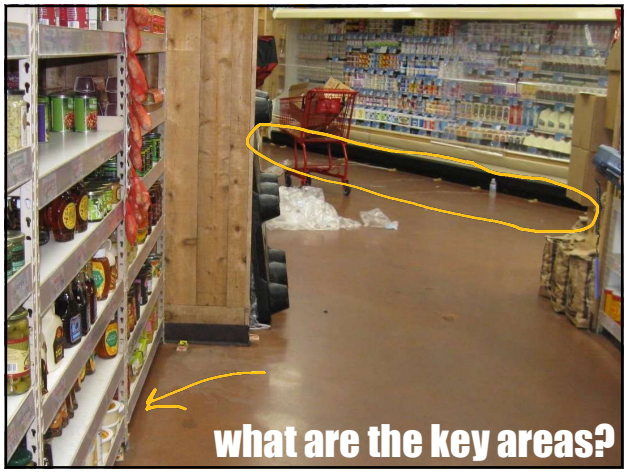

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Rodent Evidence: Droppings

"rodent feces can provide the pest professional a roadmap to the high-activity areas such as primary runways, preferred corners, food sources and the rodent's harborages"

-Robert Corrigan
Mallis Handbook of Pest Control

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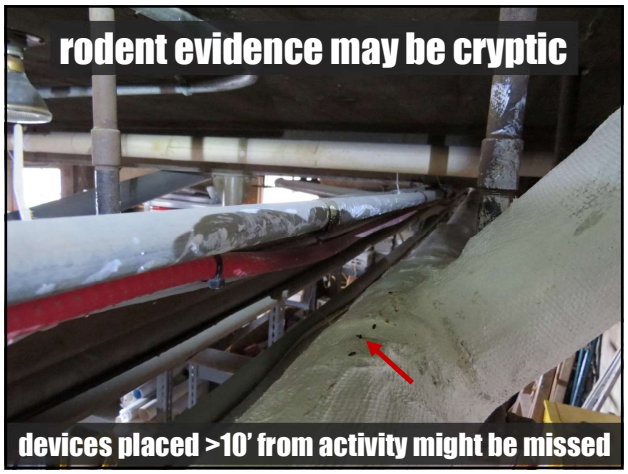

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Know Your... Stuff

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Mice	Rats
Up to 100 pellets/day	40-50 pellets/day
Typically 50-60	3/4 inch long
1/8 to 1/4 inch long	1/4 inch wide

It can be difficult to estimate rodent numbers based on only the number of droppings

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droppings should be removed

demonstrates if evidence is new or old
removes potential pathogen source

www.cdc.gov/rodents/cleaning

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Rodent Evidence: Droppings

Environment matters!
fresh vs. old

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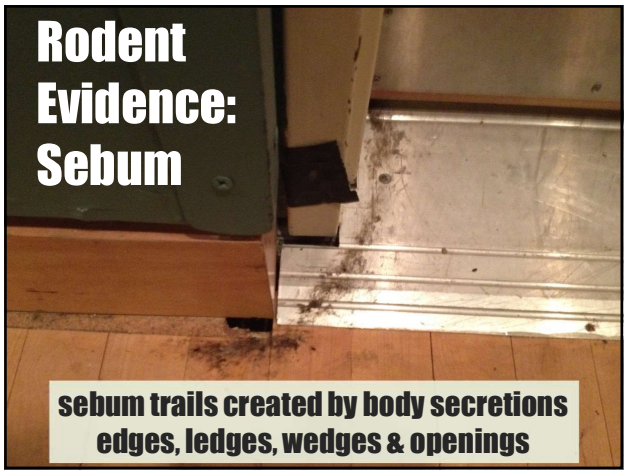
Rodent Evidence: Sebum



