



# Yellowjackets and Other Wasps

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**Y**ellowjackets, paper wasps and mud daubers are winged black and yellow, or black and white, insects. Most are social, living in a nest, or colony, and caring for their queen and her young. It is difficult to tell one species of wasp from another. They are sometimes confused with similar looking bees and flies. Most wasps do not bother humans. This document covers Integrated Pest Management (IPM) techniques for wasp control. Bees are generally not a problem unless they build a nest in a school building.



## How to tell a wasp from a bee.

**Wasps** are thinner, can be aggressive, and interested in food and garbage. **Bees** are generally plumper, mild mannered and interested in flowers, not your lunch or garbage can. School personnel need to be able to distinguish wasps from bees and need to be aware of the preferred nesting locations of different species of wasp.

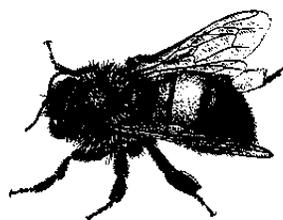
The chief pollinators of our food crops are domestic **honeybees** which have been hard hit in recent years by a combination of parasitic mites, disease, starvation caused by severe weather, and pesticide poisoning. Anyone attempting to control wasps with insecticides must make certain that bees will not contact the poisons.

### Western Yellowjacket



Looks hairless compared to a bee.

### Honey Bees



Large, robust and furry compared to a wasp.

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# Facts about yellowjackets and other wasps

## Hazards of wasps

Yellowjackets and other wasps are feared because they can sting humans. Unlike bees, female wasps can sting repeatedly. Most species of wasp will not sting unless provoked by a perceived threat to themselves or to their nest. Yellowjackets are an exception. They are aggressive by nature and become especially persistent when foraging for limited food at the end of the summer.

Normal reactions to stings includes pain, redness, itching and swelling at the sting site. Ice, table salt, and products like Sting Kill® are helpful in managing the symptoms. Symptoms can occur immediately after a sting, or may take longer to appear. They last for several hours.

People who are **hypersensitive** have some or all of these symptoms:

- ☑ **Difficulty breathing**, caused by swelling of the air passages. Shortness of breath, wheezing and a sensation of tightness in the chest are symptoms.
- ☑ **Faintness** and other shock symptoms.

**These symptoms are serious and can result in death.**

- ☑ **Nausea, headache** and **chest** or **abdominal** pain can also be symptoms of a hypersensitive reaction to a sting.

All school staff should know how to contact aid if someone has a hyper-sensitive reaction to a sting or if someone receives multiple stings. Most stings happen in the fall and late summer when the yellowjackets are most aggressive and competitive about foraging for food.

## Benefits of wasps

Wasps are actually beneficial insects for humans and the environment. They are one of the major natural scavengers, and they eat insects such as flies and caterpillars that are often considered pests to humans. They should be left alone if they are in a location where they are not bothering people. Some wasps pollinate plants and crops, but most do not.

## Wasp food

### Yellowjackets

Yellowjackets aggressively forage for protein foods, such as meat, earlier in the summer. They prefer sweets (ripe fruit, plant nectar or other sugar solutions) as fall approaches. Worker wasps catch flies and caterpillars to feed the young. A primary area of conflict with humans is where food or garbage attracts scavenging species. Wasps drink water and will occasionally land on humans to drink sweat from their skin.

### Paper wasps

Paper wasps gather insects to feed their larvae but drink flower nectar themselves.

### Mud dauber wasps

Mud dauber wasps prey on insects to provision their nests.

## Attractive nest locations

Yellowjackets and other wasps build different kinds of nests in different locations. The type of nest built is one of the main keys to identification. The queen and then the workers create the paste to make the paper for nests by chewing wood and plant fibers and mixing it with saliva. Attacks, either intentional or accidental, on the nest will trigger a mass defense in all wasps.

Wasp	Nest Material	Nest Location
Umbrella or paper wasps	A paper comb without a covering. Looks like an umbrella.	Under eaves and overhangs. Often near doorways.
Western yellowjackets, common yellowjackets, blackjacket and the German yellowjacket (since 1980).	Paper but not visible since it is underground.	Underground in small holes or rodent burrows. They can become very large. They may be in wall voids and attics or under beauty bark, shrubs, rocks or logs for protection.
Aerial yellow jackets	Paper	Under eaves, overhangs and in hollow trees. Rarely in attics and wall voids.
Baldfaced hornets (actually a yellowjacket)	Paper	Hanging high in a tree or a building, or in low shrubs or hedges.
Mud daubers	Mud	Under eaves and in attics.

## The wasp life cycle and the school year

### Late Summer or Fall

School starts. Yellowjacket and paper wasps colonies are at their maximum size. Yellowjacket workers are most aggressive about searching for food. New wasp reproductives (kings and queens) leave the nest and mate. The new queens look for a sheltered place (such as a school building) to hibernate for the winter

### Winter

Wasps are no longer a problem **except for the German yellowjacket** which is new to the state and more tolerant to cold. German yellowjackets are active during mild winters. When the weather gets cold, yellowjacket and paper wasp nests are deserted. The original queen, males and workers die.

