

# SANITATION & ITS IMPORTANCE IN PEST MANAGEMENT

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# CONTENT

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- ◆ **The Challenge!**
- ◆ **The Expectations - They are Changing**
  - **Industry Trends & Potentials**
  - **Changing Customers' Expectations**
  - **Provision & Management of Services**
  - **PMP Qualifications**
  - **Pest Control vs. Population Management**
- ◆ **Observe & Recommend**
- ◆ **Profiling an Effective Pest Management Program**



# THE CHALLENGE

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**“Too often pesticides are used as a solution and not as a supplement to effective pest management.”**

- Scheduled/repeated applications of pesticides
- Pesticides as first choice solution - the Exterminator









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**“33% of regulatory  
failures are attributed  
to insects and rodents.”**

**New York State Ag & Markets**





# THE EXPECTATIONS - THEY ARE CHANGING

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- ◆ Industry trends that affect us
- ◆ What are your customer's expectations?
- ◆ How do you design a program to meet your customer's expectation?
- ◆ How will you provide the services?
- ◆ How will the program be managed and improved?
- ◆ In order to improve to the point where pesticides “are used not as a solution but rather as a supplement to effective pest management”.



# INDUSTRY TRENDS

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- **1975** - More than 70% of the food industry (*e.g., processing, warehousing*) utilized an in-house program.
- **Today - Working with PMP's.**
  - ✓ Restaurant (98% plus contracted)
  - ✓ Supermarket (95% plus contracted)
  - ✓ Food Warehouse (85% plus contracted)
  - ✓ Processing Plant (90% plus contracted)
- **Trends on pesticides**
  - Regulatory
  - Consumers



# CHANGING CUSTOMERS' EXPECTATIONS

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## ◆ **FROM: Current Conditions** (Necessary)

- Minimum requirements, in order to be invited to bid on a contract
- Are generally **reactive**
- **Insufficient** to be successful

## ◆ **TO: Expected Conditions** (Sufficient)

- Essential to understand the client's expectations
- Basic to design an effective & **proactive** program
- Necessary to enable effective modification of program
- Fundamental to add value to program/contract
- **Necessary** to stay in the business



# Current Conditions

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## ◆ That Required by Law

### ■ Training

- » Know how to inspect & identify
- » Determine source
- » Consider cause
- » Correct or recommend

### ■ License & Registration

### ■ Insurance

### ■ Must be current

### ■ Other

## ◆ Minimal Expectations



# Expected Conditions

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## ◆ Beyond Legal Requirements

- Difference between being **reactive** vs. **proactive**
- Value added to the client

## ◆ **Section 402 (a)(4)** - If it has been prepared, packed or held under unsanitary conditions, whereby, it **MAY** have been contaminated with filth, or whereby, it **MAY** have been injurious to health . . . . .

## ◆ Plant Process & Language

- Understand differences among processes
- Appreciate the significance of differences



# Expected Conditions (Cont.)

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## ◆ Plant Prerequisite Programs or Formalized GMPs

- Sanitation
- cGMPs (operational & personnel practices, maintenance for food safety, sanitary design, etc.)
- Pest Control
- Chemical Control
- Complaints
- Recall & Traceability
- Allergen Control
- Other



# Expected Conditions (Cont.)

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## ◆ The Concept of Carrying Capacity

- Understand and apply the concept to set an acceptable and sustainable target for pest presence or activity in the plant

## ◆ The I.C.E. Concept

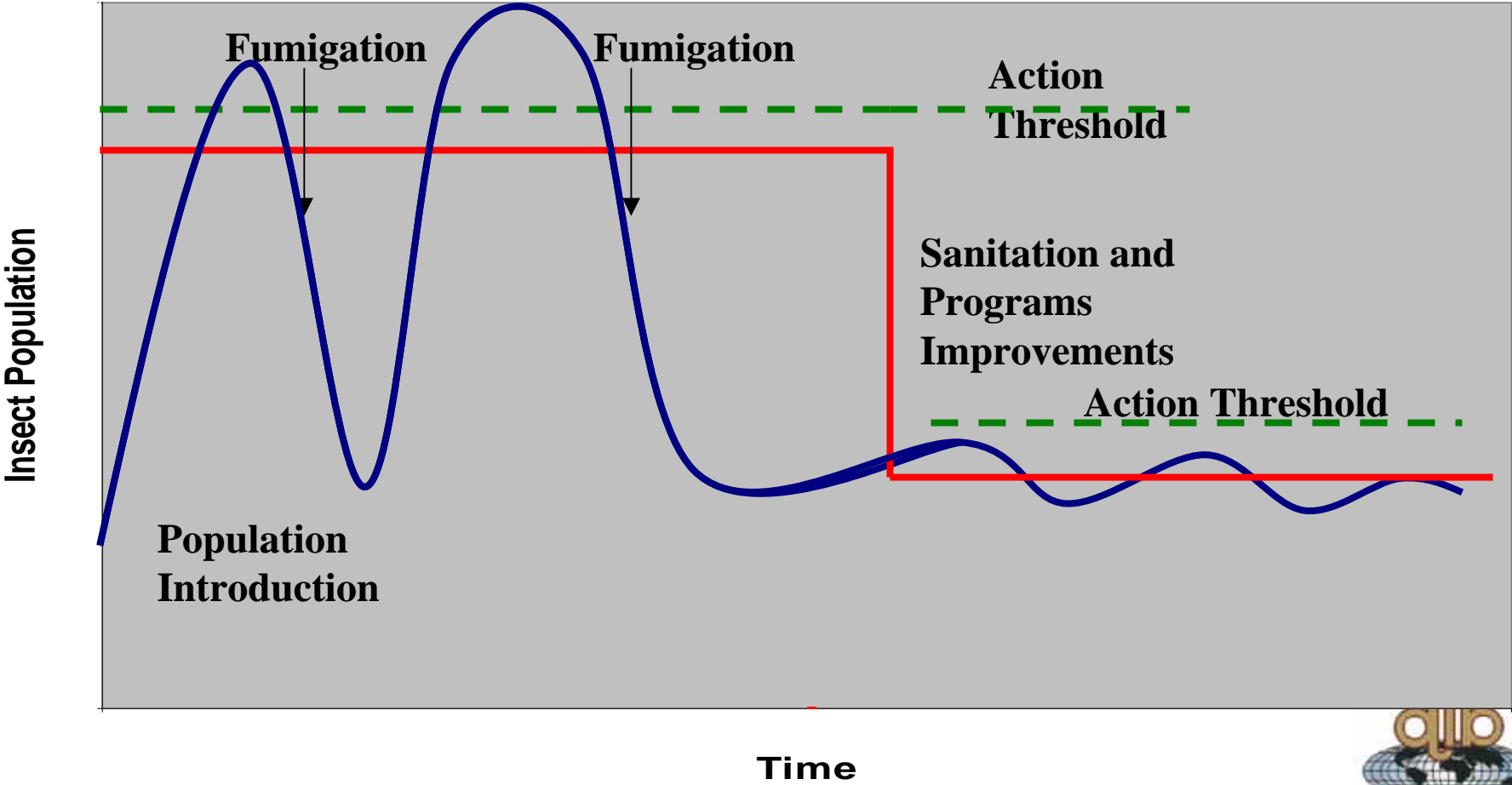
- Understanding HACCP concepts to identify pest hazards & design effective control or elimination strategies and measures

