



BUG BIZ

Pest Management and Insect Identification Series



Peridomestic Cockroaches Part 1 (Blattodea)

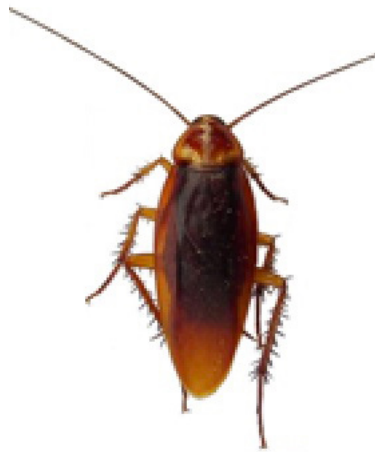
Aaron Ashbrook, Forest Huval, Chris Carlton, T.E. Reagan

A variety of cockroaches do not typically reside in homes or other structures but occasionally enter the indoor environment. Cockroaches generally prefer dark, warm, humid areas, and commonly inhabit void spaces under manhole covers and in sewer/drainage systems where organic material is present. They also inhabit tree hollows, mulch, woodpiles and basements. Some cockroach species are accidentally brought indoors in potted plants or animal enclosures. In more rural areas, cockroaches can infest livestock structures. Adult female cockroaches are typically slightly broader than males and may have different wing characteristics. This article deals with cockroaches of Louisiana that are associated with urban and rural outdoor landscapes.

Cockroaches represent a public health threat for two reasons: 1) they feed upon decaying organic matter, enter the human environment and subsequently deposit microbes that can be human pathogens; 2) cockroaches secrete proteins that are allergenic to humans and exposure to them can result in the development of asthma. Because of these factors, the presence of cockroaches in human structures is unacceptable and pest management may be necessary. Cockroaches have different behaviors and habitat preferences; therefore, their control relies on correct identification of species. At least 17 species of cockroaches are found in Louisiana, excluding termites, which are now included in the same order, Blattodea. These articles are divided into two parts, and the introduction and control methods are identical.

Description

American cockroach (*Periplaneta americana*)



Adult *Periplaneta americana*.
Photo by Forest Huval

Adults are the largest indoor infesting cockroaches. Body length ranges from 1 $\frac{3}{8}$ to 2 $\frac{1}{8}$ inches (34 to 54 mm). The forewings and legs are reddish-brown and the forewings cover the paler colored abdomen in males and females. The pronotum (i.e., upper thorax) behind the head capsule is light brown along the edges and dark

brown in the center. Nymphs are dark brown with hints of reddish-brown. Nymphs go through a variable number of molts to reach adulthood and take about a year to complete development. Members of the genus *Periplaneta* are distributed throughout the world, having been introduced from several different continents. *Periplaneta americana* originated from Africa. Adults are capable of flight at higher temperatures and can directionally glide at lower temperatures. They remain active around 70 F and cannot tolerate freezing temperatures. The American cockroach is the most frequently encountered member of the genus *Periplaneta* in Louisiana, where they mostly inhabit the sewer drainage system and explore the surface at night.

Smoky brown cockroach

(*Periplaneta fuliginosa*)



Adult *Periplaneta fuliginosa*. Photo by Forest Huval

Adults are a dark brown or almost black in color, 1 to 1½ inches long (25 to 36 mm), with wings that cover the abdomen in males and females. The pronotum has no distinct markings. Nymphs are shiny, dark brown to black, with white markings on their antennae and several white bands on their abdomens. Temperature influences the development rate of the nymphs, and they can take up to two years to reach adulthood.

They similarly go through a variable number of molts to reach adulthood. Although they are distributed throughout the world, they likely originated from Asia. Smoky brown cockroaches lose moisture more quickly than other roaches and prefer to reside in high humidity areas with minimal airflow such as mulch piles, potted plants, tree holes, under concrete and wooden decks, attics or wall voids, greenhouses, gardens and zoos. They are attracted to light and will enter structures through cracks at night.

Australian cockroach

(*Periplaneta australasiae*)



Periplaneta australasiae. Photo by Forest Huval

Adults are similar to those of the American cockroach but can easily be distinguished from them with their darker color, yellow bordered thorax and streaks of yellow on the forewings, as well as smaller size, with lengths ranging from 1¼ to 1½ inches (31 to 37 mm). The forewings cover the abdomen. Late-stage nymphs have yellow spots that border the abdomen. It takes about a year for nymphs

to develop to adulthood. Australian cockroaches have a global distribution and likely originated from the Oceanic region (Australia, Papua New Guinea and surrounding islands) or Africa. Low temperatures limit the ability of Australian cockroaches to establish outside of tropical/subtropical regions unless they are introduced indoors. They prefer to reside in greenhouses, steam tunnels, wood piles, under bark, tree holes and moist locations, but indoors they can be found in cupboards, on water pipes and in other

areas with dark, warm and wet conditions. When inside greenhouses, they can feed upon and damage plants.

