BED BUGS
CIMEX LECTUCLARIUS

Presentation by: Luis Agurto Jr.  Photos by: Carlos Agurto
Bed Bug Bites

- Painless
- Allergic response to anti-coagulant saliva
- Have not been shown to transmit diseases
- Increased sensitization can occur over time
<table>
<thead>
<tr>
<th></th>
<th>Egg</th>
<th>Nymph</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Color</strong></td>
<td>White</td>
<td>Clear white color</td>
<td>Brown to mahogany</td>
</tr>
<tr>
<td><strong>Distinctive attributes</strong></td>
<td>Oval shaped eggs</td>
<td>Wingless with flat body</td>
<td>Wingless with flat body</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>1 mm.</td>
<td>1-3 mm.</td>
<td>3-4 mm.</td>
</tr>
<tr>
<td><strong>Reproduction &amp; Growth</strong></td>
<td>Hatch between 4-21 days. 10 days on average.</td>
<td>Molt 5 times, requiring blood meal each molt</td>
<td>Lay 1-5 eggs per day; 200-500 per life.</td>
</tr>
<tr>
<td><strong>Food</strong></td>
<td></td>
<td>Blood</td>
<td>Prefer human blood</td>
</tr>
<tr>
<td><strong>Habitats</strong></td>
<td>Found in cracks, crevices, box springs, bed frames, etc.</td>
<td>Same places as adults</td>
<td>In any stage bed bugs are found in bedrooms, carpets, closets, inside walls, cracks and crevices.</td>
</tr>
</tbody>
</table>
Bed Bug Hiding Places

- Tend to congregate in cracks and crevices
- Prefer old hiding places that have fecal stains
- Pioneering bed bugs
Bedbug Dispersal

1. Active Stowaway
2. Passive Stowaway
3. Migration
Return of the Bug

- Target Specific Baits vs. Broad Spectrum Insecticides
- Increased International Travel
Insecticide Resistance

• DDT – resistance “was first reported in the late-1940s and was so widespread a decade later that other products were already being recommended as alternatives.” (Pest Control 9/06)

• Pyrethroids – “are not providing more than 50% mortality as residuals and as direct contact insecticides.” (PCT Magazine 12/06)
Components of IPM for bed bug eradication.

1. Education/Communication
2. Inspection/Assessment
3. Develop a site specific (unit/tenant) plan
4. Monitor and keep records of pest findings, bites, actions taken and results
5. Evaluate effectiveness and continue monitoring
Create a Team

Primary
- Tenant
- Pest Management Professional
- Building Owner/Manager
- Building Maintenance

Intermediary
- Department of Public Health
- Social Services
- Physicians
A Case Study
Inspection
Non-Chemical Treatment Options

- Heating – 120F for 2 hours
- Freezing – 0F for 4-7 days or with Dry Ice
- Steam – 220F dry steam
- Encasement
- Disposal of infested items
- Physical removal via vacuum
- Barriers and traps
Vacuuming removes visible bed bugs from the equation.
• 220F Dry Steam kills instantly
Criticsms of Steam

- Blow Out - Dead

- Short Range – Use for cracks and crevices only, use soapy water attachment.
Applying Insecticidal Dust
Seal ‘em out

Keep ‘em in
Chemical Application

- Insect Growth Regulator & Residual Pyrethroid
- Repeated 2-3X @ Two Week Intervals
Monitors
Clutter and poor sanitation allow infestations to remain hidden and make bed bugs more difficult to eradicate.
New Tools

- **ThermaPure Heat Treatment**
  - Can test multiple locations with probes
  - Synergism of heat and boric acid/dessicants
  - Some items cannot be heated
  - Fire Safety concerns

- **Bed bug sniffing dogs**
  - Can quickly alert bed bug activity
  - Cannot differentiate between old and new activity
  - Not enough research available testing efficacy of field work
In Conclusion

- Bed bugs reproduce rapidly
  - Resistance
- Continual monitoring and quick action is needed
- Prevention and physical destruction bed bugs must be emphasized
- Bed bug detecting dogs are a good inspection tool
- Good Feng Shui = ease of treatment
Power point presentation developed by the Pestec Team