## ◆ Initial Pest Hazard Analysis

- Applying I.C.E.
- Relying on prerequisite programs to control/eliminate pest activity potential
- Set realistic goals for acceptable carrying capacity



- Carrying Capacity
- Insect Population
- - Action Threshold





# Expected Conditions (Cont.)

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- ◆ Inspect for **ME** (The Plant)
  - Applying all of the above to recommend effective and permanent solutions
- ◆ Member of the plan's food safety committee
  - Participate in their regular meetings
  - Give **ME** options
- ◆ Program/Contract Revision
  - At least annually
  - Any time a pest related event occurs that threatens food safety

# Expected Conditions (Cont.)

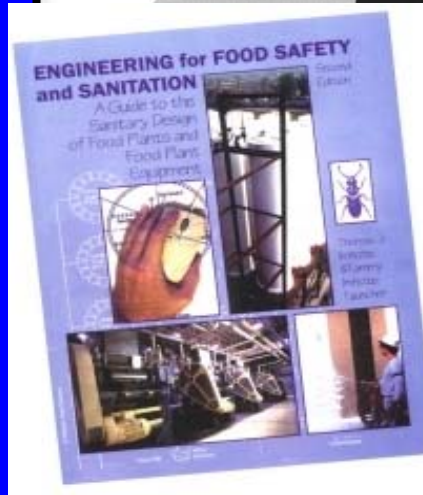
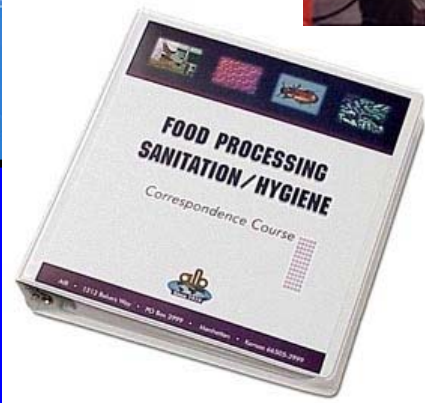
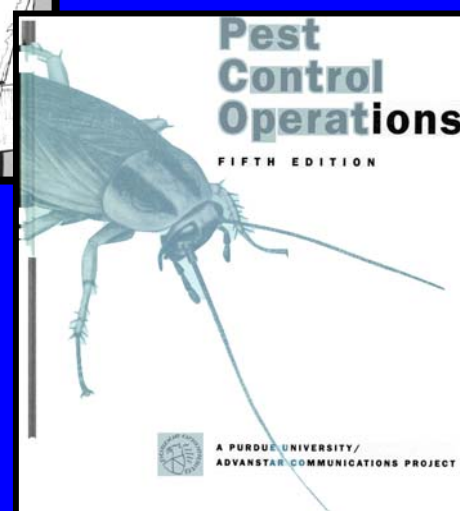
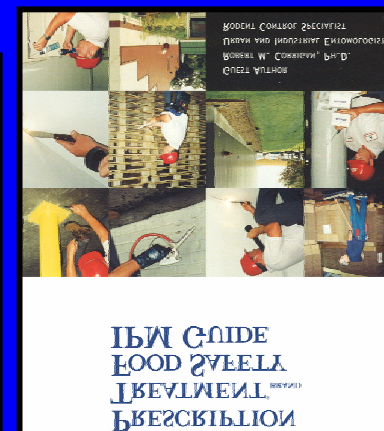
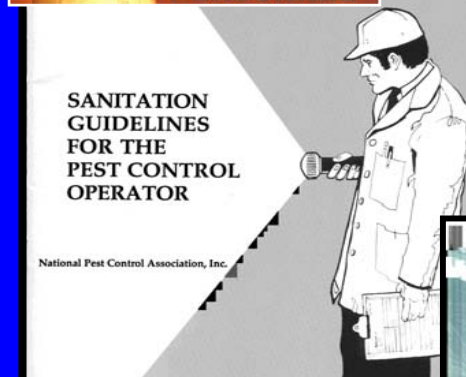
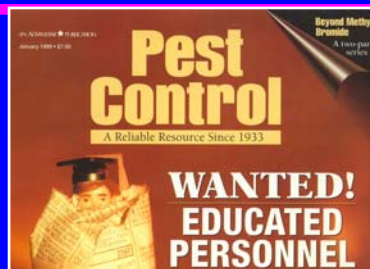
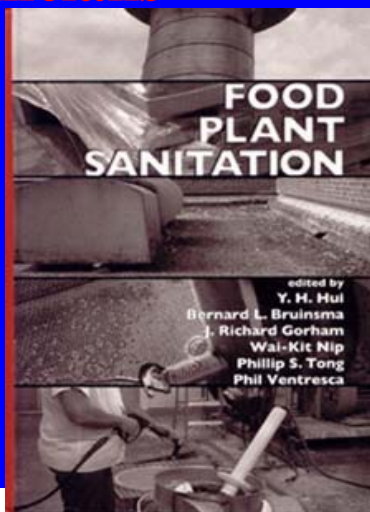
## ◆ Professional Development

