Residential and Commercial Fly Control

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House flies
Latrine flies
Little house flies
Blow flies
Cluster flies
Flesh flies
Stable flies
Drain flies

Flies Commonly Found Around Homes and Commercial Buildings

Flies and Certain Disease Potentials

<table>
<thead>
<tr>
<th>Species</th>
<th>Eggs per Cycle</th>
<th>Generations per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musca domestica</td>
<td>120-150</td>
<td>Multiple</td>
</tr>
<tr>
<td>Stomoxys calcitrans</td>
<td>80-100</td>
<td>Multiple</td>
</tr>
</tbody>
</table>

Life History Attributes of Flies

<table>
<thead>
<tr>
<th>Name</th>
<th>Minimum Days from Egg to Adult</th>
<th>Normal Days from Egg to Adult</th>
<th>Eggs per Cycle</th>
<th>Generations per Year</th>
<th>Overwintering Stage(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>House fly</td>
<td>7</td>
<td>10-21</td>
<td>120-150</td>
<td>Multiple</td>
<td>ALL</td>
</tr>
<tr>
<td>Stable fly</td>
<td>12</td>
<td>15-30</td>
<td>80-100</td>
<td>Multiple</td>
<td>ALL</td>
</tr>
<tr>
<td>Little House fly</td>
<td>22</td>
<td>25-59</td>
<td>58-72</td>
<td>Multiple</td>
<td>Larva</td>
</tr>
<tr>
<td>Latrine fly</td>
<td>28</td>
<td>28-60</td>
<td>900 total</td>
<td>Multiple</td>
<td>Larva</td>
</tr>
<tr>
<td>Blow fly</td>
<td>21</td>
<td>35-35</td>
<td>80-100?</td>
<td>Multiple</td>
<td>Larva?</td>
</tr>
<tr>
<td>Drain fly</td>
<td>18</td>
<td>30-40</td>
<td>20-100</td>
<td>Multiple</td>
<td>Larva?</td>
</tr>
</tbody>
</table>

Identification and Biology

House fly, *Musca domestica*

- Non-biting insects
- Habitat:
  - Moist organic matter
  - Soiled bedding, manure, spilled feed & silage, etc.

Stable fly, *Stomoxys calcitrans*

- Biting Flies
- Habitat:
  - Moist organic matter
  - Straw and manure, spilled feed & silage, round bales, grass clippings, etc.
  - Soil: concrete interface
Identification and Biology

House fly - *Musca domestica*
- Life Cycle: 10 Days
- Live: 20-21 Days
- Eggs: Up to 600

Stable fly - *Stomoxys calcitrans*
- Life Cycle: 21 Days
- Live: 20-30 Days
- Eggs: 200 to 400

Potential Breeding Habitats

- Compost piles
- Garbage bins
- Areas of spilled feed
- Pet excrement
- Poorly drained areas
- Clogged drains
- Decomposing animals or fruit
Moist organic matter is ideal for fly development.

Liquification of Food

Fifth flies resting on vegetation near wastewater lagoons during midday heat at Camp Fallujah, Iraq.

Photographer: Rico Istock
Flies and especially house flies are attracted to light colors such as white or yellow. If a homeowner or business owner is located near a livestock operation, then recommending a dark or dull color for problem areas is advised. Success Story: Homeowner near a large commercial dairy in Oklahoma had consistent problems with house flies until she painted the eaves of her home brown.

**Monitor**ing

**Spot Cards**
- Count or estimate the # of spots
- Min. 5 cards
- 7 days/sample
- **Action Guideline:** About 100 spots per week

**Monitoring - 3x5 Index “Spot” Card**

**Using Spot Cards**
- Date and Number
- Location, location, location
- High numbers vs Low numbers - Interpreting
- Recordkeeping
  - Evaluation of Fly Management Program
  - Historical record / Legal

**Monitoring**

Gallon plastic milk jugs
- four 2-inch holes
- suspend from rafters or building supports, hang w/ stiff wire to minimize movement
- Min. 5 jugs
- 7 days/sample
- **Action Guideline:** About 250 flies per week
Traps
- Traps are a good tool to estimate a fly population and determine if additional control is needed
- However, traps are usually marketed as a control option
- Lure Traps vs. Visual Traps

Lure/Bait Traps
- Utilize a bait that attracts the flies to the trap
- Locate away from the house
- Can be messy
  - STINK! STINK! STINK!