sebum trails created by body secretions
edges, ledges, wedges & openings

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Rodent Evidence: Footprints

Norway Rats
¾ to 1¼ inch
footprint

House Mouse
3/8 to ¾ inch
toeprint

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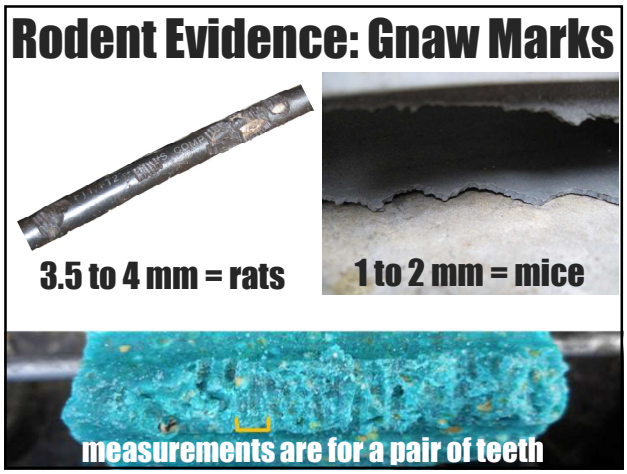

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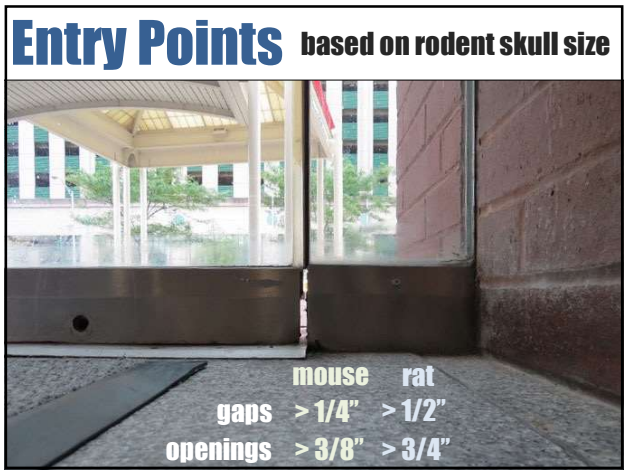

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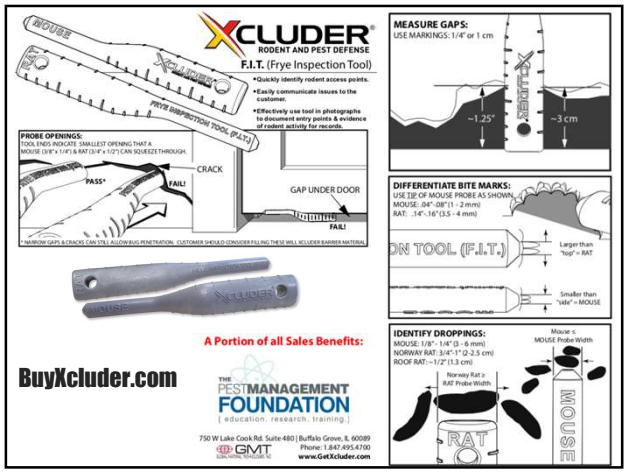

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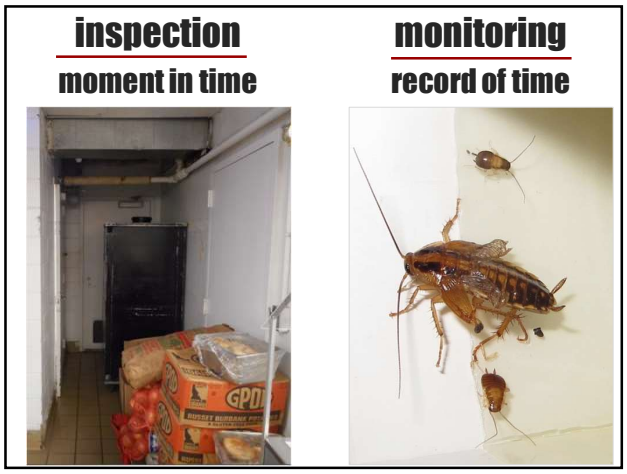