- Stay current
- Train your **technicians**

### NPCA Field Guide to Structural Pests



Eric H. Smith  
and  
Richard C. Whitman



# PROVISION & MANAGEMENT OF SERVICES

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## ◆ Pre-contract Actions

- Preliminary evaluation of the facility in terms of pest activity/potential
  - » Inspection (Application of I.C.E.)
  - » Review of audit reports
- Analysis of data
- Initial set of recommendations/changes and actions

## ◆ Scope of Program/Contract

- Expected results or goals (measurable)
- How program/contract will be carried out
- Collection and utilization of data
- Qualifications of technical personnel
- Periodic Review of Results
- Annual Review





# What are the conditions?

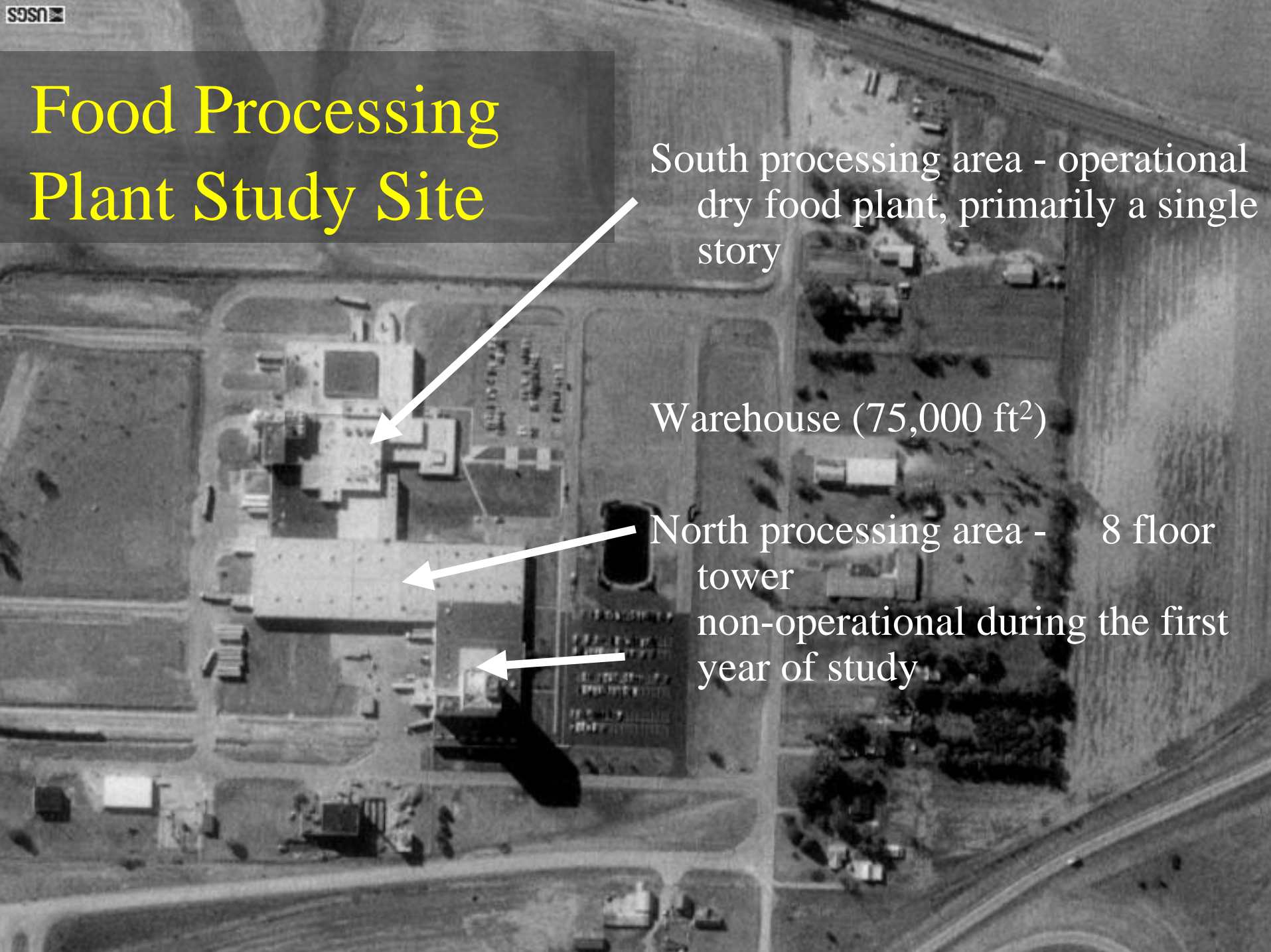


# Food Processing Plant Study Site

South processing area - operational dry food plant, primarily a single story

Warehouse (75,000 ft<sup>2</sup>)

North processing area - 8 floor tower  
non-operational during the first year of study







