

Insec(tc)ure*:

Are you insecure about your insect cures?

A UT Urban IPM Lab Newsletter for the Pest Management Industry

The Smokybrown Cockroach

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This week I attended the Chattanooga Area Pest Control Association Mini-Conference to spread the word about invasive ants ([Asian needle ant](#), [dark rover ant](#) and [imported fire ants](#)), [hammerhead worms](#) and the [spotted lanternfly](#). At the end of the meeting, I was approached by several industry veterans and a few newer but knowledgeable ones about the increase of smokybrown cockroaches, *Periplaneta fuliginosa* (Serville), in the Chattanooga area. The uptick was estimated to have started around 5 to 8 years ago. As I had just taught the ACE lecture on cockroaches, I recalled the smokybrown cockroach distribution in 1991 did not include Tennessee (Atkinson et al. 1991). However, a glance at the Inaturalist.org map of research-grade submissions of *P. fuliginosa* shows this cockroach found in various locations throughout our state.

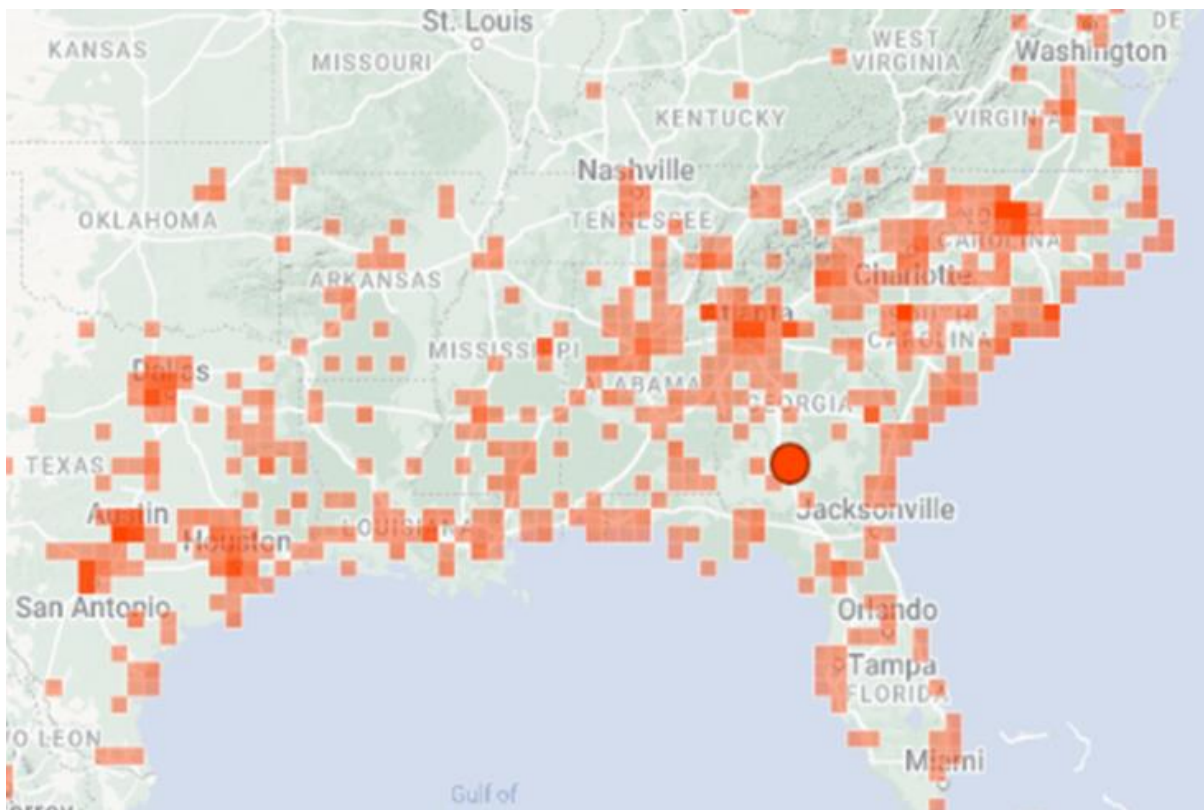


Figure 1. Southern U.S. distribution of the smokybrown cockroach, *Periplaneta fuliginosa*, as indicated by research-grade submissions on iNaturalist. <https://www.inaturalist.org/observations/139465004> accessed 10/21/22.

