Household and Nuisance Pests

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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
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
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
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
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 imidaclorpid (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!

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