**What am I  
looking at?**



# Rodent Control Issues?



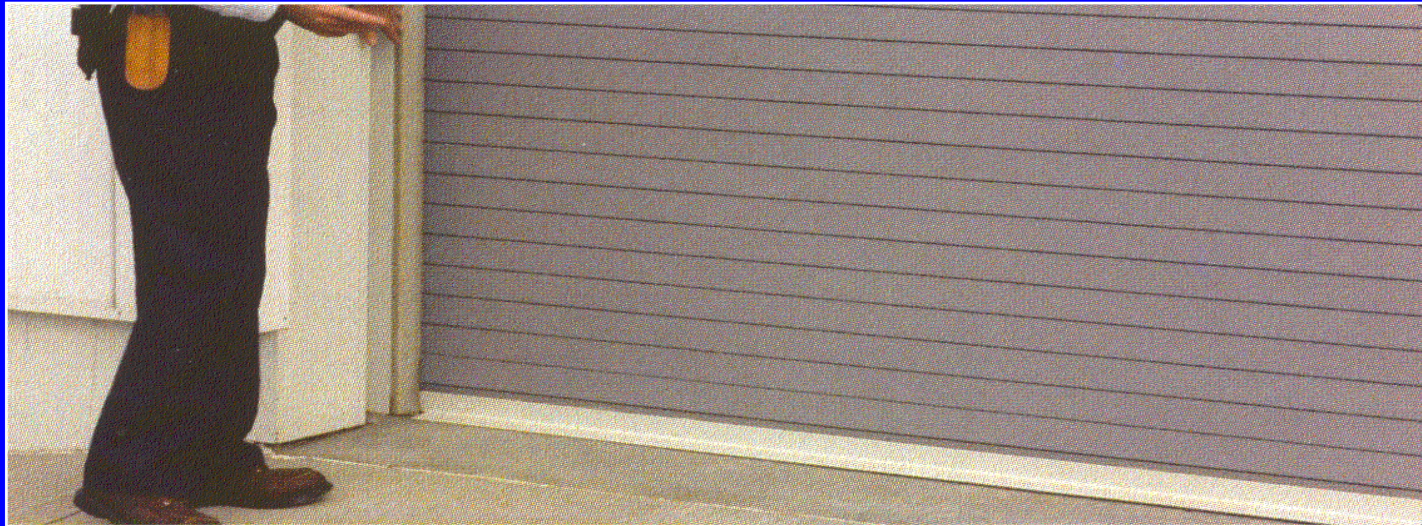


# PMP Inspections should include





But it is just a little hole!





**“Drop ceilings and  
wall panels  
sometimes create an  
environment for  
infestation.”**



# Operational Practices



**Correct**



**Incorrect**

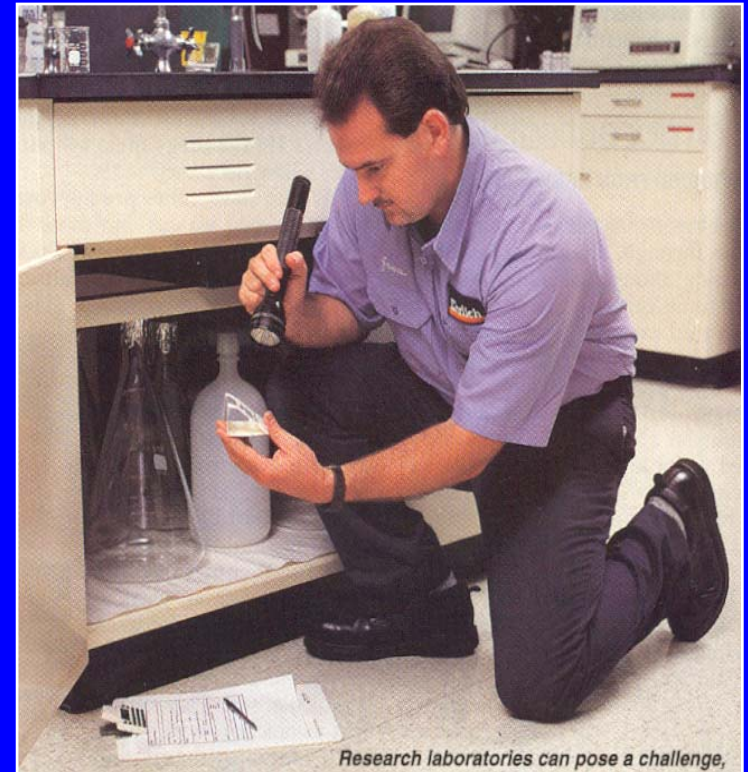


# What can I do?



# PMP QUALIFICATIONS

- ◆ Trained in GMPs
- ◆ Knowledgeable in I.C.E.
- ◆ Understands processes
- ◆ Knows the pests
- ◆ Can inspect & identify
- ◆ Can accumulate and analyze information
- ◆ Uses good good judgement based on analytical results
- ◆ Can come up with multiple solutions
- ◆ Can communicate and cooperate



