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# Insec(tc)ure*:
## Are you insecure about your insect cures?

A University of Tennessee Urban IPM Lab Newsletter for the Pest Management Industry

## Updates on the Jorō Spider Published in Time for Halloween

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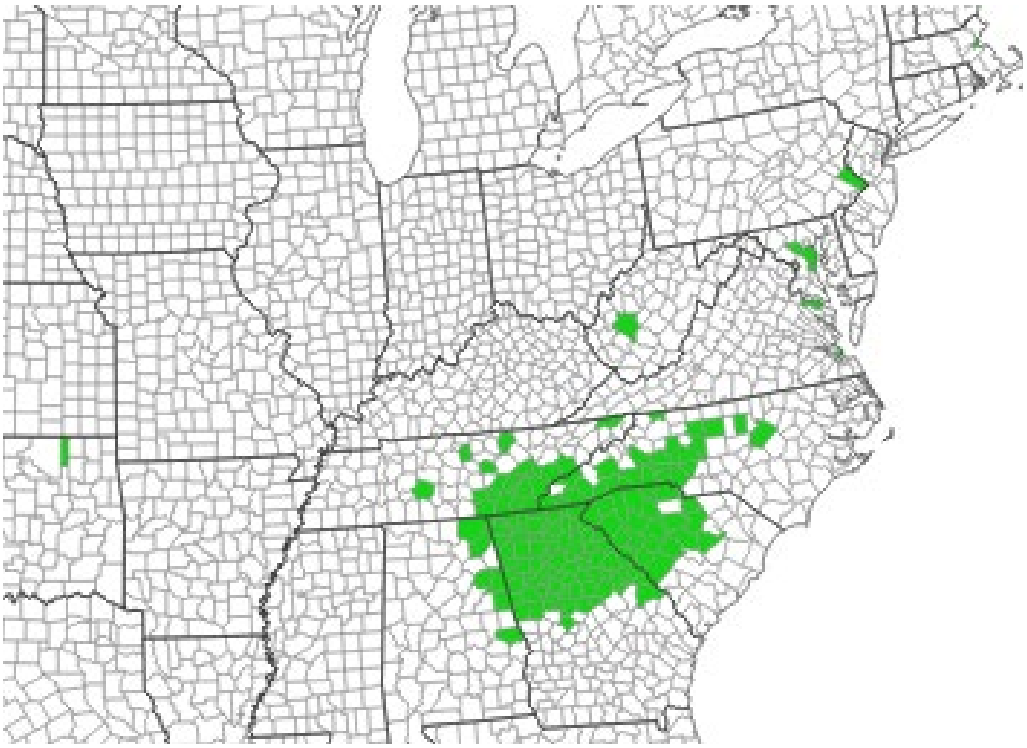

*Figure 1. US distribution of the Joro spider. Credit: EDDMapS, https://www.eddmaps.org/distribution/uscounty.cfm?sub=87670, accessed 29 October 2025.*

## Introduction

The Jorō spider is of Asian origin, first found in the US in 2014 in northern Georgia and has since spread to 10 other states. This large, ornate spider builds extensive, sturdy golden webs across trees, shrubs, houses, and other areas, decorating homes with natural Halloween decorations. In a perfectly timed release for the impending holiday, two refereed journal articles on the Jorō spider, *Trichonephila clavata* L. Koch, were published simultaneously in two Entomological Society of America journals. One article presented the efficacy of insecticides, and the other discussed the risk associated with this spider's bite. For those of you who think the Jorō isn't found in your area, see Figure 1 from EDDMapS, which documents 550 Jorō spider reports in 20 Tennessee counties.

*Figure 2. A female Joro spider, Trichonephila clavata, can reach 1 inch in length, not including the legs. Credit: Carly Mirabile, University of Georgia College of Agricultural and Environmental Sciences*

## Will they bite me?

Probably not! Female Jorō spiders are large and can be quite intimidating to those who are afraid of spiders, but research from the southeastern US reveals there's little to worry about. Lead author David Nelsen, with Southern Adventist University in Collegedale, TN coordinated a research study that evaluated the Jorō spider's behaviors in response to contact from humans, starting with touching the spider's web, and then moving on to the spider's abdomen, placing the spider on human skin, cupping the spider between hands and lastly, grasping the spider's legs. The spider's behavioral responses were recorded as moving, dropping, remaining motionless, regurgitating a liquid, biting or envenomating. The most common behavior was movement. Spiders moved in 88% of the web contacts, 96% of the abdomen proddings, 84% of the skin contacts and 86% of the cuppings. The second most common behavior was dropping – 88% of the spiders dropped when contacting human skin. Bites only occurred in 57% of the spiders when they were pinched, and in 1% or less of the spiders that were cupped, contacted human skin, or when the web or abdomen was prodded. Envenomation, a bite with liquid on the fang tips, only occurred in 2% of the spider encounters in the field. So, bites from Jorō spiders encountered in the field are highly unlikely.

