

Stinging insects such as yellowjackets, bees, hornets and wasps are mostly beneficial insects but their stings can be painful and potentially life-threatening to those allergic to their venom. The risk of stings can be reduced through the use of Integrated Pest Management (IPM)—smart, sensible practices that include landscape management, good sanitation practices and education.

Yellowjackets Pose the Greatest Risk

- Among stinging insects, yellowjackets are the most concerning. They may aggressively defend their nests and can sting multiple times when threatened. Sometimes just coming near a nest, especially if it has been previously disturbed, can provoke an attack.
- Nests may be hidden underground, inside playground structures or among branches of trees and shrubs.
- Yellowjackets can sting repeatedly, unlike honeybees, which sting just once.
- Although yellowjacket colonies live for just one season, they can grow to reach 4,000-5,000 individuals by fall.



Photo: Johnny N. Dell, Bugwood.org

Use Integrated Pest Management

School nurses can play a key role in preventing yellowjacket stings by advocating for integrated pest management (IPM) policies and practices—sensible, evidence-based methods to make school grounds less attractive to yellowjackets and promote safety. The nurse and/or safety committee may work with school facilities, nutrition and athletics programs to establish policies and practices for maintenance, outdoor food use, and sanitation to discourage stinging insect activity and nest-building. Establish clear communication procedures for reporting yellowjacket activity and pest-friendly conditions on school grounds. Use signage and education to support adherence to pest-prevention policies and promote effective pest-management action when needed.

Prevent Stings

Instruct students and staff to:

- Report nests located where they are likely to be disturbed. Buzzing and concentrated activity (such as yellowjackets flying in and out of an opening) may be the only evidence of a concealed nest.
- Avoid swatting and squashing yellowjackets. When one is squashed, a chemical (pheromone) is released that attracts and incites other nearby wasps.
- Remain calm and still if a single insect is flying around. Swatting at it may cause it to sting. However, if attacked by a number of stinging insects at once cover face with hands and run. Go indoors or to a shady area if possible.¹

- Avoid wearing bright colors or floral patterns. Avoid scented personal care products.
- Inspect for nests and concentrated yellowjacket activity before mowing, moving stored equipment, or opening sheds and utility boxes.
- Inspect school buildings and grounds regularly for nests and evidence of stinging insect activity. Destroy nests located where human encounters are likely. Beginning in spring, physically remove start-up nests twice monthly to prevent large nests in the fall.
- Remove or cover food outdoors. Yellowjackets tend to forage for protein and sweets such as sugary beverages and fallen tree fruits.
- Yellowjacket container traps may reduce number of late-season wasps around concession stands.
- Keep garbage containers closed, emptied frequently, and cleaned regularly. Place, don't toss, garbage bags into dumpsters to avoid torn trash bags and garbage spills that attract stinging insects.

Be Prepared for Stings

Develop a sting response plan in advance and educate students and staff what to do in the event of a sting incident.

- Localized pain, itching and swelling are normal responses to stings. Follow first aid protocols for stings: apply a cool compress to reduce swelling and itchiness, wash the site with soap and water, observe for signs of an allergic reaction.²
- Death can occur if the victim suffers a severe and/or systemic allergic reaction (anaphylaxis) to the insect venom. If either occurs, follow emergency response protocols.
- Symptoms of allergic reaction include difficulty breathing, swelling of the lips, eyelids or throat, dizziness, faintness or confusion, rapid heartbeat, hives, nausea, cramps or vomiting².
- Train all staff to recognize signs of allergic reaction and to follow school's anaphylaxis/emergency response protocol.
- Keep detailed records of sting incidents.



¹Bees, Wasps and Hornets. National Institute for Occupational Health and Safety. <https://www.cdc.gov/niosh/topics/insects/beeswasphornets.html>

²Insect Bites and Stings: First Aid. Mayo Clinic. <https://www.mayoclinic.org/first-aid/first-aid-insect-bites/basics/art-20056593>

Seal Entryways and Nest-Building Sites

- Report damaged or missing window screens to maintenance staff
- Report holes and gaps in/under structural elements of buildings and playgrounds so maintenance staff can seal them to prevent insects from building their nests in areas frequented by people. End-caps should be in place to prevent yellowjackets from constructing nests inside the hollow top rail of chain-link fences.

To Spray or Not to Spray

- Insecticides can be a part of the integrated pest management toolbox but must be used safely and according to label directions and state regulations. Read and follow all instructions carefully.
- Nests located where they can be avoided do not need to be treated. Very small nests can often be knocked down with a pole or steam of water.
- For visible nests posing a risk of stings, apply insecticide directly into the opening of the nest. Treatment of a concealed nest, especially one in a wall or other structural element

ment of a building is often best left to a licensed professional.

- Treat nests in the evening or very early morning when students are not present and insects are inside the nest. Stinging insects are slower at cooler temperatures, too. Do not spray when it is windy.
- Wear appropriate personal protective equipment (eye protection, long sleeves, gloves) as specified on the pesticide label. Wear protective clothing to protect against stings.
- Discuss with your pest management professional non-pesticide and least risk alternatives such as vacuuming or bagging the nest.
- Stinging insect colonies are killed by freezing temperatures in fall and winter and their nests are not reused the following season. These empty nests can be removed.



2-year southern yellow jacket nest, Photo: Terry Prouty, Wikipedia commons

Response Action Chart

Stinging Insects Posing Risk of Stings on School Grounds