# What standards need to be followed?

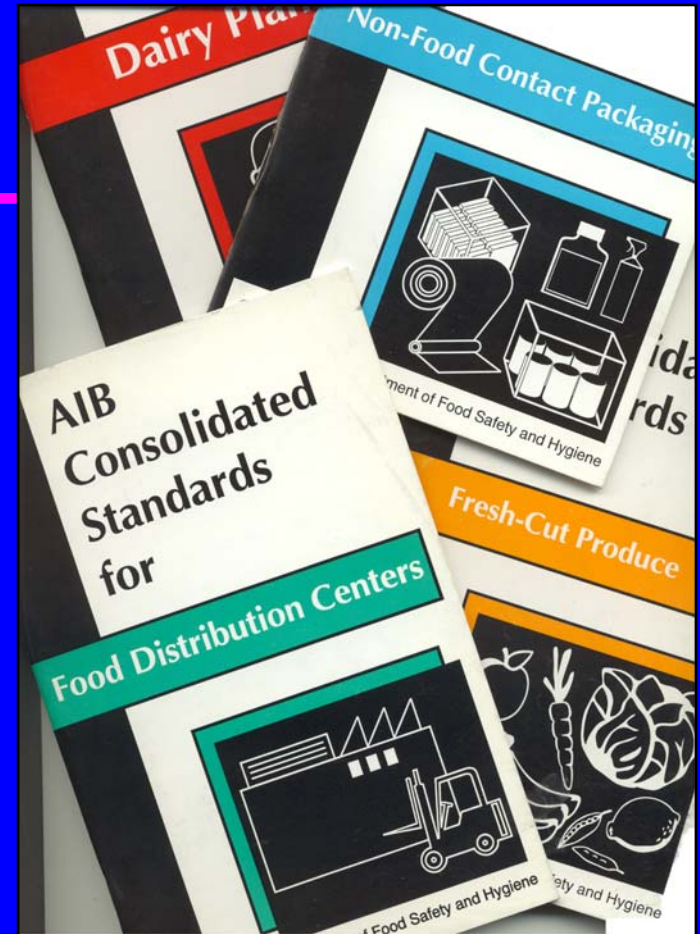
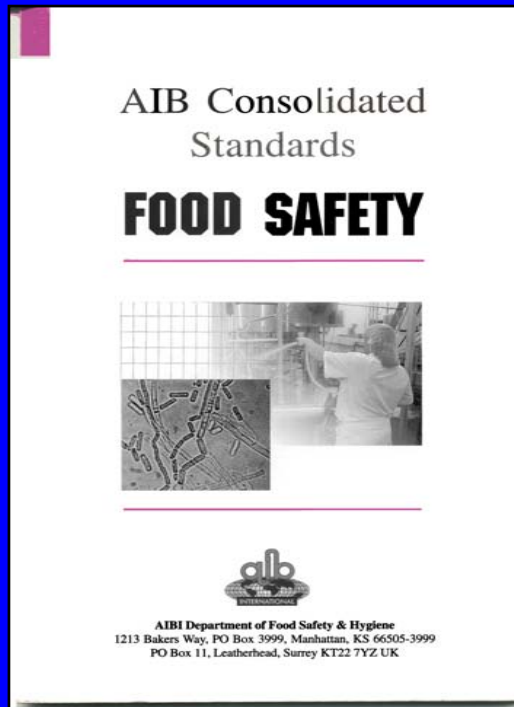
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- Customer Specifications
- Consumer Expectation
- Government (Federal, State, Local)
- Third Party Standards



# PEST CONTROL

*“A formalized preventive pest control program **shall** be maintained . . . . .”*





# It's a judgment call!

- Bait stations **shall** be installed every 50-100 ft.
- Internal traps recommended at 20-40 ft. intervals
- At the side of each door
- Is external trapping required?
- **USE GOOD JUDGEMENT  
BASED ON KNOWLEDGE,  
DATA AND ANALYSIS**





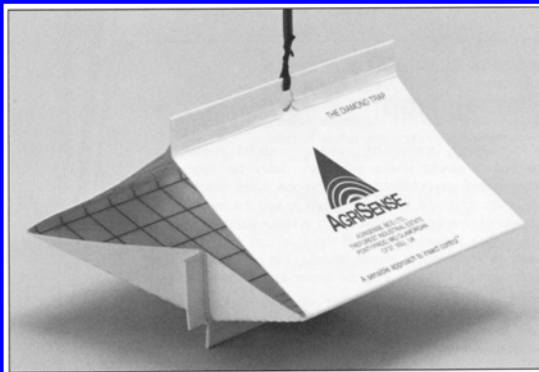
# CONTROL VS. MONITORING

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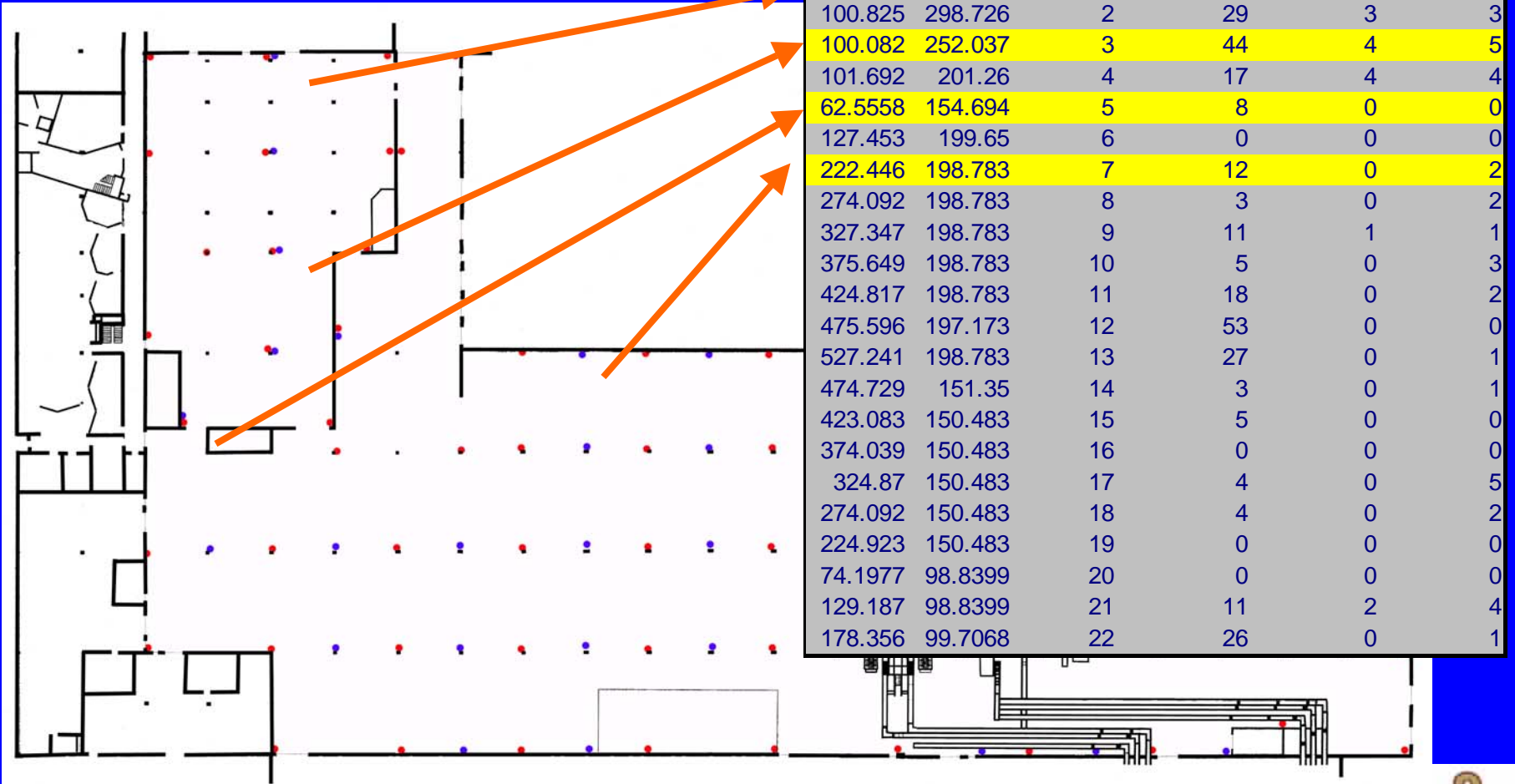
- ◆ **Monitoring** = inspect to obtaining information, evaluate to assess exposure, and make decision for corrective action, if necessary
- ◆ **Control** = Action(s) taken to bring undesirable situation back to within expected parameters
- ◆ **Monitoring Tools:**
  - Light traps
  - Pheromones and sticky traps
  - Glue traps
  - Bait stations and mechanical traps
  - Plant Employees
  - Inspections