## What happens if they bite?

They took this a step further and recorded the human response to a forced female Jorō spider bite. Yes, all kinds of precautions were taken, including the presence of medical staff. Twenty-three participants volunteered for the study, one more male than female, which shows what someone will do for a $10 Amazon gift card. Bite responses were recorded four times over 30 minutes, starting at 0 minutes, as well as at 24

hours. The procedure and a sample of bite responses are documented with photos in the publication. Nearly 40% of those bitten had bled from the wound in the first minute, but bleeding had stopped in all cases by 15 minutes. Tingling or prickling sensations (paresthesia) were not common and were experienced by only 13% at five minutes, with none reported at one day post bite. Tingling with unpleasantness or pain (dysesthesia) was experienced by 61% in the first minute, down to 17% by 30 minutes, and only one person reported this symptom at 24 hours. Itching was more common and experienced by 87% within the first minute, and then dropped to 30% at 30 minutes. Redness at the bite peaked at 96% of participants at 5 minutes but only one person had erythema at one day. The size of the red area was the greatest at 5 minutes and ranged from 0 to 12.7 $cm^2$. Swelling was slightly less common than redness and also peaked at 5 minutes, with 74% experiencing this symptom; again, only one person had swelling a day later. The swollen area reached its greatest extent at 5 minutes, with the maximum raised area measuring 1 $cm^2$. All measured symptoms had disappeared within 1 day in all participants except one. No participants required medical attention. Therefore, it appears unlikely that a bite from a Joro spider would cause serious health concerns.

### Reference

Nelsen, D. et al. 2025. Keep calm and carry on: bites from *Trichonephila clavata* are unlikely and cause minimal discomfort. J. Med. Ent. 00: 1–13. https://doi.org/10.1093/jme/tjaf103

## How do I control the Jorō spider?

Although using a broom or other object to mechanically remove spiders and their webbing when accessible is a good solution, the authors recognize that some individuals may use an insecticide and therefore set out to evaluate the effectiveness of products available to homeowners, including commercially available ones and home remedies. Spider mortality (death) was recorded in response to 30 spiders individually sprayed on the web or dangling from a stick. Spiders were brought back to the lab and mortality was observed once a day for 7 days. Because many of the products tested were not registered pesticides, I will not discuss them here; however, you can find all the evaluated products and their results listed in the Chuang et al. (2025) publication below. Of the commercial homeowner products they evaluated, Zevo Insect Killer Ant, Roach & Spider (Sodium Lauryl Sulfate [5.96%], Rosemary Essential Oil [2.48%] and Cornmint Essential Oil [2.48%]) and Black Flag Spider and Scorpion Killer (Prallethrin [0.025%] and lambda-cyhalothrin [0.03%]) were the most effective along with a foaming dish detergent and machine lubricant.

### Reference

Chuang, A., et al. 2025. Chemical management strategies for the invasive Jorō spider, *Trichonephila clavata* (Araneae: Araneidae). J. Econ. Entomol. 00: 1–12. https://doi.org/10.1093/jee/toaf225

## Note

The University of Tennessee is preparing an Extension publication on Jorō spiders. Until that is available, refer to the University of Georgia recommendations at https://fieldreport.caes.uga.edu/wp-content/uploads/2025/08/C-1289_1.pdf for additional information and product suggestions. Always check the Tennessee Department of Agriculture's pesticide product database, https://tnlcp.lcp.tracefirst.com/public_weblinks/registered-products, to ensure the products are registered in Tennessee before using.

## Upcoming Category 7 Training Opportunities

**Associate Certified Entomologist (ACE) Exam Prep Course**, Mondays, 5:00 – 6:30 Eastern Time, September 15 – December 15, virtual, https://tiny.utk.edu/ACEPrepFall2025; each class is 1 TN CEU and can be registered for separately.

**TPCA PestEd: Virtual CEU monthly meetings**, https://www.tpca.info/Calendar
November 19th- Get Smart: Understanding Mouse Behavior, Dr. Matt Frye, Cornell University
December 17th- Mosquitos, Malaria and Management, Oh My!, Dr. Christopher Hayes. NCSU

**Pesticide Applicator Category 7 and Category 3 Trainings**, https://psep.tennessee.edu/commercial-applicator/

**East Tennessee Pest Control Association's Smoky Mountain Conference**, January 14, 2026, UT Conference Center, Knoxville, TN https://www.etpca.org/Smoky-Mountain-Conference

**TPCA Region 2 CEU Training, January 20, 2026.** https://www.tpca.info/event-6325300?CalendarViewType=0&SelectedDate=10/29/2026

**Conference: Developing Medical and Entomological Networks to Assist Individuals with Suspected Delusional Infestations (DI),** UT Conference, Knoxville, TN. Contact kvail@utk.edu.

**WDO/GRC Licensing Training**, January 27, 2026, Nashville, TN, https://psep.tennessee.edu/

**2026 TPCA Winter Conference**, February 17 – 19, 2026, Embassy Suites Cool Springs, Franklin, TN 37067 https://www.tpca.info/event-6286844?CalendarViewType=0&SelectedDate=10/29/2026

**MAMCA (Mid-Atlantic Mosquito Control Association) and TMVCA (Tennessee Mosquito and Vector Control Association) Joint Conference**, February 17 – 19, 2026, Memphis, TN https://www.mamca.org/annual-conference

**12th Annual Tennessee Bed Bug, Cockroach and Rodent Management Meeting**, August 5, 2026, UT Conference Center, Knoxville, TN

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## Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label and registered for use in your state.

## Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication. Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others that may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. The author(s), the University of Tennessee Institute of Agriculture and University of Tennessee Extension assume no liability resulting from the use of these recommendations.