Kansas State University Agricultural Experiment Station and Cooperative Extension Service

STRUCTURAL PESTS

K-STATE Research and Extension

Black Widow Spiders

The black widow and the brown recluse are the only two indigenous spiders in Kansas that may be of medical importance because of their venom. Female black widow spiders tend to remain in out-of-the-way places and attempt to escape as their first line of defense. However, they can deliver a painful bite if cornered.

Three species of black widow spiders can be found in Kansas: the northern, *Latrodectus variolus*, the southern, *L. mactans*, and the western, *L. hesperus*. These three species differ somewhat in appearance but are similar in biology and behavior.

Northern black widow ventral (bottom) view

Northern black widow dorsal (top) view

Southern black widow ventral (bottom) view

Description and Biology

Black widows are a member of the cobweb spider family (Theridiidae), so named because of the stout, disorganized webs they spin. Webbing tends to remain, collecting dust and debris, even after the spider is gone. Typical of spiders in this family, the first pair of legs is longest and the third pair the shortest. Female black widows are about ½ inch long, excluding the legs, and have large, bulbous abdomens. Not all widow spiders are black, but adult females of all three species in Kansas have shiny black bodies and legs. The characteristic marking of the adult female black widow spider is the red hourglass, which consists of two triangles on the under, or ventral side, of the abdomen. The hourglass is orange to red, and the triangles may either touch or have a small gap between them depending on the species. The female may have other red markings on her body (Table 1).

Table 1: Widow Species Indigenous to Kansas

Widow Species	Mature Female
Northern black widow *Latrodectus variolus*	Hourglass is broken. Row of red spots down the middle of the back (top) of the abdomen.
Southern black widow *Latrodectus mactans*	Hourglass is complete. One red spot just above and behind the spinnerets.
Western black widow *Latrodectus hesperus*	Hourglass is complete. Rest of abdomen is solid black.

Male and immature widow spiders do not produce the same toxic venom as female spiders, but young spiderlings carry a toxic substance in their bodies that may harm pets or children if swallowed. Male black widows are typically half or less the size of the mature female and brown to light black in color. The male may or may not have the hourglass figure on the underside of the abdomen, but the top, or dorsal side, may have olive, gray, red, orange, or white bands. Males do not live long and are not often encountered. Unlike females, male black widows do not build large, messy webs because they spend most of their time roaming in search of mates. Immature female spiders resemble males, becoming more black and red with each molt until they become sexually mature. The name black "widow" supports a common belief that the female has a habit of killing and feeding on the male after mating. Although observed, this behavior is uncommon. Males typically leave the female quickly after mating and often remain near the web, feeding on prey captured by the female.

Immature black widow spider dorsal (top) view

Immature black widow ventral (bottom) view

Life Cycle

Black widow spiders mate in the spring or summer. The female spins a spherical off-white egg sac, a little over ½ inch in diameter, that remains with her in the web. Each sac may contain between 200 and 300 eggs, and a single female may produce several egg sacs in one year. Spiderlings hatch within 20 to 30 days, depending on temperatures. They disperse from the mother's web by releasing a small strand of silk and riding wind currents to a new location, a process known as "balloooning". Males reach maturity in 50 to 90 days and live up to four months. Females mature in 112 to 180 days and live for three or more years. Although black widows produce a large number of offspring, mortality is high and few survive to adulthood. Females and egg sacs can overwinter in protected areas.

Feeding and Habitat

Black widow spiders are nocturnal and reclusive. Females construct messy, tangled webs in out-of-the-way locations. The female usually remains in or near her web and often hangs upside down so the hourglass marking is easy to see. She feeds on flies, beetles, crickets, and other insects caught in her strong, sticky web. Several spiders may be found in a relatively small area if habitat is favorable. Black widows are most likely to be found outdoors in quiet, undisturbed places such as under rocks, in woodpiles, around lawn debris, in electrical or water meter and control boxes, in old cars or unused farm equipment, or infrequently used lawn furniture. They seldom enter living spaces but can be found in barns, sheds, crawl spaces, garages, cellars, or places in or around homes where there is not a lot of activity.

Danger and Treatment

Only the female has a venomous bite, which she uses as a last resort. Typically, bites occur when a spider is trapped against the skin, feels threatened, and cannot get away. The venom contains a neurotoxin, which can cause a range of symptoms. These vary from one individual to another, depending on the age and health of the victim as well as the area of the body bitten. The very young and very old are most likely to be severely affected. Victims may experience sharp, localized pain with swelling and redness at the site of the bite. Within a few hours, they may suffer spasmodic pains that travel from the affected limbs to the lower back and abdomen as well as overall achiness lasting about 24 hours. In addition to muscle cramping, symptoms may include headache, profuse sweating, and vomiting. In severe but rare cases, bites result in tremors, convulsions, difficulty breathing, and death due to suffocation.

If you suspect you have been bitten by a black widow spider, immediately apply cold to the area to reduce swelling. Sanitize using hydrogen peroxide or rubbing alcohol to mitigate infection. Seek medical attention right away. If possible, carefully and safely collect the spider and take it with you to the doctor or emergency room.

Management and Protection

Use caution when working in locations where black widows are likely to live. Inspect the area before entering or placing bare hands in enclosed spaces. Wear leather gloves, boots, socks, long-sleeved shirts, and long pants made of thick material when working in areas known to be infested with black widow spiders or where contact is likely. If black widows are found, carefully remove and destroy spiders, webbing, and all egg sacs. This can be done with a broom or other long-handled device, or a vacuum cleaner.

It is difficult to locate and destroy all spiders without thoroughly cleaning the area. Remove debris that provides good hiding places for spiders. Often, these undisturbed areas are good habitats for brown recluse spiders as well. Thus, sanitation may help reduce both brown recluse and black widow spiders. When possible, seal cracks around doors and windows, and repair holes in screens to prevent spiders from entering structures. Pesticides labeled for spider control can be used to spot treat areas inhabited by black widows, which tend to remain in their webs. General 'crack and crevice' applications are not likely to be effective because pesticides do not come into contact with the spiders. Treatments may have some impact by reducing the black widow spider's insect food supply and killing wandering male and immature spiders.

Photo Credits

Kaysie Morris – Immature black widows

Other References

Xing Ping Hu, Faith M. Oi, and **Thomas G. Shelton**. *The Black Widow*. Alabama Cooperative Extension System. 2002. ANR-1039.

Ludek Zurek. *Spiders and Scorpions*. Kansas State University, July 2005. MF-771

R. Jeff Whitworth and Holly N. Schwarting, Entomologists

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF3346 **March 2017**

K-State Research and Extension is an equal opportunity provider and employer. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, John Floros, Director.