# PHEROMONES AND STICKY TRAPS

- ✓ Target Pest(s)
- ✓ Areas of Concern
- ✓ Action Threshold
- ✓ Frequency of Inspection
- ✓ Trap Replacement



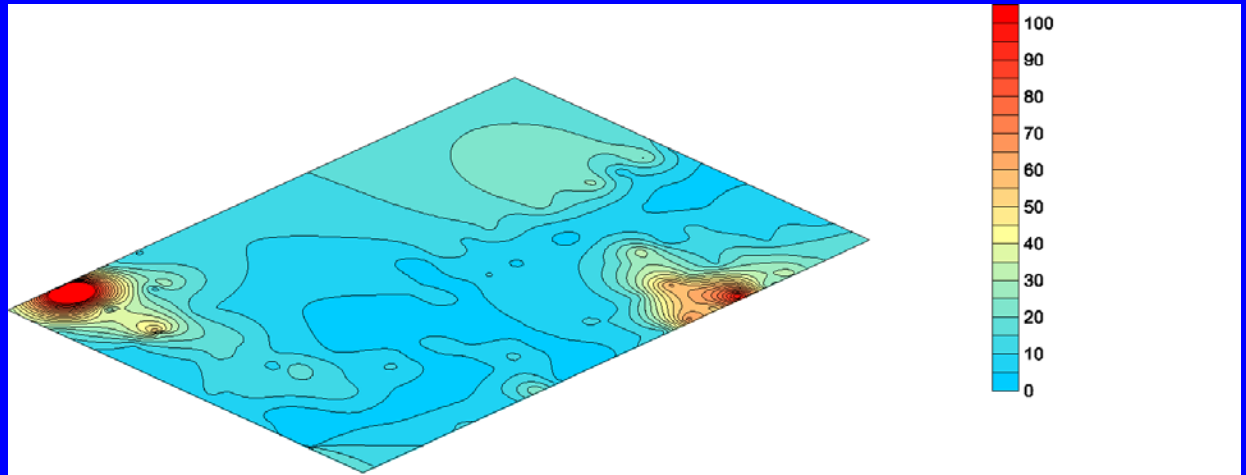
# Create a data sheet



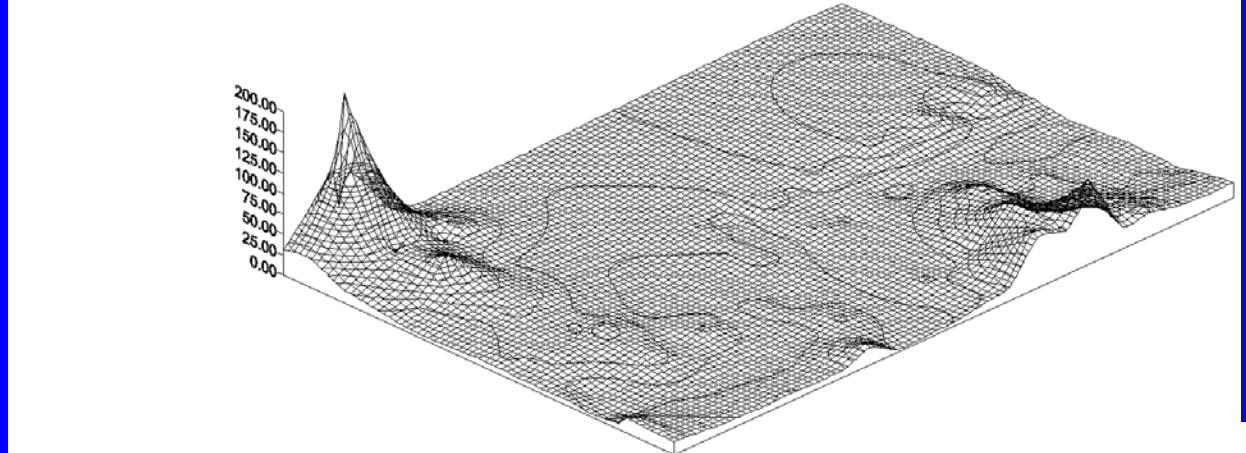
# Spatial Mapping

Use a mathematical model to estimate the values at unsampled points.

