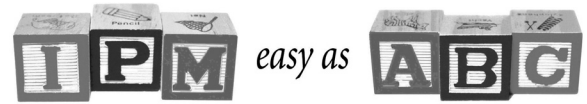


IPM for Spiders



Introduction

Although few organisms create as much hysteria as spiders, this fear is largely unwarranted. Most spiders are too small or have venom too weak to harm humans. Many bites for which people blame spiders are really inflicted by other organisms such as insects (fleas, bed bugs, mosquitoes) or mites (scabies, bird mites, etc.).

In Nebraska, the spiders that cause the most concern are the black widow and brown recluse (or violin) spider. Bites from these spiders can have medical consequences, but these spiders generally bite only if provoked and only under certain circumstances. The bite from some other Nebraska spiders can cause allergic reactions in sensitive people, including the parson spider and sac spider.

Spiders are beneficial to humans because they feed on insects and help to control a wide variety of insect pests. Unfortunately, the majority of spiders that are seen and killed by people pose no threat to us at all.

Removal of a Non-Dangerous Spider

Most spiders found in and around a school or child care center can be used as an educational opportunity to teach some interesting facts about these fascinating creatures. If any spider found in the classroom creates

anxiety on the part of the teacher or children and the teacher wishes to remove it, use the following procedure:

- Invert a wide-mouthed jar over the spider.
- Using a piece of stiff paper or thin cardboard large enough to cover the mouth of the container, slide it under the jar while keeping the jar pressed against the surface on which the spider is standing. Work slowly so the spider is not harmed.
- Keeping the card over the mouth of the jar, turn the jar over and tap the paper so the spider falls into the container.
- Holding the paper over the top as a cap, carry the jar outside and release the spider by shaking the container.

General Spider Management

You can control the number of spiders in an area by reducing their food supply. Study the situation to locate the source of their prey. Are too many flies getting in? If so, screens should be installed or repaired. Is security lighting attracting insects at night for spiders to feed on? Insects may also be attracted to poorly stored food or mishandled organic wastes. Don't forget about lounge areas and pop machines where food debris may accumulate. Eliminating the food source for these insects will reduce the food source for the spiders.

Unwanted spiders and their webs can be removed simply by vacuuming. In most cases, vacuuming and reducing the spiders' food source will be sufficient to control the problem. The black widow and brown recluse nest in undisturbed areas, often near the floor; therefore, thorough vacuuming from time to time in these areas can also help in their control.

Black Widow Spiders

Identification and Biology

Black widow spiders, *Lactrodectes* sp, are found in Nebraska, but are very uncommon. All the adult females of the three most common species of black widows in the United States are large (body size is 1/2 inch or larger), shiny black spiders with a red design on the underside of the abdomen that usually resembles an hourglass (see Figure 15-1). Since their webs are near the ground and the spiders hang upside down in the web, this distinctive marking is obvious. The adult male, which is not dangerous, is small and patterned with whitish streaks, bars, or dots on the top of the abdomen.

The black widow spins an irregular, tangled web with a tunnel in the center. The webs are spun in quiet, undisturbed locations that are usually, but not always, close to the ground.



Photo: UNL Department of Entomology

Figure 15-1. Black widow spider

The female spends her life in this web and retreats into the tunnel when disturbed. Her eggs are placed in spherical egg sacs within the web. After hatching, the spiderlings stay near the sac for a few hours to several days and then climb to a high point, wait for suitable air currents, and spin a silken thread so they can float on the breeze like a kite. This method of “ballooning” scatters them far and wide. Once they land, the spiderlings begin to construct their own webs. The abdomen of a young black widow is patterned with red, white, and yellow, but it has black legs and the general appearance of the adult.

Bites

Black widows are shy, retiring creatures that bite reluctantly and only in self-defense when threatened.

When a female is defending her egg sac, she can be more aggressive. Although the bite may not be felt at first, it soon becomes painful. Symptoms include headache and general body ache, nausea, shortness of breath, intense muscle pain, and rigidity of the abdomen and legs. An injection of calcium gluconate can

relieve the pain. Without treatment, these symptoms usually subside in 2 to 3 days. A black widow bite is more serious for a small child or an elderly person.