Visual Traps
- Utilize color or light to attract the flies
- Some contain an insecticide
- Most contain some type of glue

Sanitation
Disrupt Fly Life Cycle:
- Sanitation
  - Moist organic matter is...
    - Paradise to a Fly!
  - Dry is good!
- Regular removal of animal/pet wastes, garbage, and all other decaying plant and animal matter
- Garbage cans should have tight-fitting lids
Exclusion

- Screening and other exclusion techniques can be a very important management tool for several types of fly problems
- Caulk or cover all openings into a home to prevent flies from entering
- Efforts to exclude flies must be done prior to when they enter buildings

Insecticides

- Indoor products
- Outdoor products
- Residual activity
- Goal of an insecticide application is to reduce the number of flies not try to eliminate every fly
- Serious problems exist with insecticide-resistant flies
- Spot treatments with insecticides applied to areas of high fly activity are most efficient

Residual Sprays for Outdoor Use

- Residual (long-lasting) sprays are useful for killing flies outside the home
- Areas to be treated include:
  - porches
  - covered patios
  - Garages
  - breeze-ways
  - doghouses or kennels
  - garbage cans

Residual Sprays for Outdoor Use

- Surfaces treated should be sprayed to the point of runoff
- If picnic tables, benches, chairs, etc., are in the area, cover or remove them before spraying
- Pets should be removed from the area before spraying and not allowed to return until spray is dry
- Insecticides recommended for residual outdoor sprays include: malathion, permethrin, and related pyrethroids

Vertical Resting Sites

- Flies utilize vertical resting sites for mating and thermoregulation
- Good “rule of thumb” inspect South or West facing walls early in the morning especially if it is a cool morning not cold or hot
- Residual sprays on these walls can be effective

Insecticide Baits for Outdoor Use

- Baits kill flies rapidly, but their effectiveness is short-lived unless treatments are repeated
- Baits are best used to supplement a spray program
- Dry baits can be scattered around garbage cans or placed in garage windows or near other fly resting places
Flies inside the home are best controlled with synergized pyrethrins or synthetic pyrethroids in aerosol or spray form. These materials give quick knockdown and kill of flies but have no lasting effect. They are most effective when applied into the air of closed rooms. Pyrethrins aerosols and sprays used as a spot treatment in open spaces kill few flies except those actually hit by the mist.

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Most come from local breeding habitats. Large influx of fly populations may be a dispersing population. Dispersing populations can come from:
- Large scale animal operations
- Weather phenomena

Keep your place clean and flies will only be an occasional problem. Traps are good tools to determine if a fly population is increasing. Insecticides can be effective but are short lived. Determining where a fly population is coming from can be subjective unless monitoring is in place.

Where do flies come from?

<table>
<thead>
<tr>
<th>Table 1: Average percent of killed and controlled fly population.</th>
<th>Flies killed by:</th>
<th>Number of flies killed per fly trap per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits</td>
<td>22.0</td>
<td>158.00</td>
</tr>
<tr>
<td>Vegetables</td>
<td>21.0</td>
<td>154.00</td>
</tr>
<tr>
<td>Poultry</td>
<td>15.0</td>
<td>107.00</td>
</tr>
<tr>
<td>Barnyard</td>
<td>14.0</td>
<td>98.00</td>
</tr>
<tr>
<td>Ground</td>
<td>9.05</td>
<td>62.00</td>
</tr>
<tr>
<td>Forest</td>
<td>8.00</td>
<td>54.00</td>
</tr>
<tr>
<td>Non-sprayed Fly Traps</td>
<td>5.00</td>
<td>34.00</td>
</tr>
</tbody>
</table>

1. Flowchart presented per monitor (A-Trap). 2. Flowchart presented per monitor (B-Trap).

Questions