Crapemyrtle bark scale

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Crapemyrtle bark scale on a potted crapemyrtle at the Overton Texas A&M AgriLife Research and Extension Center. Photo by Erfan Vafaie

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Most recently reviewed by: Janet Hurley (2018)

Common Name(s): crapemyrtle bark scale

Description

The crapemyrtle bark scale, *Acanthococcus* (=*Eriococcus*) *lagerstromiae* (Kuwana), was first confirmed in the USA in 2004 in the landscape near Dallas (TX), although it was likely introduced earlier. The scale is a sucking insect that feeds on the phloem (sap) of plants. As it feeds, it excretes a sugary solution known as “honeydew” (similar to aphids, whiteflies, and other sucking insects). Heavy infestations of crapemyrtle bark scale produce sufficient honeydew to coat leaves, stems and bark of the tree. This honeydew, in turn, will eventually

turn black as it is colonized by a concoction of fungi, called sooty mold. Although crapemyrtles rarely die as a result of crapemyrtle bark scale infestation, the sticky leaves and black trunks greatly reduce the attractive appearance of the tree.

Immature crapemyrtle bark scale are hard to see with the naked eye, but adult scale covers and egg sacs are frequently visible on the upper branches and trunk of the tree. These scales include larger, white, oval (female) and smaller, elongate (male) scales. Both male and female scales of the crapemyrtle bark scale are immobile, and will “bleed” pink blood when crushed.

Heavy infestation of crapemyrtle bark scale with sooty mold. Presence of ladybeetle pupa indicates some predation. Photo by Erfan Vafaie.

Origin and Distribution

The crapemyrtle bark scale is native to Asia, and had previously been reported from China, Japan, and Korea. In its native range, it has been reported on plants from 16 different genera and 13 families, most notable persimmon and pomegranate.

Since its introduction, crapemyrtle bark scale has spread across most of the southeastern United States. Human transport on infested nursery material likely accounts for the long distance spread of the scale. Short distance spread likely occurs via wind or by hitchhiking on birds, mammals and larger flying insects.

Habitat & Hosts

Crapemyrtle bark scale is found almost exclusively on the bark. Within a tree, first stage crawler numbers are similar on both upper and lower branches, based on trapping on 12 trees in College Station TX throughout one season (Vafaie et al., 2015).

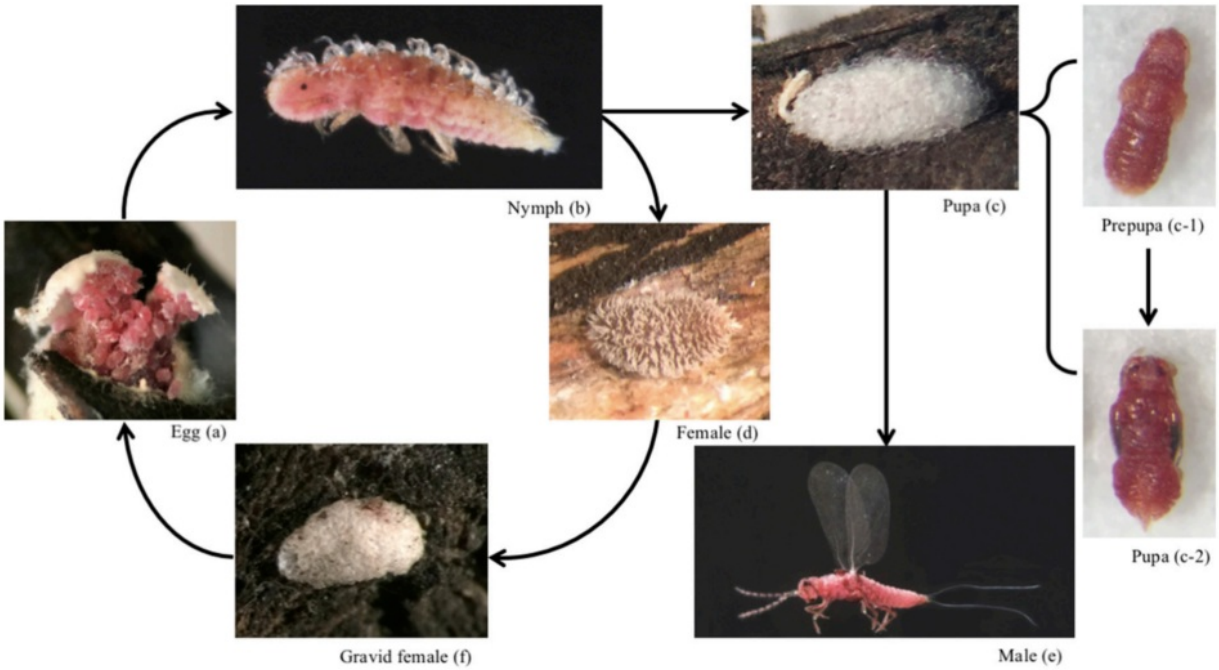
In the U.S., crapemyrtle bark scale has been seen primarily on crapemyrtle *(Lagerstromia spp.),* but also more recently confirmed on American beautyberry *(Callicarpa americana.).* Based on the literature from its native range (Wang et al. 2016a), crapemyrtle bark scale