Detection and Monitoring

Monitor for black widows at night with a flashlight or head lamp. This is the time when they move to the center of their webs and will be most visible. When making your inspections, focus on areas that are dark during the day, undisturbed, but not necessarily close to the ground. Look in and around the following places:

- small crevices anywhere from the foundation to the eaves of buildings
- the undersides of outdoor wooden furniture (for example, beneath the seats in the corners where the legs are braced)
- piles of wood, bricks, stones, or similar materials
- the openings of rodent burrows
- water meters
- cellar doors
- outhouses
- storage rooms

Black widow webs have high tensile strength and, with a little experience, can be identified by the way they “pop” when broken. An experienced pest manager can use this information to find webs during the day.

Management Options

Physical Controls

To achieve some kind of permanent control of black widow spiders, you must try to eliminate not only the

spiders but also the habitats they prefer; otherwise a new black widow will soon find the same habitat and move in. If black widows regularly build their webs in certain locations indoors, try to modify these areas by increasing the light, caulking crevices, or reducing the insect population the spiders are feeding upon. As mentioned before, check window and door screens for holes that let in insects and make sure that foods and organic wastes are stored properly to prevent insect infestations. To reduce or eliminate possible web sites outdoors, debris piles and litter should be removed and discarded. All crevices in foundations and walls that are child-height and wide enough to stick a finger into should be caulked closed.

A black widow is easy to crush with a flat stick or similar tool. The spider can be pressed against one of the surfaces to which it has attached its web. You can also crush the spider with your fingers if you are wearing heavy gloves.

Brown Recluse or Violin Spiders

Identification and Biology

Brown recluse spiders (BRS) are identified by long thin legs, an oval-shaped abdomen, a light tan to dark brown color, and a very distinctive violin-shaped mark on the back (see Figure 15-2). This marking gives rise to another common name, the violin spider. Their overall size is 3/4 inch to 1 1/4 inches. The males are slightly smaller than the females.

There are many species of BRS in the United States. As the common name “recluse” suggests, these spiders are

shy and prefer dark, undisturbed locations.

Nebraska is at the north edge of the range of brown recluse spiders and this spider is rarely found outdoors here. Experts believe humans transport brown recluse spiders to Nebraska in boxes, especially from locations where BRSs are more common, like the southern part of the U.S. Brown recluse spiders have been found in boxes containing retail goods, as well as packed household goods. This is why recluse infestations are most common in warehouses and commercial stores that receive goods from other states. They are also found more frequently in apartments than in single family homes. Unlike the black widow, however, the brown recluse does not capture prey in webs but actively hunts its prey at night. They retreat during the day in undisturbed boxes in storage closets or piles of clothing or fabrics on the floor. They can also live above false ceilings and in wall voids, travelling between rooms or floors on electrical conduit or pipes. Care should be taken when cleaning out storage closets. Sticky traps placed in the corners of storage closets will capture brown recluse spiders and other crawling insects. Captured spiders can be compared with pictures on the internet or identified by experts.

Bites

- Brown recluse spiders avoid areas of human activity. Bites are rare and are usually the result of unused rooms suddenly being put to use, during cleaning activities, or accidental contact resulting from pressing the spider between the body and either clothing or sheets.
- The severity of a person's reaction to the bite depends on the amount



Figure 15-2. Brown recluse spider

of venom injected and individual sensitivity to it. Bite effects may be nothing at all, immediate, or delayed. Some may not be aware of the bite for 2 to 8 hours, whereas others feel a stinging sensation usually followed by intense pain if there is a severe reaction. A small white blister usually rises at the bite site surrounded by a large congested and swollen area.

- Within 24 to 36 hours, a systemic reaction may occur with the victim characterized by restlessness, fever, chills, nausea, weakness and joint pain. The affected area enlarges, becomes inflamed and the tissue is hard to the touch. The spider's venom contains an enzyme that destroys cell membranes in the wound area with affected tissue gradually sloughing away, exposing underlying tissues. Within 24 hours, the bite site can erupt into a "volcano lesion" (a hole in the flesh due to damaged, gangrenous tissue).
- This ulcerous wound takes a long time to heal. Young children, the elderly, and the infirm are most likely to be affected severely. Victims should seek medical attention

but should never allow a doctor to excise the affected tissue.

- From a legal liability standpoint, schools, child care centers, nursing homes, hospitals, and similar institutions should take measures using a pest control professional to control a brown recluse spider infestation. Because these spiders live in hidden locations, baseboard treatments are not always effective. Treatments with desiccant dusts, applied in wall voids and above false ceilings are generally more effective methods of control than are liquid treatments.