Brown cockroach

(*Periplaneta brunnea*)



Periplaneta brunnea. Photo by Forest Huval

Brown cockroach adults range from 1¼ to 1⅜ inches long (31 to 40 mm) and are often mistaken for American cockroaches because of their similar appearance. The terminal segments of the brown cockroach cerci (two small projections from the abdomen) are broader than those of the American cockroach and the pronotum is slightly darker. Brown cockroach first instar (growth stage) nymphs also have

white on the last segments of the antennae, whereas antennae of American roaches are uniformly brown. Adults have wings that cover the abdomen in males and females. Brown roaches take approximately eight to 12 months to reach adulthood. The brown roach likely originated from Africa and is now widely distributed throughout the world. When indoors, brown cockroaches are often associated with soil environments such as potted plants. They prefer warm, humid conditions and will reside in crawlspaces, sewers, food preparation areas, garbage dumps, ground cover and palm trees.

Asian cockroach

(*Blattella asahinai*)



Blattella asahinai. Photo by Forest Huval

Adults of this cockroach average ⅝ of an inch (15 mm) in length and closely resemble those of the German cockroach, with a brownish-tan body color and two black parallel markings on the pronotum. Distinguishing the two species can be difficult. The easiest way to tell the two apart is that Asian cockroaches are strong flyers, whereas German

cockroaches only glide and prefer to run. German cockroach wings are equal to or slightly shorter than the length of their abdomen while Asian cockroaches' abdomens never exceed the length of their wings. Asian cockroach nymphs also resemble German cockroach nymphs but are smaller in size and have white margins on the abdomens. Development time for nymphs to reach adulthood is about two months, similar to that of the German cockroach. Originally from Japan, the Asian cockroach was found in Florida during the 1980s and is widely distributed in the southern U.S. Unlike German cockroaches, Asian cockroaches prefer to live outdoors, and are common in gardens, leaf litter, grassy areas, mulch and ornamental plants. Adults will climb to the tips of plants and grass to take flight. Asian cockroaches feed on fruit in commercial production settings but are not considered major pests. They will also feed on eggs of pest insects in crop systems. Lights on structures attract Asian cockroaches to buildings, which they may subsequently enter.



Ventral *Blattella ashinai*. Photo by Forest Huval

Control

Cultural control. Management of peridomestic cockroaches relies upon exclusion, habitat modification and use of insecticides. Gaps that cockroaches are likely to enter should be sealed using an appropriate caulk or sealant. Adult American cockroaches can fit through a gap that is the height of two pennies, or 3 mm. Light coming from gaps around doors and through windows in buildings attract cockroaches and provide entry points. Older homes with outdated or degraded seals are particularly susceptible to cockroach invasion, especially after extreme weather (cold, rain, heat, etc.).

Eliminating habitats that cockroaches prefer will reduce populations around property. High moisture areas such as leaf piles should be removed. Wood piles should be placed far away from the home. Mulch in landscaped areas should be less than 2 inches thick. Plants that are close to the house should be trimmed so they do not contact the building. Organic material in areas such as drains and gutters should be cleaned so as not to provide a food source. Tree holes can be filled. Dispose of garbage in the

area. Removal of moist areas and limiting access to water are also important, especially in greenhouses, animal production settings and zoos.

Chemical control. A variety of insecticides are available that are effective against peridomestic cockroaches. Baits are superior to other options because of their palatability and attractiveness to cockroaches. However, placement of bait in the correct areas is critical for their efficacy as it needs to out compete other food sources. Baits are often applied as granular or flake formulations directly to harborage locations mentioned for peridomestic cockroaches. Insecticide sprays can also be applied for residual protection around the home and also should target cracks and crevices or areas where cockroaches are suspected to reside. The base of the foundation of structures, thresholds of windows and doors can also be treated with liquid insecticides to prevent entry of peridomestic cockroaches. Boric acid and silicate dusts are also effective options for cockroach control. Cracks and crevices or voids should be targeted when using dusts or boric acid. As always, be sure to follow all label directions on insecticide products.

References

Koehler, P.G., B. E. Bayer, and D. Branscome. 2022. Cockroaches and their management. UF/IFAS Extension, ENY-214.

Schal C. 2011. Cockroaches. In: The Mallis Handbook of Pest Control (S. Hedges and D. Moreland, eds.), 10th edition, GIE Media (in press).

Contact Us: For advice about arthropod identification or diagnosis, contact the LSU AgCenter Department of Entomology. Reach the department through the Contact Us webpage: <https://bit.ly/36c4awm>.



Visit our website: www.LSUAgCenter.com

Matt Lee, LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
LSU College of Agriculture

PUB 3877-A (online) 5/23

The LSU AgCenter and LSU provide equal opportunities in programs and employment.

Visit our website: www.LSUAgCenter.com