may be found on additional plant families. Although not yet confirmed, some additional plant hosts of crapemyrtle bark scale may include:
(Click scientific name for distribution in the U.S.)

- Pomegranate (*Punica granatum*)
- Axlewood (Anogeissus sp.)
- Japanese/Littleleaf Box (*Buxus microphylla*)
- Chinese Hackberry (*Celtis sinensis*)
- Sissoo/Indian Rosewood (*Dalbergia sp.*)
- Japanese/Kaki/Asian Persimmon (*Diospyros kaki*)
- Common Fig (*Ficus carica*)
- Needlebush (*Glochidion puberum*)
- Soybean (*Glycine max*)
- Border privet (*Ligustrum obtusifolium*)
- Mallotus japonicus
- Paradise apple (*Malus pumila*)
- Myrtle (*Myrtus sp.*)
- Raspberries, blackberries, dewberries, etc. (*Rubus sp.*)

Life Cycle

After hatching, the scale emerging from the egg is called a crawler. This first life stage (1st instar) is mobile and is the only stage that can disperse (via wind or animal transport). Once settled on the tree, the crawler remains in the same spot for the remainder of its immature life. Nymphs actively feed and produce honeydew. Mature female adults form a waxy protective covering (ovisac), mate with a male scale, and begin laying eggs. Females lay between 114 to 320 eggs in their lifetime (Jiang et al. 1998) and die in the egg sac. Upon completing their immature lifecycle, males pupate within the adult scale cover, and emerge as a winged adult.



Life cycle of Acanthococcus lagerstromiae: (a) egg; (b) nymph; (c) pupae covered with white sac; (c-1) prepupa; (c-2) pupa; (d) adult female; (e) adult male; and (f) ovisac containing the gravid adult female. Figure from Wang et al. (2016b).

Management

If you live in the State of Texas, contact your local county agent or entomologist for management information. If you live outside of Texas, contact your local extension for management options.

Monitoring

Effective management of crapemyrtle bark scale relies on good monitoring practices to ensure that pesticides are targeted towards vulnerable stages. Spraying contact insecticides on egg sacs or pupae may have very little efficacy. Applications should be timed to target crawlers or immature nymphs before coating themselves in the white wax. Crawler activity appears to peak between mid-April to beginning of May for several locations across Texas and Louisiana. To determine crawler activity at your location, consider using double-sided sticky tape traps around the branch of the tree. Remove and replace with a new piece of tape weekly, and check tapes for presence of crawlers (see images below). When numbers of crawlers start to increase, consider control measures below.

Biological Control

Several natural enemies have been found in the landscape to provide suppression of crapemyrtle bark scale. In a lady beetle exclusion trial (pesticide treatment for lady beetles), natural enemies were found to provide approximately 75% suppression of crapemyrtle bark

scale (Merchant et al., unpublished data). Care should be taken to preserve natural enemies where possible.

Chemical Control

Several pesticides have been investigated for efficacy against crapemyrtle bark scale, with most success from the following active ingredients:

- Imidacloprid (as a drench)
- Dinotefuran (as a drench or bark spray)
- Pyriproxyfen (as a bark spray)
- Buprofezin (as a bark spray)
- Bifenthrin (variable results, as a bark spray)

Drench applications should be made very early in the season, at the time of bud break (around March in Texas), since these drench insecticides can take about 60 days to translocate into the plant to be effective against the scale. The bark spray applications should ideally be made when crawlers are out and exposed; typically near mid-April and beginning of May. Spraying female egg sacs and male pupae may not be effective. Insecticide applications will not remove white spots or sooty mold, but prevent future scale population growth. Crapemyrtle trees shed their bark, and if crapemyrtle bark scale has been effectively managed, no new white spots or sooty mold should form after bark shedding. Please note that crapemyrtle aphids, a common pest found on crapemyrtle leaves, can also be a source of honeydew and subsequent sooty mold.