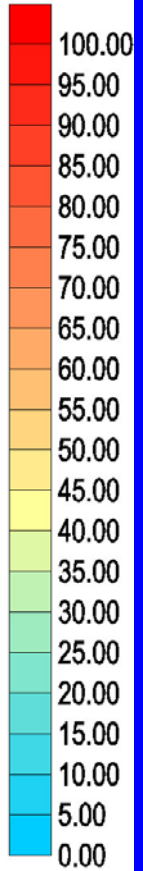
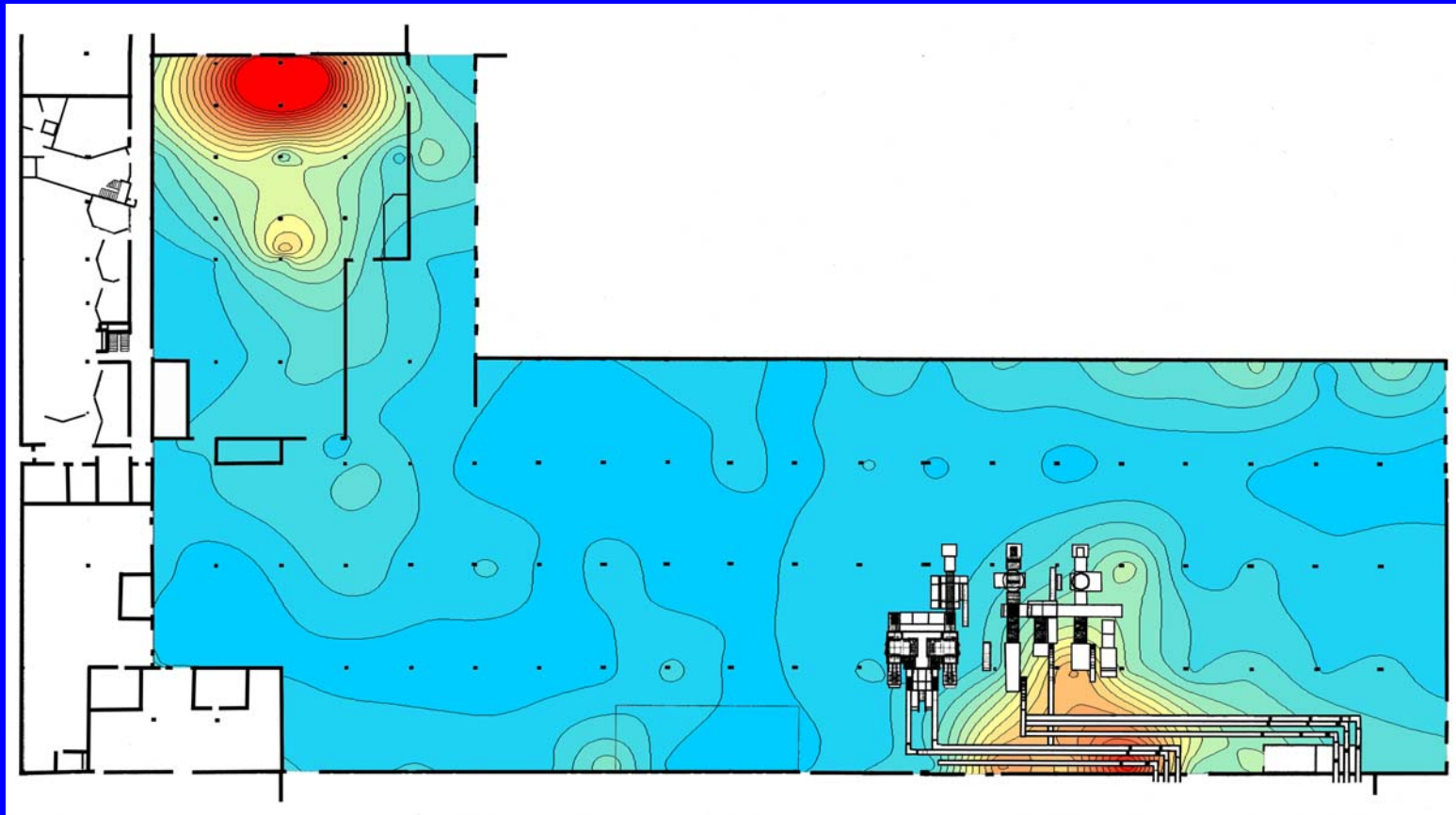
2-D  
(Contour Map)



3-D  
(Surface Plot)



# Identify Hot Spots and possible Range of Activity





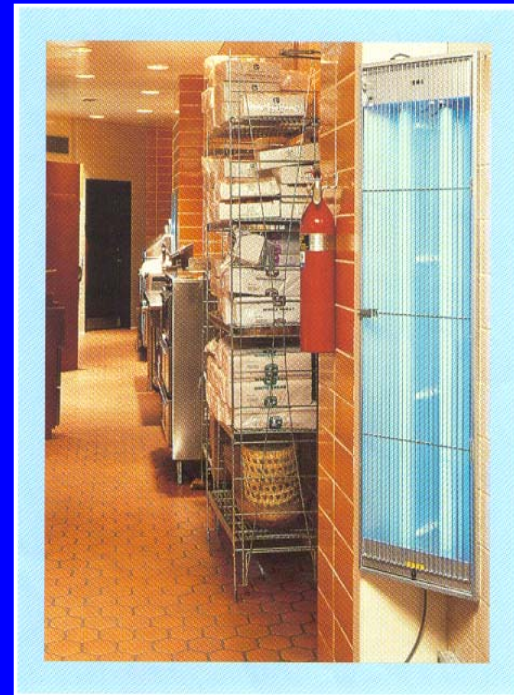
# LIGHT TRAPS

📄 Location (*wall or hanging*)

