Household and Nuisance Pests

Erin W. Hodgson
Extension Entomologist
Utah State University

Utah Pest Control and Lawn Care Association Conference

19 February 2007; Salt Lake City, UT

Outline

- Most common offenders
  - Allergy-causing
  - Sanitation/nuisance
  - Venomous, stinging, biting
  - Disease vectors
- Control options
- Where to get more information

1) Allergy-causing pests

- People/pets become irritated
- Urticating hairs, wing scales, frass, cast skins
  - Ex., dust mites, beetles, moths, spiders
- Symptoms include: eczema, hay fever, asthma, respiratory complications, dermatitis, rhinitis, otitis, hives




Reducing allergy symptoms

- Difficult and expensive!
- Vacuum often with a vacuum cleaner provided with a high efficiency purifying air (HEPA) filtration system. Throw away bags after use.
- Enclose bed materials in dust-proof covers.
- Wash bedding, including mattress pads, every other week in hot water (130 °F).
- Replace furniture and flooring with tile or wood.
- Reduce fabric decor and purchase washable toys.

2) Sanitation/nuisance pests

- Annoying, spoil food, damage structures
- Can rarely vector disease
  - Pantry: beetles, moths
  - Structural: ants, termites
  - Sanitation: flies, cockroaches, bed bugs
  - Nuisance: box elder bugs, earwigs






Confused and red flour beetles

- Similar in appearance (red can fly)
  - Flat, shiny and reddish-brown, clubbed antennae
- Feed on damaged kernels, moist grain (>12%), grain dust or flour
- Found in stored grain, food plants, homes

confused

red

Dermestid beetles

- Scavengers
  - dried animal matter, fibers, foods
- Larvae are light brown and hairy
- Adults dark and hairy
- Hairy can be allergy-causing




Other beetles

- Sawtoothed grain, flat grain, drugstore, cigarette, and spider beetles
- Whole and processed grains
- Tobacco, books, candy, wool, leather, dried flowers, spices, hair

sawtoothed

flat grain

drugstore

spider

Indian meal moth

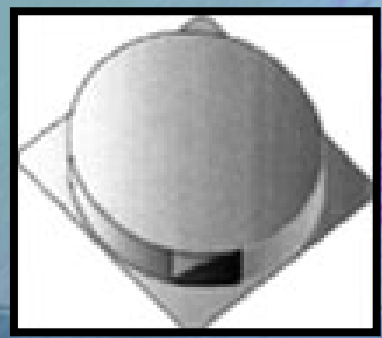
- Most common pantry pest in the world
  - Grains, cereals, dried fruit, nuts, candy, spices, powdered milk, chocolate, pet food
- Infested food will be webbed
- Larvae have light body, dark head
- Adults have bronze wings, zig-zag flight

Controlling pantry pests

- Careful sanitation
  - Locate and remove infested sources
  - Air-tight containers
  - Rotate all foods (FIFO!)
- Source elimination
  - Clean up spills, use a vacuum
  - Seal cupboards and shelving
  - Remove accumulating paper
- Temperature control (heat and cold)

Controlling pantry pests, cont.

- Reduced risk options
  - Pheromone traps, sticky traps, baits
- Other general insecticides
  - Homeowner: allethrin, boric acid, permethrin, pyrethrin, tetramethrin
  - PCO's: cyfluthrin, cypermethrin



Carpenter ants

- Commonly seen in the spring
- Ants use wood for nesting
- Eat sugar and protein
- Must have access to the outside
- PCO's: boric acid, cyfluthrin, permethrin

Termites

- Not common in Utah, consume wood
- Spring mating swarms, caste system
- Gain access through wood touching soil
- Mud tubes are obvious
- PCO's: barricade, dursban, permethrin, cyfluthrin



Bed bugs

- Feed on humans, birds, bats
- All stages feed, painless biters
- Attracted to CO_2, body heat
- Can survive months without food
- Eggs laid in furniture/wall cracks
- PCO's: permethrin, carbaryl, cyfluthrin

Box elder bugs/ladybugs

- Can be a nuisance during fall
- Can stain fabrics, smell bad
- Rarely allergy-causing
- Vacuum up adults
- Seal cracks, windows

Beneficial insects!

