



FactSheet

Extension

Ohio State University Extension Fact Sheet

Entomology

1991 Kenny Road, Columbus, OH 43210-1000

Black Widow Spider

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Susan C. Jones, Ph.D.

Assistant Professor of Entomology

Extension Specialist, Household & Structural Pests

Species in the genus *Latrodectus* are commonly known as widow spiders. A number of different species of widow spiders occur in the United States. The black widow spider (*L. mactans*) and the northern black widow spider (*L. variolus*) occur in Ohio, although both are relatively uncommon, especially in the northern half of the state. Other species of widow spiders occasionally arrive in shipments of household goods.

The black widow spider has a potent neurotoxic venom and is considered the most venomous spider in North America. However, the female injects such a small dose of venom that it rarely causes death. Reports indicate human mortality at well less than 1% from black widow spider bites.

Identification

The adult female black widow spider has a shiny, jet black, spherical abdomen with two connected red triangles on the underside that form a characteristic hourglass marking. Note, however, that the hourglass color may range from yellowish to various shades of orange or red. Adult females are about 1/2-inch long, not including the legs (about 1-1/2 inches when legs are spread). Adult males are harmless, about half the female's size, with smaller bodies and longer legs. The male's abdomen usually has red spots along the upper midline



Female black widow spider with egg sac.

Class: Arachnida

Order: Araneae

Family: Theridiidae

Common Name	Scientific Name
black widow spider	<i>Latrodectus mactans</i>

and white lines or bars radiating out to the sides. Newly hatched spiderlings are predominately white or yellowish-white, gradually acquiring more black and varying amounts of red and white with each molt. Juveniles of both sexes resemble the male and are harmless.

Adult female northern black widow spiders are shiny black or brown-black with a row of red spots on the top of the abdomen along the midline. Two reddish triangles resembling a split hourglass are present on the underside of the abdomen.

Life Cycle and Habits

Mating takes place in spring or summer. A common misconception is that the female usually consumes the male after mating. Such behavior rarely occurs. The female lays eggs in a silken sac that is globular shaped and about 1/3 to 1/2-inch diameter. Sacs are white at first, later turning tan or gray. Each sac contains 25 to 250 eggs, and several egg sacs may be produced over the course of a summer. The egg sacs are suspended in the web and guarded by the female. The egg incubation period usually lasts about 4 weeks. The spiderlings hatch and molt (shed their skin) one time while inside the egg sac. They then disperse by ballooning—extruding silk threads and being transported by air currents. Their growth to maturity requires 2 to 4 months depending on the availability of prey. Spiderlings molt several times before reaching maturity.

The black widow spider is a cobweb builder whose silk is very strong. The female constructs a web of crisscrossed silk threads with no recognizable pattern and with a dense area of silk, usually to one side, that serves as the spider's daytime retreat. At night, the female hangs belly upward in the center of the web. She does not leave her hidden web voluntarily. The web typically is situated near the ground in a dark, sheltered site. Webs often are one foot in diameter.

The web serves to trap the spider's food, which includes a variety of insects (cockroaches and beetles) and other arthropods. Outdoors, black widow spider webs are usually built in woodpiles, rubble piles, under stones, in hollow stumps, and in rodent burrows. These spiders commonly occur in outbuildings such as privies, sheds, and garages. Indoors, they prefer undisturbed, cluttered areas in basements and crawl spaces.

The northern black widow spider is similar to the black widow except its habitat is marginal land with sparse vegetation. It is found in stumps, hollow logs, and piles of debris, and only rarely indoors.

Bite Symptoms

The severity of an individual's reaction to the black widow spider bite depends on the area of the body bitten, amount of venom injected, and their sensitivity to the venom. The venom travels in the bloodstream throughout the body and acts on the nervous system, causing varying degrees of pain. Some people report very intense pain. There typically is no necrosis (sloughing) of tissues and no conspicuous swelling.

The bite of a black widow spider initially may go unnoticed, but some people report a short stabbing pain. At first, there may be slight local swelling and two faint red spots, which are puncture points from the fangs. Pain soon begins and usually progresses from the bite site to finally localize in the abdomen and back. Severe cramping or rigidity may occur in the abdominal muscles. Other symptoms may include nausea, profuse perspiration, tremors, labored breathing, restlessness, increased blood pressure, and fever. Symptoms often diminish after a day or so and cease after several days. Serious long-term complications or death are very rare.

First Aid

If bitten, remain calm, and immediately seek medical attention (contact your physician, hospital and/or poison control center). Apply an ice pack directly to the bite area to relieve swelling and pain. Collect the spider (even a mangled specimen has diagnostic value), if possible, for positive identification by a spider expert. A plastic bag, small jar, or pill vial is useful and no preservative is necessary, but rubbing alcohol helps to preserve the spider.

A hospital stay may be recommended, particularly for those with a heart condition or with health problems. A physician may administer a specific antivenin to counteract the venom or calcium gluconate to relieve pain.

Control

Control efforts should target black widow spider webs because that is where the spider spends most of its time. Control is best achieved by following an integrated pest management (IPM) strategy, which involves using multiple approaches such as preventive measures, exclusion, sanitation, and chemical treatment when necessary. IPM requires a thorough inspection of the building to locate the pest. An inspection preferably should be done at night because the black widow spider is nocturnal.

Preventing Spider Bites

In order to prevent spider bites, be sure to wear gloves and a long-sleeved shirt when handling stored cardboard boxes, firewood, lumber, and rocks. Be sure to inspect these clothing items for spiders before putting them on. Shake out clothing and shoes before getting dressed.

Exclusion

Install tight-fitting screens on doors and windows to prevent entry of black widow spiders. Also install door sweeps. Seal or caulk cracks and crevices where spiders can enter the house. Install yellow or sodium vapor light bulbs outdoors since these attract fewer insects for spiders to feed upon.

Sanitation

In order to reduce black widow spider populations, it is very important to eliminate their potential hiding places indoors and outdoors. Black widow spiders are often found in undisturbed, cluttered areas indoors, so discard old boxes, old clothing, lumber, and other unwanted items in basements, crawl spaces, garages, and outbuildings. In such areas, store any items off the floor and away from walls. Remove piles of lumber and rubble outdoors. Remove ivy and other heavy vegetation from the foundation. Do not store firewood against the house. Note that these measures also reduce harborage for the spiders' prey.

Vacuum thoroughly indoors to remove black widow spiders and their webs and egg sacs. After vacuuming, immediately place the vacuum cleaner bag in a plastic bag, seal tightly, and discard in a container outdoors—this prevents captured spiders from escaping into the home. Wash off the outside of the house using a high-pressure hose, paying particular attention to window wells and other undisturbed areas where webs are built.

Insecticides

There are many labeled pesticides for spider control. Some are labeled for homeowner use, while others are labeled only for the licensed, certified pesticide applicator.

Insecticide treatments should be applied so that the chemical contacts spiders in their webs. A non-repellent insecticidal dust is useful to treat webs because the dust clings to the silk and is likely to be contacted by the spider. Individual exposed spiders can be killed with a non-residual aerosol spray, but any egg sacs will be unaffected.

A wettable powder or microencapsulated formulation of a residual insecticide can be applied to corners, behind and under furniture, behind stored items, etc. to prevent establishment of new spiders.

Residual liquid sprays applied to the outside perimeter of the home are not very effective because of the black widow spider's web-sitting behavior.

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Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

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