Detection and Monitoring

The brown recluse spider wanders at night searching for prey. It seeks dark, uninhabited areas for protection. Brown recluse spiders are usually found on floors and baseboards. Only rarely are they seen on desks and tables, and walls.

Searches for this spider should concentrate in uninhabited areas close to the floor, particularly in boxes; around piles of paper, clothing, and debris; in closets; and under

furniture. Periodic checks outdoors should focus on storage sheds, piles of debris or wood, cracks in the soil or in foundations and walls, and window wells, especially if small children play near those places.

Management Options

Physical Controls

Since these spiders prefer undisturbed places for nesting and hiding, periodic, thorough cleaning can help reduce their numbers. You should vacuum floors frequently. Boxes of paper and other items stored in closets or anywhere else that is dark and undisturbed should be handled carefully when first inspected. If brown recluse spiders are suspected, the boxes can be placed in a bin-type freezer for 48 hours to kill the spiders before the boxes are unpacked. A small hand-held, battery-powered vacuum can also be used while checking through stored items. If a spider is vacuumed up, the vacuum bag can be slipped into a plastic bag and then placed in a freezer to kill the spider. Outside, remove piles of debris, wood, and rock. Fill cracks in walls and foundations with mortar or caulk. Inside, clothing and other objects should be removed from floor areas in closets, locker rooms, and other storage spaces. Since most bites are received when putting on shoes or clothing that has lain on the floor, clothes normally stored near the floor should be moved to a higher location. Shake out clothes if they were on a floor overnight. Hang shoes or place them in sealed plastic bags to reduce the likelihood of being bitten. Wear leather gloves while searching through stored items to help prevent bites.



Photo: UNL Department of Entomology

Figure 15-3. Parson spider

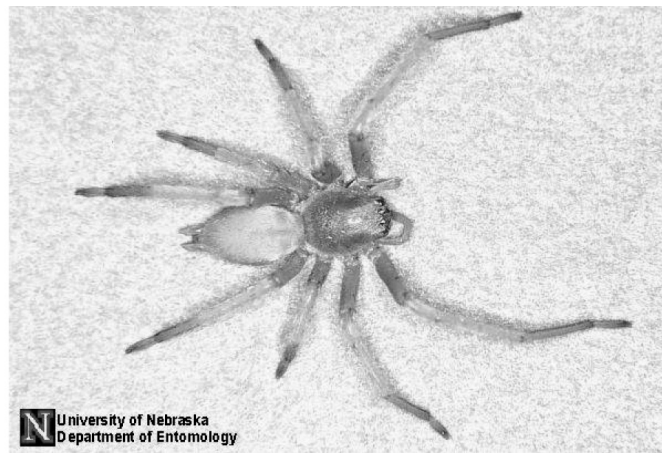


Photo: UNL Department of Entomology

Figure 15-4. Sac spider

Parson Spiders

The parson spider is generally non-toxic; although some people may experience allergic reactions to the bites. The parson spider is about 1/2 inch long and may vary in color from brown to black (see Figure 15-3). The front segment of the body tends to be a chestnut to black color, while the abdomen is grayish with a distinctive white or pink pattern along its middle. The body is covered with fine hairs, giving a velvety appearance. The parson spider is usually found outdoors under rocks or in piles of brush or firewood. This spider does

not spin a web but wanders on the ground in search of prey.

Indoors, this spider wanders about at night and conceals itself beneath objects or in clothing during the day. Most bites from this spider occur at night or when it is trapped in clothing. While the parson spider is not considered venomous, bite symptoms are variable in severity. Some people may experience localized allergic swelling and itching in addition to initial pain. A few individuals may experience excessive swelling, nervousness, nausea, sweating and elevated temperatures from the bites.

Sac Spiders

Some members of this group of spiders are quite common in homes. These spiders are light or dark-colored and have a darker coloration on the cephalic (head) region (see Figure 15-4). The body is covered with short hairs that give it a silky appearance.

These spiders do not capture prey in webs but actively hunt at night. During the day, they hide in tubular silken capsules they construct, which gives them their common name. You may be able to find silken capsules on walls, ceiling, draperies and other locations. Bites from these spiders may result in localized allergic reactions in some individuals.

Resources

For management practices and pesticide recommendations on spider control, see the publications available from UNL Extension on-line at: <http://www.ianrpubs.unl.edu>.

Educational resource guides on spiders are available at <http://lancaster.unl.edu/pest/spiders.shtml>.