Yellowjackets and Other Stinging Insects

Nebraska Extension

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Types of Stinging Insects

- Yellowjacket
- Paper Wasp
- Bumble Bee
- Honey Bee
- Mud Dauber Wasp
- Cicada Killer

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Stinging Insect Behavior

- Social
  - Live in colonies, each individual responsible for helping to maintain the success of the group
  - Caste system—workers and reproductives
    - Ex. Yellowjackets, Paper Wasps, Honey and Bumble Bees
- Solitary
  - Live and hunt alone
    - Ex. Cicada Killers, Mud Dauber Wasps, Sweat bees

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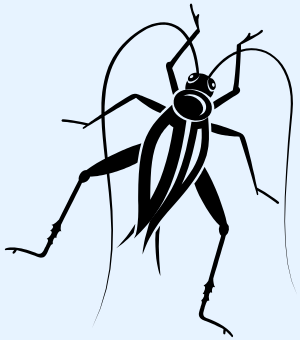
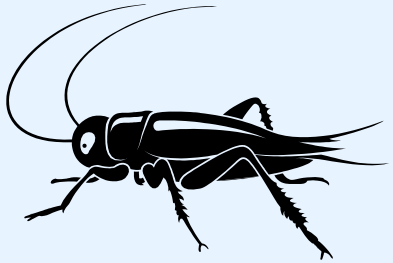


Stinging Insect Behavior



- Parasitic
  - Lay eggs in caterpillars and other insects; beneficial for biological control
    - ✓Ex. Cicada Killers, Cricket Hunters

Cricket Hunter

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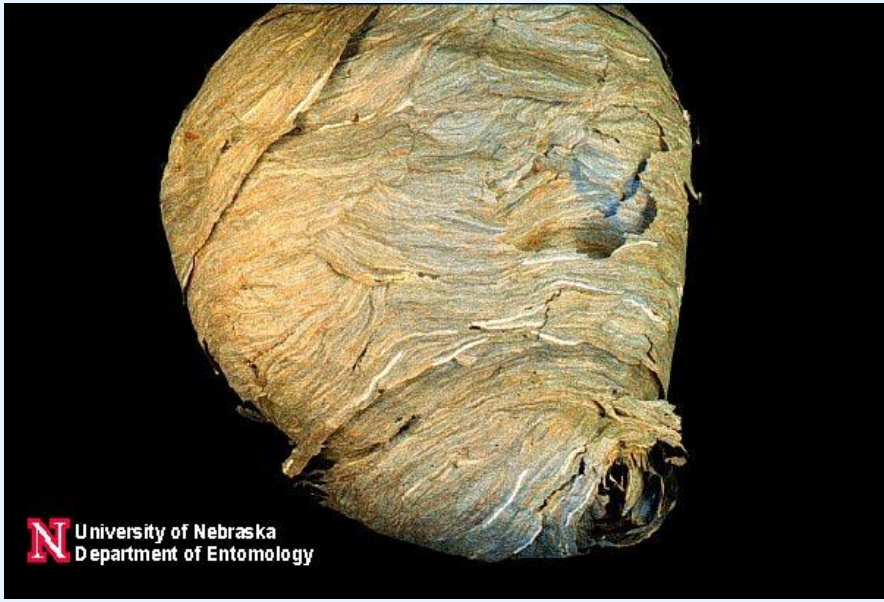
Stinging Insect Habitat

- Aerial Nesting
  - Eaves, overhangs, garages
- Cavity Dwelling
  - Cracks and crevices, under steps, wall voids
- Ground Dwelling
  - Dig holes in the ground



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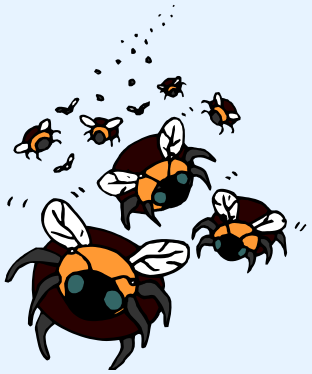

Social Stinging Insects

- Yellowjackets
- Paper Wasps
- Bumble Bees
- Honey Bees

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Yellowjackets [*Vespula*]

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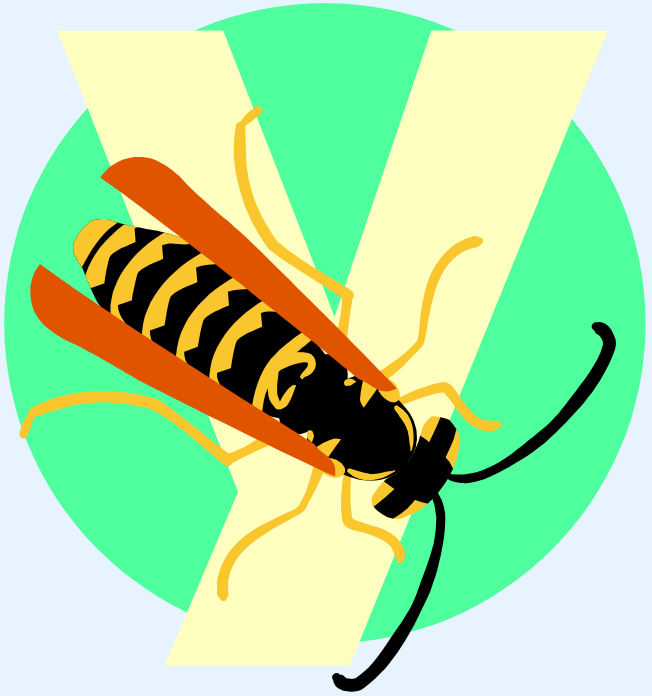
Yellowjackets

