

Flea beetle susceptibility

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Metallic flea beetles can quickly defoliate susceptible crape myrtle cultivars.

Flea beetle susceptibility

By Cecil Pounders,
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Cultivar selection could help control this major crape myrtle pest

Crape myrtle is the most popular small, flowering tree in the South, with annual wholesale production valued at more than \$30 million.

Common insect pests of crape myrtle include the crape myrtle aphid, Japanese beetle and metallic flea beetle. The metallic flea beetle does not appear to be a pest of crape myrtles in established landscape plantings, but is a serious threat to production nurseries.

Flea beetle populations can increase rapidly, and the pest can be difficult to control. To

help manage these pests, research has been conducted to see which varieties are most resistant. Results show that crape myrtles with *Lagerstroemia fauriei* parentage are most resistant, but there are some exceptions.

A look at the villain

Flea beetles that feed on crape myrtle are believed to migrate from wild weeds in the Lythraceae and Onagraceae families growing in or around production nurseries. Adult flea beetles are metallic blue to green and have



Adult flea beetles are metallic blue to green and scatter quickly from plants when disturbed.

hind legs that allow them to jump and scatter quickly from plants when disturbed.

Female flea beetles lay small, orange eggs on the upper and lower surfaces of the leaves of hosts. Larvae hatch and feed on leaf tissue during early development, then drop or crawl to the ground where they bury themselves in soil or leaf litter and pupate.

They emerge as adults within a few weeks in early to midsummer, or the following spring if pupation occurs in late summer. Metallic flea beetles have two to three generations per year in many areas of the South.

Sexually active adult beetles are opportunistic feeders of new flushes of crape myrtle foliage. They fly into production nurseries suddenly and unpredictably in large numbers from surrounding vegetation. They can decimate entire fields of crape myrtles in just a few days.

Flea beetle feeding on crape myrtle foliage regularly causes dramatic defoliation of new growth during commercial production from Oklahoma to Virginia and south to the Gulf Coast. Since beetles migrate to crape myrtles from vegetation away from the nursery, it's difficult for growers to anticipate outbreaks and properly time chemical applications to prevent damage without almost daily scouting.

When detected, metallic flea beetle infestations can be eliminated with properly timed pesticide applications. Extensive scouting and expenses associated with pesticide applications increase production costs. Identification

Crape myrtle resistance to metallic flea beetles

Cultivar	<i>L. fauriei</i> parentage	Flea beetle resistance
'Acoma'	Yes	Resistant
'Apalachee'	Yes	Moderately resistant
'Arapaho'	Yes	Moderately resistant
'Biloxi'	Yes	Moderately resistant
'Byers Standard Red'	No	Moderately susceptible
'Byers Wonderful White'	No	Moderately susceptible
'Carolina Beauty'	No	Moderately susceptible
'Catawba'	No	Susceptible
'Cedar Lane Red'	No	Moderately susceptible
'Centennial'	No	Moderately susceptible
'Centennial Spirit'	No	Moderately susceptible
'Cheyenne'	Yes	Moderately resistant
'Chickasaw'	Yes	Moderately resistant
'Choctaw'	Yes	Moderately susceptible
'Comanche'	Yes	Moderately susceptible
'Country Red'	No	Moderately susceptible
Dynamite	No	Susceptible
'Fantasy'	Yes	Moderately resistant
'Hardy Lavender'	No	Moderately susceptible
'Hope'	No	Moderately susceptible
'Hopi'	Yes	Susceptible
'Lipan'	Yes	Resistant
'Low Flame'	No	Moderately susceptible
'Miami'	Yes	Moderately resistant
'Muskogee'	Yes	Resistant
'Natchez'	Yes	Resistant
'Okmulgee'	No	Moderately susceptible
'Osage'	Yes	Resistant
'Ozark Springs'	No	Moderately susceptible
'Pecos'	Yes	Moderately susceptible
'Pink Ruffles'	No	Moderately susceptible
Pink Velour	No	Moderately susceptible
'Pocomoke'	Yes	Moderately resistant
'Potomac'	No	Moderately susceptible
'Powhatan'	No	Moderately susceptible
Raspberry Sundae	No	Moderately susceptible
Red Rocket	No	Moderately susceptible
'Regal Red'	No	Moderately susceptible
'Sarah's Favorite'	Yes	Moderately resistant
'Seminole'	No	Moderately susceptible
'Sioux'	Yes	Moderately resistant
Tightwad Red	No	Susceptible
'Tonto'	Yes	Resistant
'Tuscarora'	Yes	Resistant
'Tuskegee'	Yes	Moderately resistant
'Twilight'	No	Susceptible
'Velma's Royal Delight'	No	Moderately susceptible
'Victor'	No	Moderately susceptible
'Wichita'	Yes	Moderately resistant
'William Toovey'	No	Moderately susceptible
'Yuma'	Yes	Moderately resistant
'Zuni'	Yes	Moderately susceptible

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TOP: New flushes of growth are most susceptible to flea beetle damage.

BOTTOM: Metallic flea beetles migrate into nursery fields from wild weeds in the Onagraceae family, including primrose.

and production of clones with natural resistance would reduce or eliminate such expenses.

Flea beetles appear to have feeding preferences for certain crape myrtle cultivars. In fields planted with a variety of cultivars, some cultivars have new growth defoliated while others have little or no injury.

Research results

Both field and laboratory trials were conducted. The general trend was that cultivars lacking *L. fauriei* parentage had the highest metallic flea beetle damage. *L. fauriei* was introduced into the United States in 1956, and was bred with *L. indica* to produce hybrids resistant to powdery mildew. The most popular of these are a series of introductions from the U.S. National Arboretum.

The varieties appearing the most resistant are 'Acoma,' 'Lipan,' 'Musko-gee,' 'Natchez,' 'Osage,' 'Tonto' and 'Tuscarora.'

Integrated pest management practices can reduce pesticide use while improving control. Knowledge that certain cultivars have high resistance to metallic flea beetle



Without regular scouting, large flea beetle populations can explode.

feeding can be incorporated into IPM programs to maintain insect control in commercial plantings.

Scouting at regular intervals for presence of beetles should focus on new growth flushes of pure *L. indica* cultivars, such as 'Carolina Beauty,' 'Country Red,' Dynamite, Red Rocket 'Twilight' and 'Regal Red.'

Cultivars with little or no susceptibility do not need to be monitored. However, those cultivars that are susceptible will probably require treatment to control infestations, so the susceptible and resistant cultivars should be segregated to reduce the size of areas requiring pesticide applications.

From a breeding perspective, knowing which species and cultivars are resistant to major pests provides information necessary to select parents that can be used to develop new cultivars with an increased range of desirable horticultural traits incorporating multiple sources of pest resistance.

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