House Fly *Musca domestica*

- Native to Afrotopical and Oriental regions
- Introduced into Americas during colonial times
- All continents but Antarctica
- Most common cause of fly annoyance in North America
- Synanthropic fly
  - Associated with human activities
  - Exploits variety of food (solid and liquids) and habitats
  - Extremely successful

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House Fly Adult

- 3/8" long
- Thorax
  - Wings extend beyond abdomen
  - 4 longitudinal stripes
- Abdomen
  - Checkered gray and black
  - Creamy yellow sides
House Fly: Veterinary Importance

Abundant in confined animal facilities
- Poultry, dairy, feedlot
- Adults on all substrates
  - Feed, manure, vegetation, buildings
- Degrade appearance of facilities
- Microbial contamination of eggs, milk (feces and vomit)

House Fly: Veterinary Importance

- Feed on animal body fluids
- Little or no adverse effect on animal growth, feed conversion
- Mechanical vector of bovine mastitis bacteria, enteric bacteria, food-borne bacteria
- Facultative myiasis
- Developmental hosts for nematodes
  - Habronema muscae and Dracchia megastoma
  - Gastric and cutaneous habronemiasis

House Fly Prevention and Control

Integrated Pest Management
- Monitoring adult populations
- Selecting control tactic
  - Cultural
  - Biological
  - Mechanical
  - Insecticide
Monitor House Fly
Adult Populations

Spot cards
3 X 5 inch white file cards

Count fly specks
@ 7 day intervals

Treatment >100 spots

Cultural Management

Sanitation (Waste Management)
- Eliminate ovipositional sites
- Basis of effective fly control program
- Weekly removal
- Spread material out to dry
- <50% moisture larvae die

Biological Control

Egg, larval and pupal parasites
Mechanical Control

- Pheromone-baited traps
  - Muscalure + odor

- UV light traps
  - Close to entryway
  - 5 ft. from floor

Chemical

- Target adult flies
- Resistance is a major issue
- Sprays
  - residual sprays
  - space sprays
- Fly baits
  - Attractant + insecticide

Stable Fly
Stable Fly

**Adult**
- Similar in appearance to house fly
- Distinctive bayonet-like mouthpart
- Both ♂ and ♀ are blood feeders
- Feed once per day (2-5 min)

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Eggs deposited in decaying organic material

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Stable Fly

**Life history**
- Larva - 3 instars (11-21 days)
- Pupa - similar to house fly pupa (6-26 days)
- Overwinter as larvae or pupae
Stable Fly

**Adult Habits**
- Peak feeding activity (early AM, late PM)
- Prefer lower extremities
- Rarely found indoors
- Strong fliers

Stable Fly Veterinary Importance

- Primarily feedlot and dairy pest
- Behavior responses + indicator of annoyance:
  - Bunching
  - Tail flicking
  - Foot stomping
  - Head tossing

Stable Fly Veterinary Importance

- Reduce feed efficiency and weight gains of feedlot cattle by 20% at 36 flies per front leg
- Reduced milk flow up to 40%
- Effects are greater when hot and humid conditions (heat stress)
Stable Fly Veterinary Importance

- Intermediate host of Habronema microstoma
  gastric and cutaneous habronemiasis (summer sore)
- Mechanical vector success
  - Bacillus anthracis (Turell and Keudel 1987)
  - African swine fever virus (Meiller et al. 1987)
- Harbor pathogen but no transmission
  - Potomac horse fever E. risticii (Burg et al. 1994)
  - Lumpy skin disease virus (Chihota et al. 2003)
  - Bovine leukemia (Weber et al. 1988)

Stable Fly feeding on dogs

Stable Fly

Integrated Pest Management

- Monitoring adult populations
- Selecting control tactic
  - Cultural
  - Biological
  - Mechanical
  - Insecticide
Stable Fly Control on livestock

- Insecticides are moderately effective
- Difficult getting insecticide on target
- Flies spend short period of time on host
- Insecticide label statement:
  - "Aids in control of stable flies, face flies and house flies..."