- About $\frac{3}{4}$ inch long
- Diet: insects, spiders, meats, sweets, variety of other foods depending on time of year
- Types
  - Aerial
  - Eastern
  - German



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Yellowjackets are not Honey Bees

- Yellowjackets can sting repeatedly, honey bees only once (barbed stinger)
- Honey Bees appear "fuzzier"
- Yellowjackets are more aggressive

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Yellowjacket Queen

- Late season (fall or winter) Queens overwinter and emerge to begin new nests/colonies in the spring. Queen raises first brood herself, then new workers take over maintenance of the nest

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Spring Feeding Habits

- April - July: prefer protein and fat food sources
  - Insects, meat, fish, oils, etc.


Photo: University of Nebraska–Lincoln

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Colony Grows Quickly

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Nest Expands :
2 cubic feet +

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Aggressive Habits in Late Summer

- Common around trash bins
- Nuisance at picnics and other gatherings, where they fly around people and land on food and beverages
  - Especially attracted to fruit and sweet carbohydrates like soda

Food Habits Change

Photo: Jack Kelly Clark, courtesy University of California Statewide IPM Program

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Yellowjacket Integrated Pest Management (IPM)

- Reduce Food Sources
- Habitat Modifications – eliminate or reduce potential food/shelter opportunities
- Trapping
- Insecticides

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Yellowjacket IPM

- Reduce Food sources
  - Keep tightly sealed lids on food items
  - Keep trash bins clean and tightly closed
  - Keep outdoor eating areas clean

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Yellowjacket IPM

- Habitat Modification
  - Turn compost piles regularly to reduce scavenging
  - Keep dumpsters clean and lids closed to eliminate food and reduce potential shelter
  - Repair damaged windows/screens and caulk holes that could offer entrance to buildings

Keep lids closed and dumpsters clean; repair or replace warped lids

Photo: University of Nebraska–Lincoln

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Yellowjacket IPM: April – July Trapping

- **Attractants / Baits**
  - Maggots, Mealworms
  - Fish, Meat
  - N-Methyl-Valerate
- **Timing**
  - Dawn to Dusk
- **Trap Placement**
  - In Full Sun
  - At least 10 –20 ft. from Nest
  - Near Gardens
  - Near locations with Soft Wood or Mud (used for nest building)

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Yellowjacket IPM: July - September Trapping

- **Attractants / Baits**
  - Sugar (liquid)
  - Overripe Fruit
  - Juice / Pop
- **Timing**
  - 1-2 hr. pre-Dawn
  - 1-2 hr. post-Dusk
- **Trap Placement**
  - In Partial sun
  - Away from People
  - At least 20-50 ft. from Nest
  - Near Garbage
  - Out of Reach

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Yellowjacket IPM

Photo: Jack Kelly Clark, courtesy University of California Statewide IPM Program

- Trapping
  - Commercially available trap

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Yellowjacket IPM

- Trapping
  - 2 liter bottle trap
    - ✓ Bait with tuna, canned meats, pet food, sweet treats, or insecticide treated materials (depending upon season)

Drawing: University of Nebraska–Lincoln

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Yellowjacket IPM: Insecticides

- Keep out of reach of children and pets
- Safety Factors
  - Wear light-colored protective clothing
  - Work after dark, use red lighting if available
  - **Always read and follow the label!**
- Types:
  - Aerosols, Liquids, and Dusts
- Effectiveness
  - Dusts are most effective for ground or cavity nests because the dust can be moved by individual wasps to the entire colony

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Yellowjacket IPM: Insecticides

- Aerial nests
  - Spray or dust after dark
  - Use liquids, aerosols, or dusts
- Ground nests
  - Dust after dark
  - Use liquid or dust (preferred)
  - Apply insecticide and seal opening
- Cavity nests
  - Use dust – after dark is best
  - Do not plug entrance or wasps may find alternative escape routes, such as inside the structure

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Paper Wasps

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Paper Wasps

- Approximately $\frac{3}{4}$-1 inch long
- Accidental invader, may fly into structure if nest is nearby
- Umbrella shaped nests found in overhangs, attics, barns, trees
- Not overly aggressive
- Treat nest with insecticide
  - Aerosol or liquid sprayed directly onto the nest after dark

