What's Your Flavor?

Bee Preferences for Crape Myrtle Cultivars

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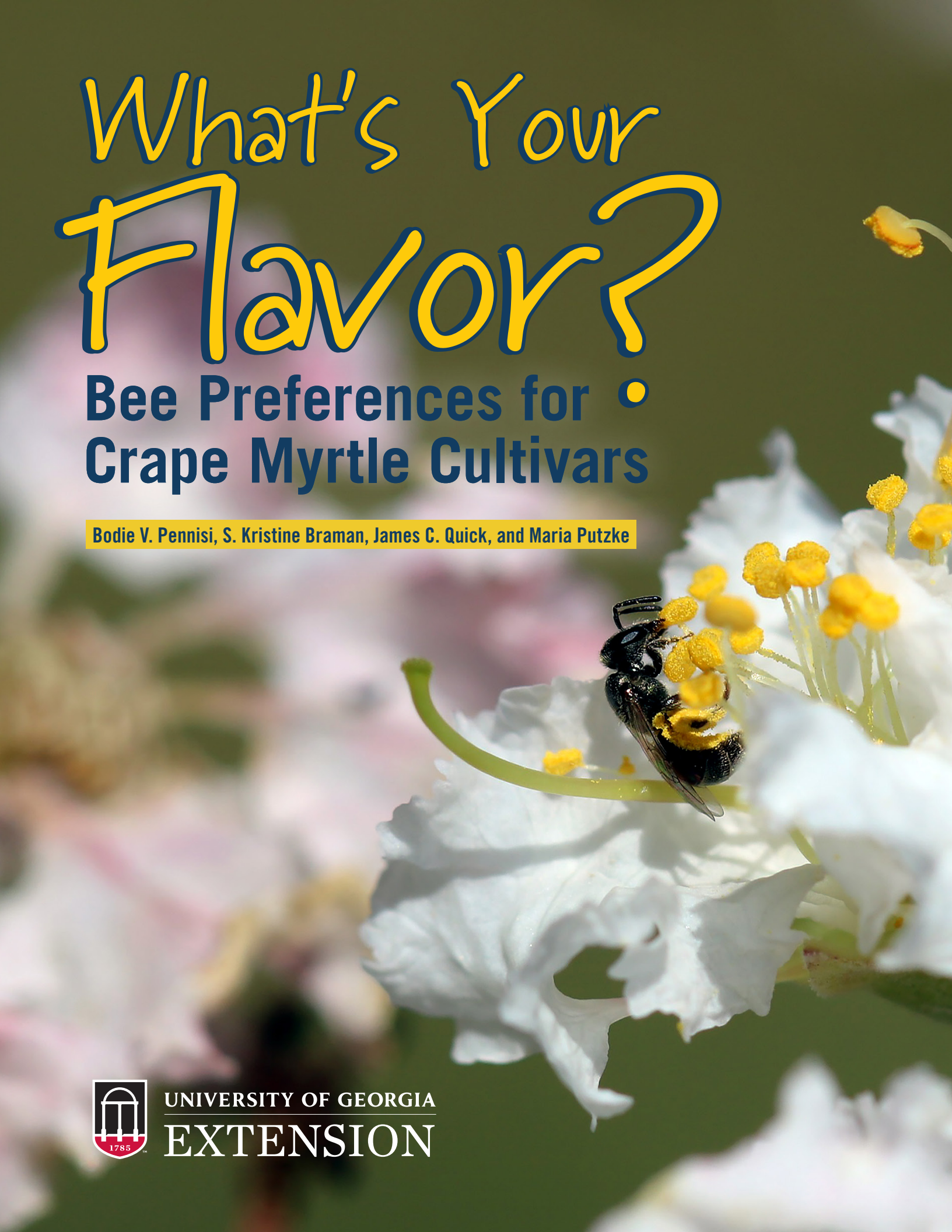

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Crape myrtles and pollinators

Crape myrtles, *Lagerstroemia* spp., are popular landscape shrubs and small trees. Native to China, Japan, and Korea southward to Oceania, crape myrtles have been cultivated in the U.S. for more than 175 years. Cultivars range from 3-foot shrubs to 30-foot-tall trees, and they are graced with large panicles of white, pink, lavender, purple, red, and many colors in between. Among cultivars, crape myrtles have a wide range of tolerance to key pests and diseases, such as powdery mildew, flea beetles, crape myrtle aphids, and Japanese beetles. The plant's flowers are widely admired by humans and can serve as nectar and pollen sources for pollinators. With the recent decline in pollinator health and diversity,[1] pollinator visitation, pest susceptibility, and horticultural attributes should all be considered when choosing crape myrtle cultivars for home and commercial landscapes.