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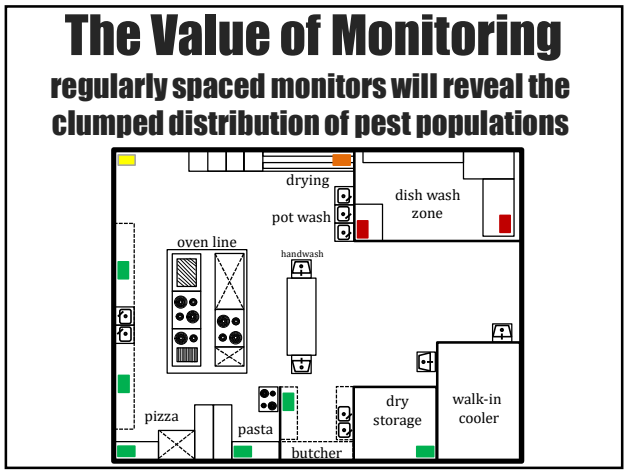

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monitoring outcomes: reveal relative proximity to harborage

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What is the Status?

Introduction 1+ individuals enter a new area may or may not establish relatively easy to manage

- ☐ deliveries
- ☐ staff items
- ☐ outdoors
- ☐ next door

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What is the Status?

Infestation population established - reproducing sustained by food, water, & shelter

- ☑ manage pest population numbers
- ☑ prevent spread, new introductions

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introductions will happen infestations should not

introductions result in infestations when:

- lack of monitoring for early detection
- lack of effective management to reduce #'s
- presence of attractive conditions
- presence of entry route (delivery, openings)
- lack of communication: site & pest control

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Whose Job is it Anyway?

Regular inspections: you; pest pro; site

Monitoring for early detection: pest pro

Rapid and planned response: pest pro

- Reduce pest population: pest pro
- Remove conditions conducive to pests: site
- Prevent new introductions (exclusion): site

Communication: you; pest pro; site

Resolution can take weeks to 1+ months

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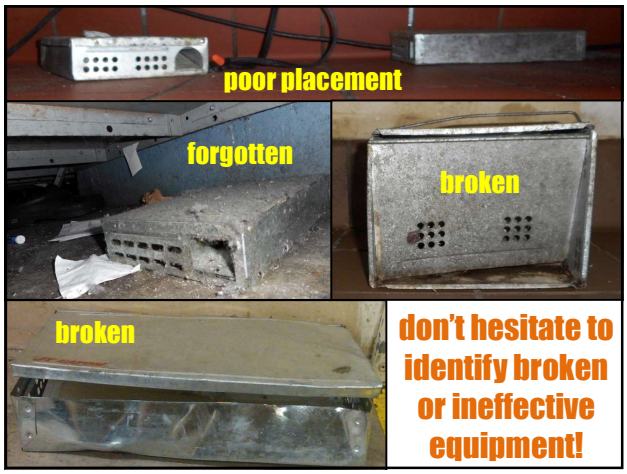

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Whose Job is it Anyway?

Note that the pest pro is hired to do a job.
Site management may ignore their advice.

Also, some pest pros might be new, lacking experience, expertise & communication skills.

You have a better chance of site management listening to observations & recommendations.

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Summary

Pests are a risk for food safety

Detailed inspections and interpretation of evidence will help you identify risks.

Remember that *exclusion is pest prevention*, and *sanitation is pest control*.

Keep in mind that monitors provide useful information about a pest problem or the control program.

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International IPM Symposium

IPMsymposium.org/2025/

3/6/2025
San Diego, CA

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NEW YORK STATE
INTEGRATED PEST MANAGEMENT

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Cornell Cooperative Extension provides equal program and employment opportunity

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