A few months ago, I was experimenting with trapping cockroaches around structures. And, as usual, I started at my Knoxville home. I coated the upper, inner surface of a bucket with “slippery goo” (3 parts mineral oil: 2 parts Vaseline) to prevent cockroaches from escaping and placed a hamburger bun soaked with alcoholic cider in the bottom to attract cockroaches. In the evening, the baited bucket was placed in tall vegetation under trees about 20 ft. from the house. The following day, I found an adult female smokybrown cockroach. So smokybrown cockroaches are confirmed in Knoxville.



Figure 2. A smokybrown cockroach female trapped in a bucket baited with cider-soaked bread. Note the arrow pointing to the notch in the female’s last abdominal segment. Credit: K. Vail

Smokybrown cockroaches are a nuisance pest often seen at night and are attracted to lights. They are considered public health pests because they feed on the feces of animals (pet, human, etc.) and can mechanically transfer parasites and pathogens. In addition, their feces, cast skins and body parts are human allergens and asthma triggers. *Periplaneta fuliginosa* lacks any color patterns and is uniformly shiny dark brown. The adult *P. fuliginosa* is 1 to 1.5 inches long and slightly smaller than the American cockroach. The female smokybrown cockroach’s wings extend to the tip of the abdomen, which easily differentiates it from the Oriental cockroach’s short wing pads. A notch in the female’s last abdominal segment distinguishes it from males. The male Oriental cockroach wings do not extend to the end of the abdomen as they do in the smokybrown cockroach. The young nymphs are also dark, with two white stripes on the body and a white antennal tip. Older nymphs are reddish-brown. The dark egg case is about 0.4 – 0.6 inch long, with lateral indentions and a weak terminal point. Each ootheca contains approximately 26 eggs, and the time from egg to adult is estimated at 1 to 2 years.

Periplaneta fuliginosa loses moisture through its cuticle more readily than many other cockroach species. Water loss is accentuated in low-humidity environments. Thus, this peridomestic cockroach is often found outdoors in moist, warm, protected habitats of mulch, ground cover, and tree holes. Items that environmentally mimic the damp, protected tree holes, such as block walls, soffits and attic eaves away from airflow, are also preferred sites. Other common sightings occur on wood piles, wooden decks, near trash, pet food bowls, landscape timbers, under bark, and debris-filled gutters. Most U.S. research on this species has been performed in the warm, humid Gulf and Southern Atlantic coasts, so harborage preferences may differ slightly in Tennessee. When found indoors, *P. fuliginosa* is often seen in kitchens, bathrooms, around entry points and in attics. Common indoor harborages in a South Carolina home included wall voids with water damage, exterior walls of a furnace room, and porch and carport ceiling voids. In Florida, smokybrown cockroaches don’t travel very far. In one study, 70% of individuals were recaptured in the same area over a 10- to 21-day period. Older, brick-exterior homes with much deciduous

tree cover, objects (junk piles, planters, leaves and straw) and pets are considered at higher risk of occupation by this species.



Figure 3. Young nymph of the smokybrown cockroach. Credit: Brown, W., M. Merchant, and K. Sides. 2017

Research on managing smokybrown cockroaches emphasizes the use of an integrated approach. Removing leaves, needles, ivy and ground cover within 1 ft of the house and trimming limbs to a foot away from structure was combined with (1) an insecticidal spray to suspected harborage (house eaves, sockets and masonry and wood joints) or (2) an insecticidal spray plus granular bait around the base of the house, garden borders, railroad ties, large

rocks and other objects, and a gel bait to porch corners, window ledges and vent grates. This integrated approach was more effective than a perimeter spray alone and lasted twice as long, 60 days compared to 30 days. In addition, the successful integrated system affected the smokybrown populations outside the spray zone. Reinvasion from outside the spray zone was the possible cause of the decreased residual effect. Also, the outdoor treatments reduced indoor smokybrown cockroach numbers.

Although this research was conducted nearly three decades ago, these tactics still apply. Smokybrown cockroaches should be managed by removing potential harborages and moisture-retaining materials (e.g., leaf litter and debris around the home), sealing and treating possible entry points into the structure, applying a perimeter treatment with microencapsulated or similar insecticide, or placing granular baits around the perimeter of the structure, and using gel baits where additional harborages exist or where the cockroaches have been seen.

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Insec(tc)ure is edited by Jennifer Chandler and Pat Parkman and archived online at
<https://epp.tennessee.edu/urban-ipm-new/>

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