3) Biting and stinging pests

- Venomous bites or stings
  - Painful swelling, itching, skin blistering
  - Allergic reactions, trouble breathing
  - May require hospital visit, seldom fatal
- Ex., spiders, centipedes, scorpions, bees, wasps, ants




Hobo spider

- Funnel-web spider, swift running
- Live in building cracks, under debris
- Feeds on insects
- Bites cause necrotic lesions

Control of spiders

- Males wander July – September
- Severity depends on venom, sex and age
- Habitat elimination to reduce risk
  - Keep outside of house debris-free
  - Seal cracks to reduce insects in the basement
  - Sticky traps can be helpful
  - Dusts are most effective: bendiocarb, boric acid, cyfluthrin, deltamethrin, diatomaceous earth, and pyrethrins

Bees, wasps and ants

- Bees feed on pollen, nectar
  - Hairy, stout bodied
  - Can be aggressive and defend their colony
  - Barbed stinger, leave behind
- Ants seek sugar and protein
  - Typically wingless, some capable of stinging

What kind of wasp is it?

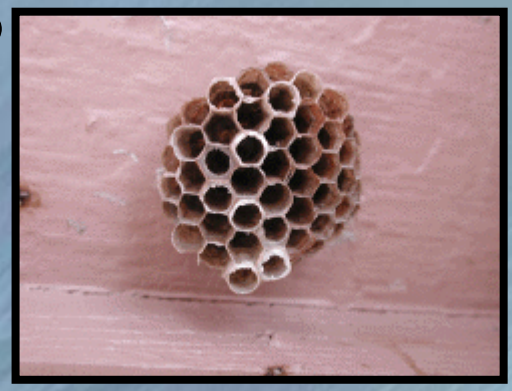
- Yellowjackets
  - Banded black with yellow
  - Nest underground
  - Paper envelopes
  - Scavengers, often around garbage
  - Easily sting
  - 90% “bee stings”

What kind of wasp is it?

- Hornets
  - Stout body, dark color, white stripes
  - Enclosed nests
  - Large grey, papery
  - Under eaves
  - Eat live insects
  - Rarely sting

What kind of wasp is it?

- Paper wasps
  - Shiny black and yellow or red-brown
  - Slender bodies
  - Hind legs “dangle”
  - Build open nest cells
  - Attached to buildings and equipment
  - Eat other insects



Controlling wasps and ants

- Reduce nesting sites in spring
- Seal cracks and openings
- Reduce food sources
- Traps are for yellowjackets
- Use insecticide in late evenings
  - permethrin, tralomethrin, bifenthrin, tetramethrin, allethrin, and esfenvalerate

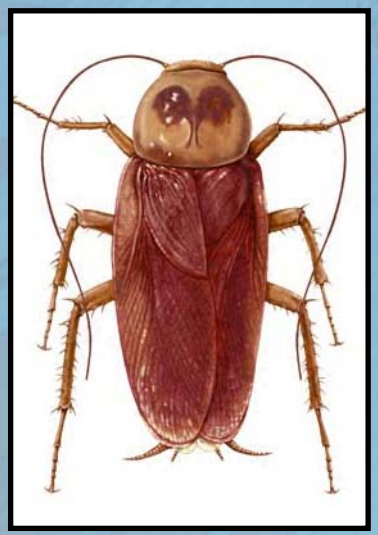
4) Disease-vectoring pests*

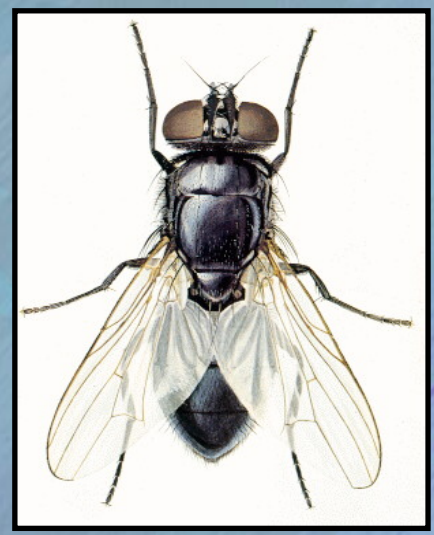
- Parasite – organism living on or in a host
  - Ectoparasite lives outside the host
  - Endoparasite lives inside the host
- Host – organism where the parasite feeds
- Pathogen – organism that causes disease
- Vector – intermediate host carrying a pathogen

** Defined by the Torre-Bueno Glossary of Entomology*

Disease Vectors

- Mechanical transmission (i.e., accidental)
  - Pathogen does not replicate in vector; accidental spread by body hairs
  - Cockroaches can spread food poisoning
  - House flies can transmit bacillary dysentery