Crapemyrtle bark scale crawlers stuck on double-sided sticky tape. Each square represents 1/4 sq. in. Photo by Erfan Vafaie

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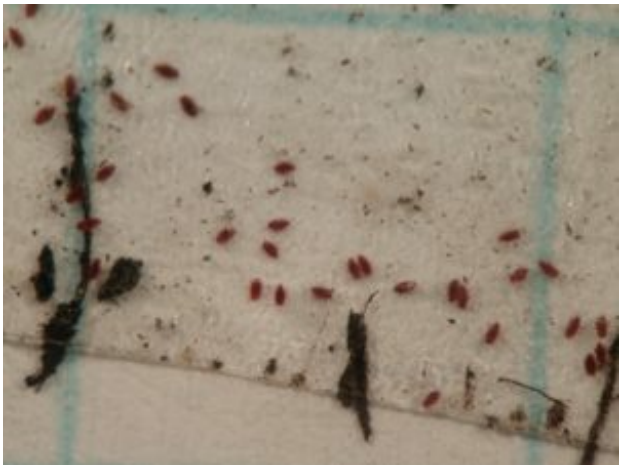
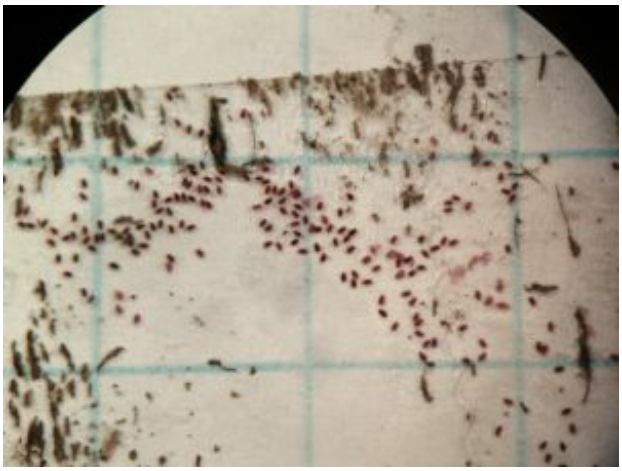


Lady beetle pupa and adult, possible Hyperaspis bigeminata. Photo by Erfan Vafaie

Lacewing larva. Photo by Erfan Vafaie



Related Publications

Vafaie et al. (2018). Spread and management of *Acanthococcus* (=*Eriococcus*) *lagerstroemiae*Kuwana (Hemiptera: Eriococcidae) on crapemyrtle (*Lagerstroemia spp.*) in the USA. International IPM Symposium. Poster.

Gu, M. (2018). Alternative hosts of crapemyrtle bark scale. Texas A&M AgriLife Extension.

Miller et al. (2017). Crapemyrtle bark scale: a pretty plant, an invasive pest, and a plan to protect pollinators. Poster.

Vafaie et al. (2017). Bark and systemic insecticidal control of *Acanthococcus* (=*Eriococcus*) *lagerstromiae* (crapemyrtle bark scale) on landscape crapemyrtles, 2016. Arthropod Management Tests, 42: tsx130.

Vafaie et al. (2015). Spread and management of *Eriococcus lagerstromiae* Kuwana (Hemiptera: Eriococcidae) on crapemyrtle. Entomological Society of America. Poster.

Gu et al. (2014). Crapemyrtle bark scale: A new exotic pest. Texas A&M AgriLife Extension.

Gu et al. Crapemyrtle Bark Scale National Research Team Website. StopCMBS.com

Citations

Jiang, N.; Xu, H. (1998) Observation on Eriococcus lagerstroemiae Kuwana. J. Anhui Agric. Univ., 25: 142–144. (In Chinese)

Merchant et al. (2014). Discover and spread of *Eriococcus lagerstromiae* Kuwana (Hemiptera: Eriococcidae), a new invasive pest of crape myrtle, *Lagerstromia spp.* Entomological Society of America. Poster.

Wang et al. (2016a). Crapemyrtle bark scale: a new threat for crapemyrtles, a popular landscape plant in the U.S. *Insects*, 7(4): 78.

Wang, Z.; Chen, Y.; Knox, G.W.; Diaz, R. (2016b). Crape Myrtle Bark Scale. Available online: http://www.lsuagcenter.com/~/media/system/7/8/d/1/78d165df43ac0d4767607d88dadfb841/pub3440bugbizcrapemyrtlebarkscale_final.pdf (accessed on 16 May 2016).

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