Although crape myrtles are attractive to pollinators, they are prone to a few pest problems for which systemic insecticides are sometimes applied. It's important to select products that control key pests while causing minimal negative effects on natural enemies and pollinators. This non-native plant provides pollen for native bee species and honey bees, and a study done in Florida found that bees had varied preferences among 14 cultivars.[2] University of Georgia researchers studied pollinator preferences by examining bee visitation to 40 crape myrtle cultivars at the UGA Mountain Research and Education Center in north Georgia. The study observed crape myrtle cultivars for pollinator visitation during July and August 2015 and 2016.[3]

Crape myrtle trials at the University of Georgia Mountain Research and Education Center in Blairsville.

Photo: James Quick

Bee visitation results

Although all established crape myrtle cultivars were visited by bees, the UGA research team found that the plant preferences of bee species varied. The two most visited cultivars among all bees during two years of study—including honey bees, carpenter bees, and several small bee species—were 'Seminole', a large shrub with pink flowers, and 'Victor', a small shrub with red flowers. Bumble bees, however, were most commonly observed visiting 'Apalachee', a large shrub with lavender flowers. 'Biloxi', 'Red Rocket', and 'Raspberry Sundae' were visited least often by all bees. Plant height also significantly influenced bee visitation. Among all cultivars, bees were most often observed on the small shrub category, followed by medium and large shrubs, with the fewest observations on the small tree category.

Flowers on 'Seminole', 'Victor, and 'Apalachee' crape myrtles attracted the most bees.

Photo: James Quick

Bumble bees, however, were more frequently observed on the medium shrub cultivars, followed by large shrubs, small shrubs, and finally, small trees. Honey bees were most frequently observed in the small shrub category, followed by large shrubs, then medium shrubs and small trees. Carpenter bees were observed in similar numbers among small, medium, and tall shrubs and less frequently on the small tree cultivars.

Bees visited crape myrtles in early August during both years of study, and small bees were the most numerous. Honey bees were also frequently observed visiting crape myrtle flowers. While nectar and pollen content were not evaluated, the numbers of total bees, honey bees, bumble bees, small bees, and carpenter bees varied significantly among the different flower color categories. Bees most frequently visited dark pink, dark purple, and white flowers. Honey bees in particular were most frequently seen on pink-flowered cultivars, while bumble bees were most numerous on lavender-flowered and dark purple cultivars.

Bumble bee (left) and small bee (right) visiting crape myrtle flowers.

Photos: James Quick and Bodie Pennisi

What this means for us

Previous work has suggested that suburban landscapes in eastern North America have the potential to host relatively diverse and intact bee communities. Our developing understanding of pollinator attraction to urban plantings has created more consumer options, and this study has found that many factors contribute to plant attractiveness for pollinators and other beneficial insects in urban and rural settings. Our current findings have demonstrated the influence of cultivar, flower color, and plant height on bee visitation among crape myrtles. Cultivars were not equally attractive to all bee categories and could potentially be more narrowly selected based on the target of conservation efforts. Crape myrtles, which have become a dominant feature of Southeastern U.S. landscapes, offer the opportunity to provide a forage resource for native and honey bees, especially during late-summer time periods when fewer floral resources are available. Crape myrtles can bloom as early as May in the Deep South and can continue into the fall in more northern limits of the range, which may also expand with climate change. Crape myrtles bloom on new growth, and flowering times could be adjusted by pruning in order to be accessible to bee species at the most opportune times.

The growing body of knowledge detailing the pest management needs of various cultivars, horticultural attributes, and comparative attractiveness to pollinators offers the consumer choices in plant preference that minimize the need for intervention for insect or disease suppression and increase the likelihood of bee and other beneficial insect conservation. 'Victor', 'Seminole', and 'Apalachee', the most frequently visited cultivars among the 40 in our study have demonstrated fair to good disease resistance but are moderately susceptible to Japanese beetles and other insect pests that may require management.

A natural pest enemy, this well-disguised praying mantis is hiding among crape myrtle flowers (left). The Japanese beetle is a pest of many ornamentals (right).

Photos: Bodie Pennisi

References:

[1]Sanchez-Bayo, F., & Wyckhuys, K. A. G. (2019). Worldwide decline of the entomofauna: a review of its drivers. *Biological Conservation*, 232: 8-27.

[2]Riddle, T. C., & Mizell, R. F. (2016). Use of Crape Myrtle,Lagerstroemia(Myrtales: Lythraceae), Cultivars as a Pollen Source by Native and Non-Native Bees (Hymenoptera: Apidae) in Quincy, Florida. *Florida Entomologist, 99*(1), 38–46.

[3]Braman, S. K., & Quick, J. C. (2018). Differential Bee Attraction Among Crape Myrtle Cultivars (Lagerstroemia spp.: Myrtales: Lythraceae). *Environmental Entomology, 47*(5), 1203–1208.

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