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Crapemyrtle Aphid

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Introduction

The crapemyrtle aphid, *Tinocallis kahawaluokalani* (Kirkaldy), has historically been the most important sap-sucking insect pest affecting crapemyrtle in the United States. Native to Asia, crapemyrtle aphids (CMA) are widespread in the US, particularly where crapemyrtle is commonly used as an ornamental plant. CMA is monophagous, feeding exclusively on crapemyrtles. Severe infestations can result in significant damage, diminishing the plant's aesthetic quality.

Life cycle

CMA completes its life cycle from egg to adult in about a week during warm weather conditions (between 70-90ºF). This short cycle allows for multiple generations during the growing season. The overwintering eggs begin to hatch in spring when leaf buds emerge and the aphids feed on the underside of leaves (Fig. 1). CMA measures $^{1}/_{16}$ to ⅛ inch (1.6 - 3.2 mm) in length, are pale yellowish green with spots on the abdomen that darken to black in later nymphal stages. Adults can be wingless, while winged adults have clear wings with dark markings. During the growing season, female aphids give birth to live first-instar nymphs without mating (parthenogenic reproduction). This allows for rapid population growth, especially under favorable conditions like warm temperatures and abundant food. CMA has four nymphal stages before becoming adults. As the growing season ends, the sexual adult stage appears. After mating, the females lay eggs that overwinter on the bark of crapemyrtle trees.

Figure 1*. Crapemyrtle aphids on leaf undersides. Picture credits: Matthew Bertone (North Carolina State University) (Left), Alfred Daniel Johnson (TSU) (Center), Kripa Dhakal (TSU) (Right).*

Damage

CMA reproduces rapidly and has the potential to reach damaging levels very quickly. Both nymph and adults feed on plant sap by inserting their mouthparts into tender, newly emerging leaves. As they feed, they excrete a sticky substance known as honeydew, which coats leaves, stems, and other surfaces. This honeydew serves as a substrate for sooty mold, a black fungus that can cover the entire plant, resulting in unsightly discoloration (Fig. 2). Severe infestation can obstruct photosynthesis, potentially leading to premature leaf drop or complete defoliation of the affected plants. Additionally, aphids inject saliva into the leaves while feeding leading to yellow spots on leaves. The honeydew can also attract other pests, such as ants, which may protect the aphids from natural predators.

Figure 2. *Sooty mold on crapemyrtle leaves. Photo credit: Kripa Dhakal.*

Figure 3. *Predators of CMA: Lady beetle (adult and larvae) (Left) and green lacewing eggs (Middle) and adult (Right). Photo credit: Kripa Dhakal.*

Management

Monitoring and cultural management

Monitoring for CMA should begin in early spring with inspections focusing on the undersides of leaves. Yellowing leaves, sticky honeydew, or sooty mold often indicate heavy infestations. Pruning branches for healthy tree architecture during winter helps remove overwintering eggs. Planting less susceptible crapemyrtle varieties is another management strategy. Cultivars that have shown at least moderate resistance to CMA are: 'Acoma', 'Apalachee', 'Biloxi', 'Caddo', 'Centennial Spirit', 'Choctaw', 'Comanche', 'Fantasy', 'Hopi', 'Lipan', 'Miami', 'Muskogee', 'Natchez', 'Osage', 'Pecos', 'Sioux', 'Tonto', 'Tuscarora', 'Tuskegee', 'Victor', 'Wichita', 'Yuma', and 'Zuni'. Higher aphid populations have been reported on hybrid cultivars of *Lagerstroemia indica* × *fauriei* than on cultivars of *L. indica*.

Biological control

Natural predators such as lady beetles, green lacewings, hoverflies, and parasitic wasps (Fig. 3) help regulate CMA populations. These are more effective in landscape environments compared to production settings.

Chemical control

Systemic insecticides like neonicotinoids are widely used to manage CMA in urban landscapes. Horticultural oils and insecticidal soaps can be applied as an early dormant spray after leaf drop, with repeat applications recommended as aphids

reappear. Systemic neonicotinoids (acetamiprid, dinotefuran, imidacloprid) and selective insecticides like abamectin, flonicamid, and flupyradifurone can reduce CMA densities. However, these insecticides are harmful to pollinators and natural predators so these products should be the last resort when managing CMA.

Insecticides should be used responsibly. Read and follow all label instructions and safety precautions. Table 1 lists some of the products commonly used to control aphids.

