

NEWS RELEASE

Media Contacts: Dr. Jules Silverman, 919/513-2468 or jules_silverman@ncsu.edu
Mick Kulikowski, News Services, 919/515-3470 or
mick_kulikowski@ncsu.edu

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Argentine Ants in United States Differ from Those in South America

FOR IMMEDIATE RELEASE

If you have a problem with ants in your home this summer, take heart. The recent wet weather may be chasing the tiny pests into your house, says Dr. Jules Silverman, Charles G. Wright Professor of structural pest management in North Carolina State University's Department of Entomology, but a break in the rain should lead them back outdoors and into their nests in the ground where they enjoy living. However, don't get too complacent, because abnormally dry conditions could force them indoors again.

Silverman studies the biology and management of urban pest ants, specifically the Argentine ant, which, along with the odorous house ant, are two species of dark black ant you're likely to see in North Carolina.

The Argentine ant, native to South America, has a somewhat spotty distribution in North Carolina and the Southeast, and has long been a pest in urban and agricultural regions of California, Silverman says. Introduced to the United States more than 100 years ago – Silverman says records indicate the Argentine ant first arrived in New Orleans in the soil ballast of ships coming from South America – the pest acts a bit differently depending on its locale.

“Evidence suggests that since its introduction to the United States and other parts of the world outside of its native range, the Argentine ant doesn't exhibit the same territorial behavior evident in South America,” Silverman says.

Fiercely aggressive and competitive within its own species in its native land – Silverman says research shows Argentine ants in territories as close as 30 feet apart fighting each other in South America – Argentine ants in certain areas in the United States and southern Europe live a peaceful co-existence. The results of this ant détente: super-large colonies of Argentine ants that drive away other species of ants.

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“There’s no evidence that individual Argentine ants are better fighters,” Silverman says. “They’ll dominate other species because they’re more abundant. Competition between Argentine ant colonies in their native land limits expansion, keeping their numbers in check. But in southern Europe along the Mediterranean, studies have shown no aggression among Argentine ants over a range of 6,000 kilometers. So those Argentine ants are essentially part of the same colony because most researchers studying social insects assign colony boundaries based on aggressive behavior between worker ants.” In California, Argentine ants from San Diego to San Francisco are generally considered to be members of the same colony because of the lack of aggression displayed over this large range, Silverman says.

If large colonies of Argentine ants are headaches to other species of ants that can’t win the numbers game, imagine the plight of citrus farmers in California. Although Argentine ants don’t eat oranges or the leaves of plants, they can play an indirect role in citrus blight, Silverman says.

“Homoptera, or the group of insects that includes aphids and scales, feed directly on the leaves and fruit of citrus and transmit plant pathogens,” Silverman says. “Argentine ants derive vital nutrients from the sugary excrement produced by these insects, and will kill or repel the natural enemies that keep Homopteran populations in check.”

In the Southeastern United States, Argentine ants support scales and aphids that can harm ornamental trees, Silverman says, and their intra-species aggression is intermediate to the utter hostility reported for South American populations and the general lack of aggression in Californian and European populations.

Silverman says, “Based on work conducted with NC State graduate student Grzesiek Buczkowski, we have not identified continuous populations of Argentine ants across large sections of the Southeast. One neighborhood may be heavily infested, while a couple of blocks away the ants are absent. Furthermore, unlike Argentine ants in California, workers from nests occurring only a few miles apart are aggressive toward each other.”

One reason for the population structure differences between the Southeastern United States and California could be the effect of low temperatures. Argentine ants don’t tolerate low temperatures very well, Silverman says, so freezing conditions could impede expansion and fusion of colonies. The area between San Francisco and San Diego has few freezing days, allowing the non-aggressive colony to expand and thrive. On the East Coast, Silverman and his colleagues are trying to ascertain whether North Carolina may be a boundary or border of sorts for ant expansion. It’s possible that areas north of North Carolina may get too cold in the winter, stymieing Argentine ant expansion efforts.

So how do homeowners and property managers avoid infestations of Argentine ants? Silverman says it’s a challenge because the pests are able to move their nests quickly from one area to one with better living conditions, including moving indoors to get out of the heavy rain. And, as opposed to most other ant species, there are no single nests on which to focus efforts. Spraying an insecticide around the perimeter of the house or property and using baits are plausible solutions, Silverman says, although he thinks attractive baits are ideally the best weapons. Baits limit pesticide exposure to pets and humans, are usually in tamper-proof containers, and the tainted food is carried back to the nest, thereby killing the queen and brood.

“The bait must compete favorably with other foods available to the ants, and over time, the water in liquid baits will evaporate, making it less attractive,” Silverman says. “Also, to be effective there must be a sufficient amount of bait to be distributed to a colony containing up to several million workers and thousands of queens.”

Silverman and a former post-doctoral research associate, Heike Meissner, have also done studies on the types of mulches that encourage or discourage Argentine ant infestations. Silverman and other researchers believe that Argentine ants are transported in landscaping materials including organic mulches, as there’s no evidence to suggest that winged Argentine ant reproductives fly very far. So homeowners and landscaping firms – by transporting ant-infested mulch and plants to new neighborhoods – are probably the best “vehicles” spreading Argentine ants.

Their studies – involving the placement of different types of mulches around individual trees – showed that cedar mulch deterred Argentine ants. Cedar is often used to repel clothes moths and other fabric pests. “The complex of oils in cedar wood are toxic to Argentine ants,” Silverman says.

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