



Pest Facts

Spiders: Non-Aggressive

From their depiction in the movies, nature documentaries or the focus of urban legends, spiders are creatures, which invoke fear, fascination, and wonder. Surveys indicate that spiders and snakes are the two most feared creatures by humans. However, despite popular belief, spiders are beneficial creatures, which help control the insect populations. Furthermore, with the exception of a few dangerous species, most are harmless and are seldom encountered by people. Spiders become pests, however, when they are accidentally introduced or stray into buildings, building webs around windows or near lights.

Basic Spider Anatomy

Spiders are divided into two body regions-the cephalothorax (head and thorax) and the abdomen. The spider's eight legs are attached to the underside of the cephalothorax, and the eyes are found on the top front, or carapace, of the cephalothorax. Most spiders have eight eyes. The arrangement of these eyes is important for identification. The mouthparts consist of the chelicerae, which are tipped with fangs, and the pedipalps or palps.

Life Cycle and Habits

Spiders lay eggs within a silken egg sac that is often ball-shaped and either hidden in the web or carried by the female. Spiders may produce several egg sacs, each containing several hundred eggs. One female may produce as many as 3,000 eggs in a series of several sacs over a period of time. Eggs may hatch a few weeks later and reach adulthood in one year. For a spider to grow, it must shed its skin (molt) usually four to twelve times before reaching maturity. Most spiders live one to two seasons. Some may overwinter as eggs, spiderlings in the egg sac, immature spiders living outside the egg sac, or as adults.

All spiders produce venom that is poisonous to their normal prey of insects, mites and other small arthropods. Venom is injected through the hollow fangs to immobilize the prey. Since spiders can only ingest liquids, digestive fluids are either injected or regurgitated into the prey.

Spiders produce silk, secreted as a liquid through the spinnerets and hardens when exposed to air. Different types and textures of silk may be used to construct snares or webs, eggs sacs, draglines and ballooning threads. Some spiders use web snares to trap prey and construct a silk sac to deposit eggs. Many spiders attach draglines of silk to the substrate at intervals wherever they go, appearing to have a silk thread to hang onto when knocked from their perch. Some spiderlings sail through the air (ballooning) on wind currents. Young spiders climb to a high point and release silk strands until the drag from the wind is sufficient to support their weight. Then, they release their hold and sail away, often for considerable distances. These ballooning threads (gossamer) can fill the air on a clear day as spiderlings disperse to new areas.

COMMON SPIDERS: ACTIVE HUNTERS

Jumping Spiders

Jumping spiders make up the largest family of spiders in the United States. Preferring to hunt during the day, jumping spiders seem to frequent sunlight surfaces and may be found on windowsills. Jumping spiders are compact in shape with relatively short legs and can jump up to 6 inches in one leap. Their most identifying character is a large pair of front row, middle eyes. Jumping spiders have excellent vision, quickly responding to any movement up to 18 inches away. These spiders are true acrobats, attaching a safety stand of silk before leaping from one surface to another.

Jumping spiders are fantastic hunters, taking advantage of their excellent eyesight. The prey is actively stalked, hiding behind objects before finally pouncing.



Wolf Spiders

Wolf spiders are large, “hairy” running spiders that are often confused with tarantulas. They are active hunters that do not construct webs. Important identifying characters are the eyes. The anterior, or bottom row, consists of four small eyes of equal size. The top row is curved backward with the middle two eyes enlarged in size. Larger species are up to 1.5 inches in body length and can have a leg span of 3 to 4 inches. These spiders are not aggressive and do not establish themselves indoors. Upon giving birth, the spiderlings climb on to their mother’s abdomen where they remain protected for a few days.



Sac Spider

These common spiders, often called two-clawed hunting spiders, have been associated with numerous cases of human spider bites (arachnidism). They are suspected of being responsible for most indoor bites. Their venom is cytotoxic, mainly affecting tissue at the bite site.

Sac spiders have two claws at the tip of the leg. Individuals may be light green to yellow in color with a dark strip on the front portion of the upper-midline of the abdomen. The female is about $\frac{3}{4}$ " long, whereas the male is only about $\frac{1}{4}$ ". The long abdomen is slightly flattened. There are eight eyes similar in size arranged in two rows across the face. The jaws are brown and the legs very smooth with the front legs longer than the rear legs. The egg sac is a white paper-like disk, usually placed in a protected area such as under a stone.

The indoor population increases in cooler weather, with the decline of food resources. They occur in wall voids or in silken sacs constructed in the upper corners of rooms. Sac spiders roam ceilings and walls, seeking prey. When falling to the floor, they rapidly seek a protected place.

Outdoors, these hunting spiders do not build webs, but construct a flat tabular sac opened at both ends in a rolled leaf, crevice, under loose bark or stones.



Ground Spiders

Members of this family are often mistaken for wolf spiders and sac spiders. They differ from sac spiders in that the front pair of spinnerets is cylindrical rather than conical in shape. They differ from wolf spiders by the absence of large eyes. Ground spiders are active, nocturnal hunters that are commonly found in their retreats under stones, logs, and other out-of-the-way areas.