### Spring

Queens start their own nests in the spring when the weather warms up. After the first brood of workers hatches, the queen devotes her time to egg laying, while the workers expand the nest, forage for food and care for the eggs. School workers can destroy new nests while they are small and control garbage and food sources - preventing problems in the fall.

Spring freezes and extended periods of wet cool weather can kill the new colonies and decrease the number of wasps for that year.

### Summer

Queens make more workers and the nest expands, but toward the end of the summer they lay eggs to create new kings and queens (reproductives) The new reproductives leave the nest and mate. The workers become more aggressive about finding food.

## Controlling yellowjackets and other wasps

The keys to successful control of yellowjackets and other wasps are:

- periodic monitoring to detect wasp activity, new nests on the school grounds, and
- attractive food sources that will draw wasps.
- destruction of new wasp nests in hazardous locations while they are in a developing stage - before they become a big problem.

# Methods in Integrated Pest Management: Control of Yellowjackets and Other Wasps

## Techniques for School Personnel

### Identify potential wasp problems

Knowledge of wasp behavior is the best defense for staff and students to prevent stings.

### **Training on safe behavior around wasps should be provided to staff and students.**

#### **Safety for building and teaching staff and students**

- Check for wasps before drinking from an open pop or juice can.
- Place garbage all the way into garbage cans and close the lid.
- Don't allow children to take shoes off to play on the grass.
- Bees and wasps are attracted to bright clothing, perfumes and scented soaps.
- Do not throw rocks at wasp nests. Besides the danger to the students, this will make the wasps more likely to attack the next person that disturbs them.
- Learn to recognize a hypersensitive sting reaction from a normal reaction.
- If drinks from the cafeteria are allowed to be taken outside, have the cafeteria put lids on all of them; it does not matter if the drink is pop, juice, milk or water.
- Safe behavior around yellowjackets: Move slowly and do not swat or crush because some crushed yellowjacket species release chemicals that call others to attack. If a yellow jacket lands on you or your food try to wait for it to fly away.

**Safety measures for grounds staff are the same as for other staff and students, plus:**

- ☑ Careful behavior when mowing or working outside in the late summer, especially in brush or tall grass.

**Grounds staff should learn how to distinguish a wasp from a bee.**

Honeybees, bumblebees and others are not likely to cause disruption at a school unless they are nesting near or on a building, or a swarm has settled on the property. Bees should be removed and should never be killed because they are vital for pollination of many plants and crops. Beneficial domestic and some wild bees have nearly become extinct due to a recent virus.

- ☑ If you have a bee problem, call the local fire department and ask for a beekeeper on their swarm control list. The local police station or WSU extension office may have a list as well. Beekeepers on the list will be very glad to come and remove the bees.

- ☑ **Do not spray anything on the bees** or the beekeeper cannot take them.

**Find foraging and nest sites before they get to be a problem.**

Start monitoring for wasp problems in the spring (May usually, but March if the weather is mild). When you walk around the building and school grounds monitor wasp activity levels. There will always be some individual foraging wasps flying around the school grounds from the neighborhood.

Areas that develop into problems have a concentration of wasps attracted by either a food source or a nest:

- ☑ Wasps are attracted by food or garbage smells. Likely sites to check include:

- Doorways to kitchens or cafeterias
- Outdoor eating areas
- Landscape trees or shrubs with fruit
- Garbage cans and dumpsters
- Compost

- ☑ Nests near or on the building are much easier to deal with in the spring when they are small. If the nest is not easily accessible, or you are not sure of its size or location, professional help from a pest control company is necessary. **In and on buildings, look for nests:**

- Under eaves and overhangs of buildings.

- Inside attics and chimneys.
  - Inside hollow places such as wall voids.
- ☑ Outside the buildings, look for nests in these places:
- Aerial nests hanging high in a tree or a building, or in low shrubs or hedges.
  - Ground nests in small holes or abandoned rodent burrows. They can become very large and may be under shrubs, between rocks in a rockery or under landscaping logs for protection.
  - Inside woodpiles or decayed tree trunks.

Determine if the wasp or bee activity requires action. Wasp nest sites are not necessarily problem sites if the wasp activity is off the school grounds and does not conflict with human use of the school.

## Habitat alterations that make your school unattractive to wasps

Correction of the conditions that attract or harbor wasps in your building is the best insurance to keep them from causing future problems.

### **Clean up the wasps' food sources**

#### **Kitchens and Cafeterias**

- ☑ Exclude wasps by placing screens on doors, windows and vents. Caulk holes in the screens and gaps between the screens and the windows.
- ☑ Move garbage cans away from the doors so wasps do not follow the scent trails into buildings.

#### **Outdoor eating areas**

- ☑ Restrict outside eating if necessary, especially in the early fall.

#### **Landscape trees or shrubs with fruit**

- ☑ Pick up any fallen fruit from beneath landscape trees or shrubs.