✓ Glue Board or Zapping

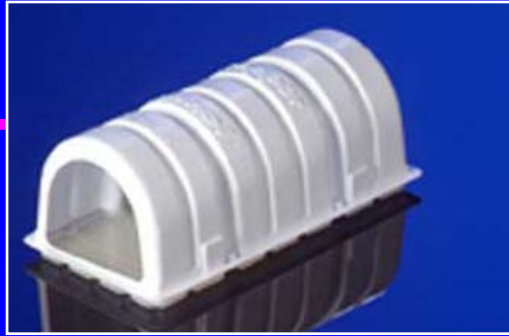
✓ Collect and Identify

✓ Solutions



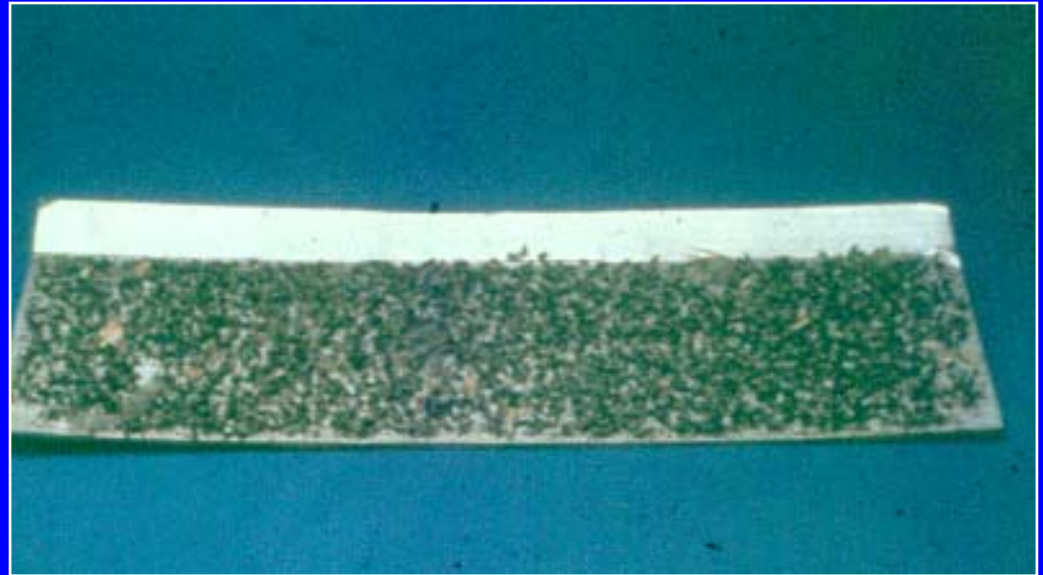
# GLUE TRAPS

- Properly Maintained  
*(Clean – free of webbing, droppings, and insects)*
- Service Record *(Punch card, bar coding)*
- Look for conditions . . .



# Inspect and Evaluate

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**Give me options**



# ULV

## What is it? - What should it be?

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### Traditional:

- ✓ Reduces migration
- ✓ Knocks down on contact
- ✓ Good control of flying insects

### New Uses:

- ✓ Evaluates IPM
- ✓ Identify foci of pest activity
- ✓ Provide data for corrective actions



# Crack & Crevice

## ■ Traditional Approach:

- Random placement of most toxic pesticides
- No regard for target pest

## ■ Current Trend:

- What is the pest?
- Precision placement
- Least toxic material
- Monitoring for success



# OBSERVE AND RECOMMEND

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◆ *“Live mouse in trap #5 - left of overhead door.”*

◆ **Immediate Correction:**

- ✓ Disposed of mouse, cleaned and reinstalled trap # 5
- ✓ Clean up droppings along perimeter.
- ✓ No evidence of activity in adjacent area.
- ✓ Installed (2) mechanical traps along exterior wall for added protection.

◆ **Permanent Correction:**

- ✓ Gap at base of door has been scheduled for repair.
- ✓ Will follow-up at stated date for repair completion.



# OBSERVE AND RECOMMEND

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◆ **Fruit flies were observed on wall adjacent to sink and behind mixer.**

◆ **Immediate Correction:**

- ✓ Clean up spillage and standing water.
- ✓ Removed fruit fly larva by floor/wall junction.
- ✓ Treated cracks with \_\_\_\_\_.

◆ **Permanent Correction:**

- ✓ Repair of broken grouting by mixer has been scheduled.
- ✓ Will follow-up at stated date for repair completion.

# OBSERVE AND RECOMMEND

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- ◆ *“There has been an increase of 10 IMM in trap #7 by ingredient storage area.”*

- ✓ **Additional information:**

- ✓ In slot #A324 there was evidence of product spillage, webbing and aged ingredients.

- **Immediate Correction:**

- ✓ *Clean up product spillage, remove webbing and discard aged ingredients*
- ✓ *Reset Trap #7*
- ✓ *Add two additional traps to increase surveillance of situation*

- **Permanent Correction:**

- ✓ *Review and adjust as necessary operational practices, inventory rotation, household cleaning, self-inspection program*





# OBSERVE AND RECOMMEND

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◆ It was observed that the production area of the facility was being fumigated three times per year.

◆ **Follow-up Investigation:**

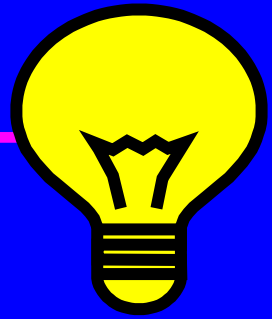
- ✓ Review past records to assess information and reasons used to fumigate three times per year
- ✓ Apply I.C.E. and concept of carrying capacity to assess potential structural, design, maintenance, operational and other issues, which may be contributing to problem
- ✓ Assess knowledge of pest control operator in regard to GMPs, production process, design, construction, I.C.E. etc., to assess capability for improvement

◆ **Potential Solutions:**

- ✓ Various



# Profiling and Effective Pest Management Program



- ◆ Define the problems/challenges
  - Initial conditions (I.C.E.)
  - Unforeseen/new conditions (Inspections)
  - Recurrent conditions (Use of historical data)
- ◆ Provide supporting evidence & documentation
- ◆ Recommend effective solutions
  - Immediate correction
  - Permanent correction
- ◆ Communication & Cooperation
- ◆ Follow-up

# A clean and pest free environment

HERSHEY'S

Doritos

© Ball Park Franks

ball  
park  
BRAND

FRANKS

Ore Ida  
POTATOES



NABISCO

Dannon Products

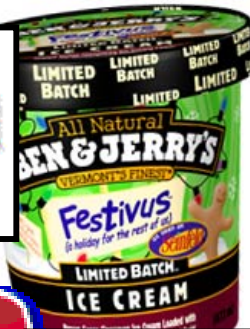


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