

# Landscape

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**Section Editor**

## Biology and Potential Impacts of the Emerging Pest, Crapemyrtle Bark Scale

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**Significance to Industry** Crapemyrtle bark scale (CMBS), *Acanthococcus* (= *Eriococcus*) *lagerstroemiae* (Kuwana) (Eriococcidae: Acanthococcus), is an emerging pest in the U.S. that threatens the production and landscape use of crapemyrtle (*Lagerstroemia* spp.) as well as other crops. Establishment of CMBS in the U.S. will have huge economic and social impacts on the Green Industry and homeowners due to the lack of comparable replacements and cost to treat and manage this pest.

**Nature of Work** Crapemyrtle is a widely grown woody ornamental valued for its summer flowering, wide range of sizes and habits, forms with burgundy-colored foliage and ornamental bark, ability to adapt to diverse landscape/soil conditions, general hardiness, drought tolerance, and ease of care. It is the top-ranked summer flowering tree with a wholesale value of \$66 M/yr (1).

CMBS is a felt or bark scale (Hemiptera: Eriococcidae) native to Asia where it has been reported on plants from 11 families (Buxaceae, Cannabaceae, Combretaceae, Ebenaceae, Euphorbiaceae, Fabaceae, Lythraceae, Moraceae, Myrtaceae, Oleaceae, and Rosaceae) (7). In addition to crapemyrtle, many reported economically important plants include apple (*Malus*), boxwood (*Buxus*), brambles (*Rubus*), cleyera (*Ternstroemia*), fig (*Ficus carica*), persimmon (*Diospyros kaki*), pomegranate (*Punica granatum*), privet (*Ligustrum*) and soybean (*Glycine max*).

**Results and Discussion** The first sighting of CMBS occurred on crapemyrtles in landscapes of north Texas in 2004 (6). Since then, CMBS has rapidly spread to other areas in Texas (from Dallas/Ft. Worth, to Austin, to Houston, to Shreveport, LA and places in between) and 11 states (2).

CMBS-infested plants are characterized by black sooty mold on the bark resulting from honeydew secreted by the scale (4). The presence of sooty mold may confuse the diagnosis since it is also commonly associated with infestation by crapemyrtle aphid

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(*Tinocallis kahawaluokalani*). On CMBS-infested trees, masses of CMBS adults, nymphs and ovisacs are seen as white or gray felt-like encrustations on small twigs to large trunks, often occurring near pruning wounds or in branch crotches. When crushed, the scale “bleeds” a pink hemolymph liquid. The sooty mold and felt-like encrustations reduce aesthetic value. In addition, field observations suggest heavy infestations of CMBS reduce the size of crapemyrtle flower panicles, delay flowering, and kill small twigs (5).

Information on CMBS biology and ecology is limited. CMBS eggs are 0.35 mm (0.01 inch) in length, pink and laid inside a white felt-like covering secreted by the female (7). Nymphs (crawlers) are 0.5 mm (0.02 inch) in length, pink and highly mobile for 1 to 2 days, eventually settling on stems and becoming sessile. Adult females are approximately 2 mm (0.08 inch) in length and covered in waxy white filaments giving an overall appearance of white to gray in color. Female scales lay large numbers of eggs under the scale coverings, producing up to four generations per year (4). Females and nymphs secrete honeydew as a result of feeding. Male pupae are pink, immobile and covered by white sacs (7). Adult males are pink, generally smaller than females, winged, lack mouthparts and produce two long white wax filaments from the tip of the abdomen. Locally CMBS is thought to spread in the crawler stage, perhaps with the assistance of wind, birds or mammals. Long distance transport likely occurs by movement of infested plants or plant parts (i.e. branch trimmings).

Currently in the natural environment, there are no U.S. reports of CMBS on the other host plants recorded in Asia. However, CMBS has been found and confirmed on native American beautyberry (*Callicarpa americana*, Verbenaceae) in Texarkana, TX and Shreveport, LA (3). This is concerning given the wide distribution of this native plant, and also adds Verbenaceae as a plant family hosting CMBS.

Currently, a multistate team is using a transdisciplinary approach and guidance from an advisory board and international collaborators to develop improved management strategies for CMBS. Contact insecticides are ineffective because the waxy covering of CMBS prevents absorption and CMBS often is located beneath exfoliating bark. Contact insecticides also may reduce populations of natural predators. The most successful management techniques currently include use of neonicotinoid insecticides applied as root drenches or soil injection. Ongoing research shows success with other insecticides (4) and is being reported in the Entomology Section of the 2018 SNA Research Conference.

Current management recommendations, extension publications and other CMBS resources are available on the Crapemyrtle Bark Scale Resource Website, <http://stopcmbs.com/>, as well as on the Crapemyrtle Bark Scale webpage of the Early Detection & Distribution Mapping System, <https://www.eddmaps.org/cmbs/>, a collaboration with the Center for Invasive Species and Ecosystem Health at the University of Georgia.

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