COMMON SPIDERS: PASSIVE HUNTERS

Crab Spider

These spiders are about ½" or less and can walk forward, backward or sideways, holding their legs crablike. The body is compressed (dorso-ventrally), short and broad with the first two pair of legs larger than the last two. Many have horns or ornaments on the head or abdomen, some mimic bird droppings. Males are smaller than females and have much longer legs. Those that inhabit trees or hunt on the ground are usually colored in shades of grey, brown or black, while those that frequent flowers are brightly colored in red, yellow, orange, white and/or green. These spiders mimic the colors of the flowered to ambush their prey. They apparently possess toxin that is particularly potent to bees, flies

and other insects larger than themselves. They do not make webs, but females lay their eggs in a sac and die before they hatch.



COMMON SPIDERS: WEB BUILDERS

Funnel Weaver

Funnel Weaver spiders are commonly seen in late summer when morning dew makes their webs in lawns conspicuous. Spiders hide at the narrow end of the funnel that spreads across the grass and on feeling the vibration of an insect crossing the web, the spider moves, biting the prey and carries it back to the funnel. Some of these large, flat, sheet-like webs occasionally cover shrubs, such as junipers and yews during fall months.

Funnel weaver spiders are about ½" long or more, variously marked with shades of gray, brown, white, black, and dull yellow. Females deposit a disc-shaped egg sac in crevice, then may die while still clinging to the egg sac.



Orb Weaver or Garden Spider

These spiders all construct the characteristic circular, flat wheel-like web in which flying insects are trapped. Some construct elaborate and beautiful, large webs in gardens and tall vegetation especially obvious in the late summer, early fall. They have poor vision, locate prey by feeling the vibration and tension of the threads in the web, and then quickly, by turning the prey with their legs, use silk to wrap the victim. The prey is bitten before being carried to the center of the web or to a corner where it is eaten. Anything inedible is cut out of the web and dropped to the ground. In the fall, female orb-weavers produce egg sacs containing several hundred eggs, then die. Eggs may hatch soon after or not until the following spring. Many adult spiders are large, some with oddly shaped abdomens (pointed spurs, conical tubercles, in various colors of black, yellow, orange, red, white, brown or green).



House or Cobweb Spider

The female house spider is larger than the males, about 1/3" long, gray to brown with the rounded, globular abdomen mottled with several dark stripes on the upper side. House spiders spin their webs in dark corners of moist rooms and outdoors. They hang upside down in the center of an irregular cobweb. The outside sticky threads entangle many insects, especially flies. Females are fertilized several times during a lifetime with up to nine egg sacs, each containing 200 or more eggs. Young hatch in about eight days, staying within the same sac until after the first molt. They are cannibalistic. Spiderlings take several months to mature. Webs become dust covered when abandoned.



Cellar or Daddy-Long-Legs Spider

These spiders, about 1/3" long with long, slender legs up to two inches long, whitish-yellow to pale grey bodied are common in barns, cellars and damp warehouses. Eyes are close together. Many hang upside down in a loose web in dark corners of houses and cellars. Females carry the round egg sac in their jaws.



MANAGEMENT OF SPIDERS

Inspection and Identification:

A thorough inspection inside and outside the structure is needed to determine the spiders involved, the sources of infestation, how they are entering and any contributing conditions. Accurate identification of the spider is especially important in the case of a spider bite. Inspect for webbing in corners, near widows and secluded places. Move items to determine the presence of spiders. Carefully collect any specimen, if possible. Submit for positive identification by a pest management professional.

Non-chemical Measures:

Non-chemical techniques should comprise the majority of the management efforts, especially for web-building spiders.

Sanitation-Removal of spider webs, egg sacs, and potential harborages are critical to long-term success in spider management. Indoors, store boxes off the floor and away from walls to limit their use by spiders. Seal all box openings to prevent use as a spider harborage. Removal of all new and old webbing allows for easier determination of future

zone 18 to 20 inches out from the perimeter of the building

Exclusion-Keeping spiders from entering is the best strategy. As many cracks as possible in exterior walls should be sealed and tightly fitted screens installed in windows and vents. Tight-fitting weather strips should be present around the edges of all doors. Finally, all exterior openings should be closed when not in use.

Exterior lighting-Exterior lights often attract insects and, subsequently, spiders. Mercury vapor lights should be replaced with sodium vapor lights which are less attractive to insects.

Ventilation-Installation of proper ventilation in crawlspaces and attics/storage areas reduces excess moisture which attract insects and spiders.

Vacuuming-The use of a vacuum device removes not only individual spiders but also webbing and egg sacs. Vacuum devices equipped with several extension tubes are useful in the removal of webs and spiders from high corners, rafters, overhead beams and otherwise unreachable surfaces. This technique is the primary control technique for web building spiders.

Chemical methods:

A variety of insecticides are labeled for spider control and are effective when directed to the area of spider activity or where they may be resting. Spiders are, however, easily disturbed and drop from their webs and seek cover when treatments are applied. Before deciding on any pesticide application, consult a professional pest manager for additional information.

This publication contains general recommendations that are subject to change and update. For additional pest management information, please contact the Entomology Department at the Defense Supply Center Philadelphia-West Coast Support Office, Alameda, California. DSN 686-8122, Commercial (510) 337-8122, email paa5245@exmail.dscp.dla.mil.

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