#### **Garbage cans and dumpsters**

- ☑ Empty garbage cans and dumpsters before they are too full to close properly.
- ☑ Use garbage cans with self-closing lids.
- ☑ Clean garbage cans periodically to remove any food debris or smells.

- ☑ Use disposable liners and close them with a twist tie when they are put into the dumpster.
- ☑ Move garbage cans, dumpsters and recycling areas downwind of, and away from, the doors to the school.

### **Compost**

- ☑ Landscape wastes should be kept separate from food wastes to avoid attracting pests. See the brochure, “Easy Composting of Yard Waste” from Seattle Urban Tilth for specifics and advice on keeping animals from nesting in your landscape compost.
- ☑ Food wastes should be composted in a “Green Cone” or worm bin to keep pests out. See the attached brochure, “Easy Composting of Food Waste” from Seattle Urban Tilth for instructions on building a rodent proof or resistant worm bin.

### **Make repairs to the building**

Building maintenance helps to keep wasp queens from coming inside in the fall to hibernate inside the building.

- ☑ Screen all windows that open and all attic and crawl space vents.
- ☑ Caulk gaps around windows and repair holes in screens.

**Note - Don't pour gasoline** on underground nests and light them! Why not?

- ☑ **It's ILLEGAL!!** It's a fire hazard. It contaminates the soil for a long time and kills vegetation.
- ☑ **It's dangerous!** Swarms of angry wasps can escape. The survivors will be more aggressive to the next adult (or child) that comes near the nest.

## How to kill and remove wasps.

### **Most effective and non-toxic methods**

#### **Trapping with a food bait**

Trapping can significantly reduce yellow jacket numbers around outdoor eating areas or sports fields. Traps are good for dealing with problems where the wasps are coming in from off-site or where they are occasional pests.

- ☑ Use either commercial or homemade traps that let wasps in but won't let them back out.

- ☑ Use protein baits (fresh cat food or fresh tuna are best to avoid attracting bees).
- ☑ Wasps like fresh food, so the bait needs to be replaced frequently

Place the baited traps at a good distance to avoid attracting wasps into the area you want to protect. Putting them at a perimeter distance also helps to stop the wasps before they reach the attractive human food.

### **Removing aerial nests**

- ☑ If the wasps have been killed by winter, simply knock the nest down. It will become compost.
- ☑ Be **certain that all the wasps are dead** before you climb up on a ladder to investigate. There is a high risk of falls from the ladder or stings if the wasps are not all dead.

## **Techniques for the Pest Control Professional**

These techniques require either special equipment, biological knowledge of the pest or special skills which school personnel are not likely to have. It can be very dangerous to attempt to remove a nest of wasps while perched on a ladder!

 How to kill and remove wasps.

### **Most effective and non-toxic methods:**

#### **Removing aerial nests**

It is better to leave wasps in ground or aerial nests near the school to professionals particularly if the nests must be removed during daylight hours or if it is difficult to find or access.

- ☑ If the wasps have been killed by chemicals, the nest should be put in a plastic bag in the garbage. The dead wasps need to be swept up as well if chemicals have been used. Some dogs and cats like to eat wasps and bees(dead or alive.) Poisoned wasps are toxic enough to kill an animal that eats them.
- ☑ Be **certain that all the wasps are dead** before you climb

up on a ladder to investigate. There is a high risk of falls from the ladder or stings if the wasps are not all dead.

### **Removing nests in walls**

Nests in building spaces such as walls may be many feet from the entrance. Removal is difficult and dangerous unless the people are experienced and familiar with wasps.

- ☑ Hire a professional pest control operator who can drill and inject insecticides to kill the wasps before the nest is removed.
  
- ☑ Make sure the nest is removed once the wasps are dead to avoid further pest problems caused by the dead wasps becoming food for other pests.

### **Most effective and lower risk toxic methods**

#### **Chemical baiting**

Attractant baits can be mixed with a labeled pesticide in a device that is placed very near a nest. It is not a trap. Wasps and yellowjackets will take the bait back to their nest and feed their queen and other hive members. It may take weeks to eliminate a nest. Chemical usage is limited because wasps are the only organisms exposed to the chemicals. Only pest control professionals have access to these baits.

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## Related Publications

In addition to this fact sheet, staff working on the Integrated Pest Management in Schools Project have created eight other documents that describe the least toxic methods for controlling pests in a school setting. Call (360) 407-7472 to request any of the documents listed below:

<b><u>Publication Number</u></b>	<b><u>Title</u></b>
#97-420	<i>Integrated Pest Management in Schools Project: Carpenter Ants</i>
#97-421	<i>Integrated Pest Management in Schools Project: Fleas</i>
#97-422	<i>Integrated Pest Management in Schools Project: Flies</i>
#97-423	<i>Integrated Pest Management in Schools Project: Head Lice</i>
#97-424	<i>Integrated Pest Management in Schools Project: Cockroaches</i>
#97-425	<i>Integrated Pest Management in Schools Project: Rodents</i>
#97-426	<i>Integrated Pest Management in Schools Project: Termites</i>
#97-428	<i>Integrated Pest Management in Schools Project: Nuisance Ants</i>

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