Table 1. Chemical insecticides for the management of aphids in nursery and landscape sites.

IRAC#[1]	Active Ingredient	Trade Names[2]
1A	carbaryl*	Sevin SL
	methiocarb	Mesurol 75W[N]
1B	acephate*	Orthene, Lepitect, Precise GN[N]
	dicrotophos	Inject-A-Cide B[L]
	dimethoate	Dimethoate 4E[N], 4EC[N]
	malathion	Malathion 5EC[L]
	oxydemeton methyl	Harpoon[L], MSR Spray Concentrate[N]
3A	bifenthrin*	Menace GC, Onyx[L], Talstar S Select[N]
	cyfluthrin	Decathlon
	beta-cyfluthrin	Tempo Ultra WP[L], Tempo SC Ultra[L]
	lambda-cyhalothrin*	Demand[L], Scimitar CS[L], Scimitar GC
	cypermethrin	Demon WP[L]
	fenpropathrin*	Tame 2.4 EC[N]
	tau-fluvalinate	Mavrik Aquaflow
	permethrin	Astro[L], Permethrin Pro[L], Perm-Up 3.2EC
	pyrethrins	Tersus[N], Pyganic 5.0 EC[N]
3A + horticultural oil	pyrethrin + canola oil	Pycana[N]
3A + 4A	bifenthrin + clothianidin	Aloft, LC G[L], LC SC[L]
	bifenthrin + imidacloprid	Allectus SC[L]
	cyfluthrin + imidacloprid	Discus N/G[N]
	lambda-cyhalothrin + thiamethoxam	Tandem[L]
	zeta-cypermethrin + bifenthrin + imidacloprid	Triple Crown T&O[L]
4A	acetamiprid	TriStar 8.5 SL
	clothianidin	Arena 0.25 G[L]; 50 WDG[L]
	dinotefuran	Safari 20SG, Zylam Liquid[L], Transtect 70 WSP[L]
	imidacloprid*	Xytect 75WSP; 2F, Marathon II[N], Marathon 60WP[N], Merit[L], CoreTect[L]
	thiamethoxam*	Flagship 25WP[N], Meridian 0.33G[L]; 25WG[L]
4A + 28	thiamethoxam + chlorantraniliprole	Mainspring Xtra
4C	sulfoxaflor	Transform WG[N]
4C + 5	sulfoxaflor + spinetoram	XXpire

4D	flupyradifurone*	Altus
6	abamectin	Lucid, Avid, Aracinate TM
	emamectin benzoate	Abormectin[L]
6 + 20D	abamectin + bifenazate	Sirocco
7C	pyriproxifen	Distance IGR, Fulcrum
8D	sodium tetraborohydrate decahydrate	Prev-AM Ultra[N]
9B	pymetrozine	Endeavor
9D	afidopyropen	Ventigra
21A	tolfenpyrad	Hachi-Hachi
23	spirotetramat*	Kontos[N]
28	chlorantraniliprole	Acelepryn[L]
29	flonicamid*	Aria
28 + 29	cyclaniliprole + flonicamid	Pradia[N]
Unknown	azadirachtin	Azatin O, Azatrol EC, Ornazin EC
Unclassified	*Beauveria bassiana*	BotaniGard ES; 22 WP, Naturalis-L
	Chromobacterium subtsugae	Grandevo PTO[N]
	Isaria formosorosea (syn. *Paecilomyces fumosoroseus*)	Preferal
	horticultural oil*	Ultra-Pure Oil, TriTek, JMS Stylet Oil
	insecticidal soap*	M-Pede
	neem oil	Trilogy, Triact 70

[1]*IRAC= Insecticide Resistance Action Committee.*

[2]*Trade Names are provided as examples only and should not be considered a complete list of products available.*

[N] *= Pesticide labeled for use in nurseries but not landscapes.*

[L] *= Pesticide labeled for use in landscapes but not nurseries.*

[*]*= Active ingredients which showed efficacy in controlling CMA in research trials.*

References

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For additional information, contact your local nursery specialist at:

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http://www.tnstate.edu/agriculture/nrc/
931-668-3023

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.

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, brand, or active ingredient 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 and suitable composition, nor does it guarantee or warrant the standard of the product. The author(s) and Tennessee State University assume no liability resulting from the use of these recommendations.