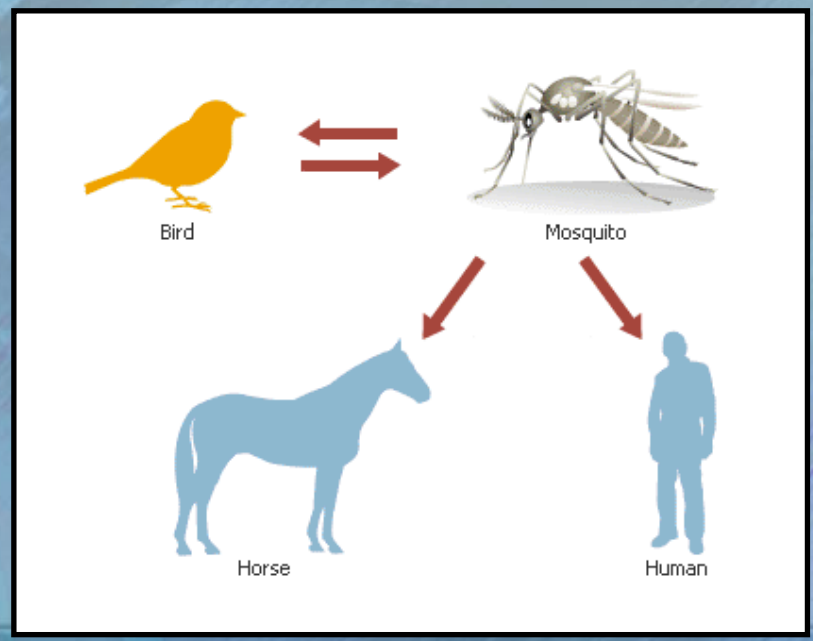




Disease Vectors

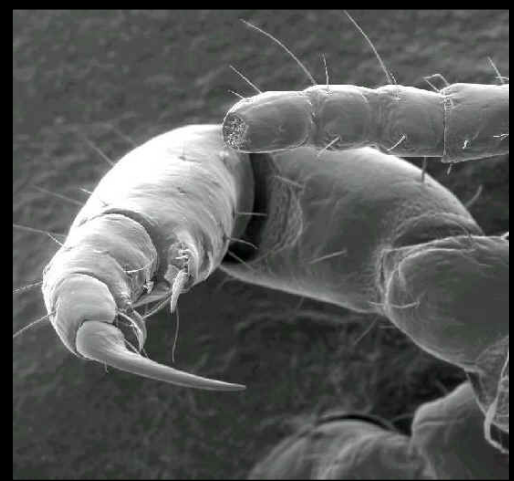
- Biological transmission (i.e., replicates)
  - Pathogen replicates inside vector and transmitted to hosts by excretion or feeding
  - Lice, fleas, mosquitoes, true bugs, ticks

(AKA blood sucking pests passing disease to US!!)



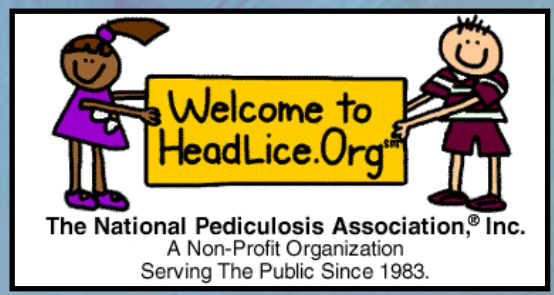
Lice

- Permanent ectoparasites of birds, mammals
- 3,000 species; wingless
  - Chewing lice attach to hair and feathers
  - Sucking lice are blood feeders
  - Specialized legs adapted for grasping
  - Host grooming causes mortality



Louse-borne disease

- Pediculosis in humans – head, body, pubic
  - Poor hygiene and sanitary conditions
  - Close personal contact
  - Severe itching; scarred, hardened skin
  - Difficult to control, reinfestation is likely
- Typhus, trench fever, relapsing fever

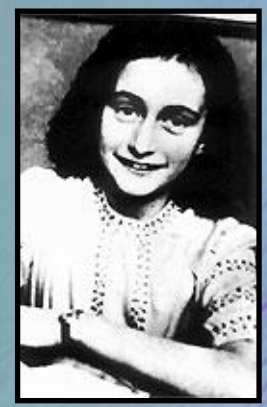


Fleas

- Ectoparasite of birds, mammals
- 2,500 species; piercing sucking mouthparts
- Wingless, bilaterally flattened
- Excellent jumping hind legs

Flea-borne disease

- Attracted to CO_2, body heat
- Can be host specific
  - Range of host "neediness"
- Black Death: Bubonic Plague
  - Oriental flea carried by black rats
  - Killed 1/3 of Europeans (1347 – 1352)!
- Typhus, tapeworms