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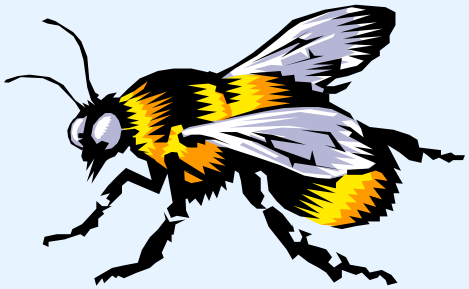
Bumble Bees



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Bumble Bees

- About 1 inch long, stout body
- Not overly aggressive unless harassed
- Often builds nests in areas that may be problematic (sidewalks, foundations)

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Bumble Bee IPM

- Bumble bees are important pollinators, best to leave them alone
- If concerned about stings, avoid those areas where bees are collecting pollen
- Locate and treat nests with spray or dust insecticides if possible

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Honey Bees

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Honey Bees

- About 2/3 inch long
- Occasionally build nests in wall voids, soffits, and attics
  - Difficult to remove, must remove nest, comb, honey, and brood
  - Consult beekeeper or pest management professional

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Honey Bee IPM

- Prevent invasion by sealing cracks and crevices and other routes of entry
- Use dust or spray insecticides:
  - In evening or after dark
  - When temps are cooler
  - Pyrethrins are especially effective
  - Do not eat honey or combs from colonies sprayed with insecticide
- Honey Bees are beneficial pollinators, so prevention is better than treatment

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Honey Bee Swarms

Photo: Phil Solderbeck, K-State University, Department of Entomology

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Honey Bee Swarms

- Generally not a threat, bees not in defensive mode because they do not have young or food to protect
- Often gather in an area for several days, are scouting for possible nest site in the vicinity

Honey Bee Swarm IPM

- Beekeeper should be called to capture or get rid of swarm
- Use soapy water and spray swarm, bees are less defensive and easier to collect.
- Insecticides are not recommended as bees become defensive

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Solitary Stinging Insects

Photo: University of Nebraska–Lincoln

Yellow and Black Mud Dauber Wasp

- Mud Dauber Wasp
- Cicada Killer

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Mud Dauber Wasp

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Mud Dauber Wasp

- About $\frac{3}{4}$-1 inch long
- Thread-waisted
- Two common Nebraska species
  - Blue Mud Dauber wasp
  - Yellow and Black Mud Dauber Wasp
- Primary Diet--spiders

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Mud Dauber Wasp

- Not overly aggressive (do not defend nest)
- Nests made of mud or clay, attached to walls, ceilings, overhangs, etc.
- Nests should be removed / destroyed before emergence holes are present - no danger of stings at this time
- During emergence, insecticides may be needed to control adult wasps
- After emergence, no controls are needed

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Mud Dauber Wasp Nest

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Cicada Killers

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Cicada Killers

- Approximately 1-2 inches, largest wasp in Nebraska
- Solitary
- Not overly aggressive
- Live underground
  - Burrows found near driveways/sidewalks

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Cicada Killers

- Capture and paralyze a cicada, then lay an egg on it. Cicada killer larva feeds on cicada after hatching
- Treatment usually unnecessary, but insecticides can be applied if the wasps become problematic

Periodical Cicada

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Other Stinging Insects Found in Nebraska

- Cricket Hunter
  - Solitary blue/black wasp captures crickets for food
  - Also uses crickets for egg laying in the same way that Cicada Killers use cicadas
- Velvet Ant (Cow Killer)
  - Wingless female inflicts painful sting if picked up; looks like a large, furry ant, but is really a wasp

Velvet Ant (Cow Killer)

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Stings

- Honey Bees
  - Only sting once, results in stinger and venom tearing from bee's body
    - ✓Remove stinger as promptly as possible to prevent more venom from pumping into wound
- Wasps and Bumble Bees
  - Can sting repeatedly, so try to stay calm and not agitate wasp or bee further

Stings


Photo: University of Nebraska–Lincoln

- Common Reactions to venom
  - Moderate to severe pain at site of sting
  - Localized swelling and redness
  - Sometimes mild headache and fever
  - Treat with soapy water and antiseptic; ice, meat tenderizer, or baking soda paste can be applied to relieve pain
  - Over the counter pain relief and antihistamine medications

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Stings

- Allergic Reactions to venom
  - Anaphylactic—severe swelling, hives, difficulty breathing, nausea, possible unconsciousness, and death
  - Requires immediate attention! Consult a physician or emergency personnel
    - ✓Epinephrine shot—known sufferers should carry one with them when in areas where stinging insects may be present
    - ✓Desensitization program (allergy shots) may help

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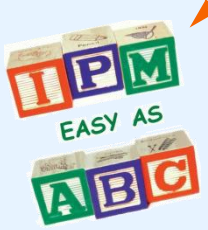

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  - Nebraska Extension in Lancaster County

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