(1929-1945)

Lice and flea control

- Vacuum and discard bag
- Wash clothes, bedding
- Treat fabrics
  - Use IGR's: methoprene or pyriproxyfen with permethrin and pyrethrins
- Treat animals
  - fipronil (Frontline) or imidacloprid (Advantage) and comb hair

Mosquitoes

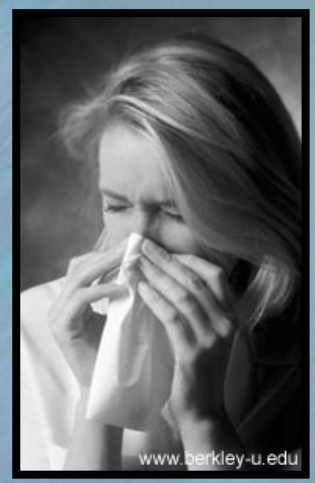
- All mosquitoes need water to lay eggs
- Only females require blood
- Attracted to perspiration, warmth, body odor, carbon dioxide, and light
- Many can acquire pathogens, but few can vector disease efficiently
- West Nile Virus in Utah
  - 2006: 158 cases/5 deaths

Symptoms of WNV

- None
  - 80% of people will not show any symptoms
  - Most healthy people will produce antibodies to fight against infection

Symptoms of WNV

- Mild
  - 20% of people have flu-like symptoms
  - Fever, headache, vomiting, skin rash
  - Symptoms last a few days in most people



Symptoms of WNV

- Severe (<1%)
  - Less than 1% of people get seriously ill and require hospitalization
  - High fever, headache, tremors, vision loss, coma, paralysis, encephalitis, meningitis
  - Symptoms last several weeks
  - Neurological effects can be permanent
  - People over 50 are at the most risk

Diagnoses and Treatment of WNV

- Antibody blood test confirmation
- For mild symptoms:
  - Rest, fluids, Advil, etc.
- For severe symptoms:
  - IV fluids and nutrition
  - Respiratory support
  - Prevention of secondary infections

Prevention around the home…

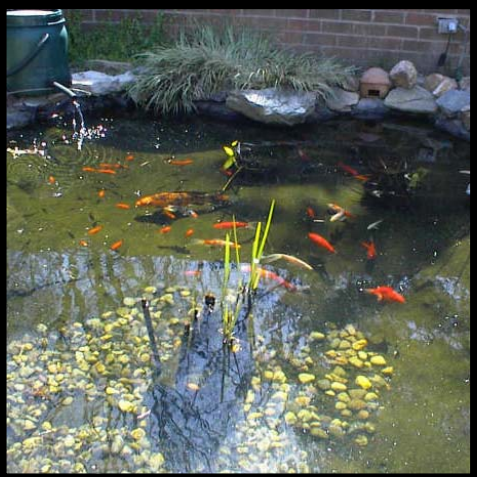
Eliminate standing water

- Clean gutters
- Remove spare tires and equipment
- Make holes in garbage cans and recycling bins
- Use landscaping to avoid pooling water

Prevention around the home…

Keep standing water fresh

- Aerate fish and ornamental ponds
- Change bird baths and pet bowls
- Chlorinate pools and keep covers dry
- Turn over wading pools when not in use
- Keep watering cans and pots clean and dry




Mosquito-proof your home

- Keep doors and windows closed
- Repair tent and screens tears
- Insulate window AC's, fans
- Avoid peak feeding times
- Wear pants and long sleeves
- Use repellent!

Mosquito control programs

- Integrated Mosquito Management (IMM)
  - Surveillance and targeted application
  - Low risk to animals and environment
- Adults
  - Ultra low volume (ULV) application
  - Ex., malathion, permethrin
- Larvae
  - Pellet, granule or film/oil application
  - Ex., methoprene, temephos, B.t.i.

Get more information

- Fact sheets, slideshows, photo gallery
  - utahpests.usu.edu
  - www.ces.ncsu.edu/depts/ent/notes/Urban/house.htm
  - vector.ifas.ufl.edu/manual.htm
- Current legal pesticides in UT
  - www.kellysolutions.com/UT/pesticideindex.htm
- Bed Bugs
  - www.ipmctoc.umn.edu/html/pmp.htm
- West Nile Virus in UT:
  - health.utah.gov/epi/diseases/wnv/index1.htm

QUESTIONS??

Thank you for your attention!

Erin Hodgson, Extension Entomologist
Utah State University

435.797.5689 or erin@biology.usu.edu