

Crape Myrtle Bark Scale A New Invasive Species in North Carolina

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Goals Statement

Crape Myrtle trees in North Carolina have a new pest, the Crape Myrtle Bark Scale (CMBS). It was first discovered in the United States in 2004 in Texas, and by August 2016 when it was detected in North Carolina, it had also spread to 15 other states. In North Carolina, it was first found in the city of Mooresville, in Iredell County just north of Charlotte, in a landscape setting. CMBS was determined to be well established at the time of its discovery, leading researchers to believe it to have been in the state for an extended period-of-time. Crape Myrtle Bark Scale *Acanthococcus* (=Eriococcus) is native to Asia and can live on a variety of plants there. It has been reported on 16 genera. Here in the United States, it has been found on Crape Myrtle (*Lagerstroemia indica*) and American Beautyberry (*Callicarpa Americana*) but there is potential for many more. In the spring of 2017, a nursery grower was concerned about this new invasive scale pest. He went to a County Commissioners public hearing meeting to express these concerns. The County Administration contacted Cooperative Extension to address this need. A collaboration was formed to research this issue. While CMBS is not fatal to its hosts, it can greatly reduce the appearance of the tree and aesthetics of the landscape, as well as cause severe limb dieback. Large amounts of honeydew produced by adults and nymphs coat portions of the trunk, branches, and leaves. Sooty mold grows on the honey dew, turns the branches and surrounding plants black, which restricts growth, decreases flowering, reduces photosynthesis, and reduces the aesthetics of the landscape.

Educational Methods and Activities

Since CMBS is a new pest for our area, the authors are in the process of determining the most effective treatment times and products. Information gathered will hopefully slow the progress of this pest in the landscape and decrease the chances of occurrences in nursery material. Our study that began in the summer of 2017 models research done at Texas A&M and Louisiana State University. The North Carolina Nursery and Landscape Association and Iredell County funded the study.

The experiment was setup in a complete block design with four replications of six treatments. To monitor crawlers, double-sided sticky tape is placed on infested branches of the tree. The tape was replaced weekly though the summer on all treatments, and biweekly through the winter only on control trees. Tape was placed on grid paper to be counted to monitor the insect life cycle and chemical efficacy. As data is gathered, the most effective treatment dates will be recommended for the Piedmont region and surrounding areas of North Carolina.

Six treatments

- Imidacloprid (Merit)
- Dinotefuran (Safari)
- Bifenthrin (Crosscheck)
- Buprofezin (Talus)
- Cyantraniliprole (Mainspring)
- Control

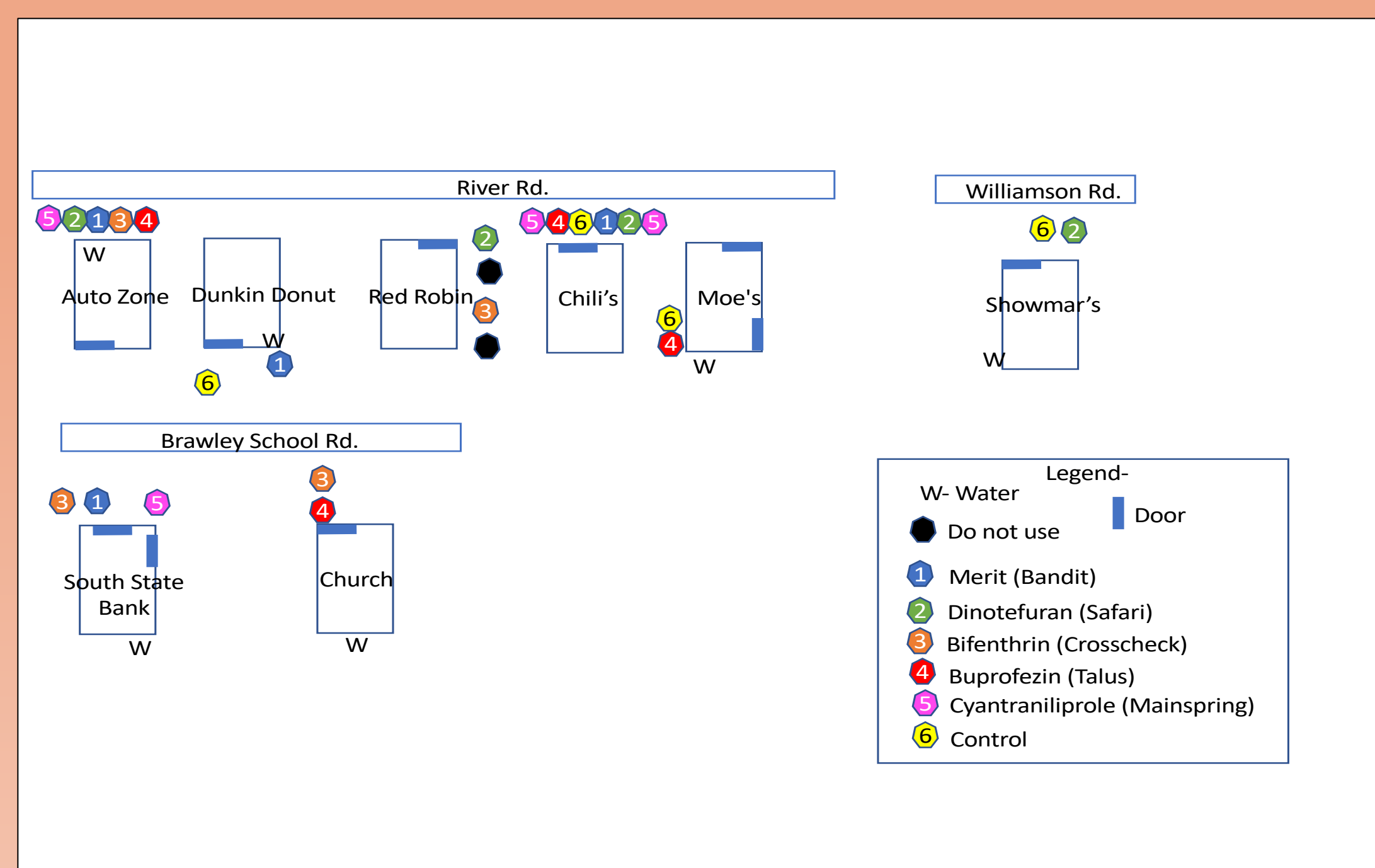
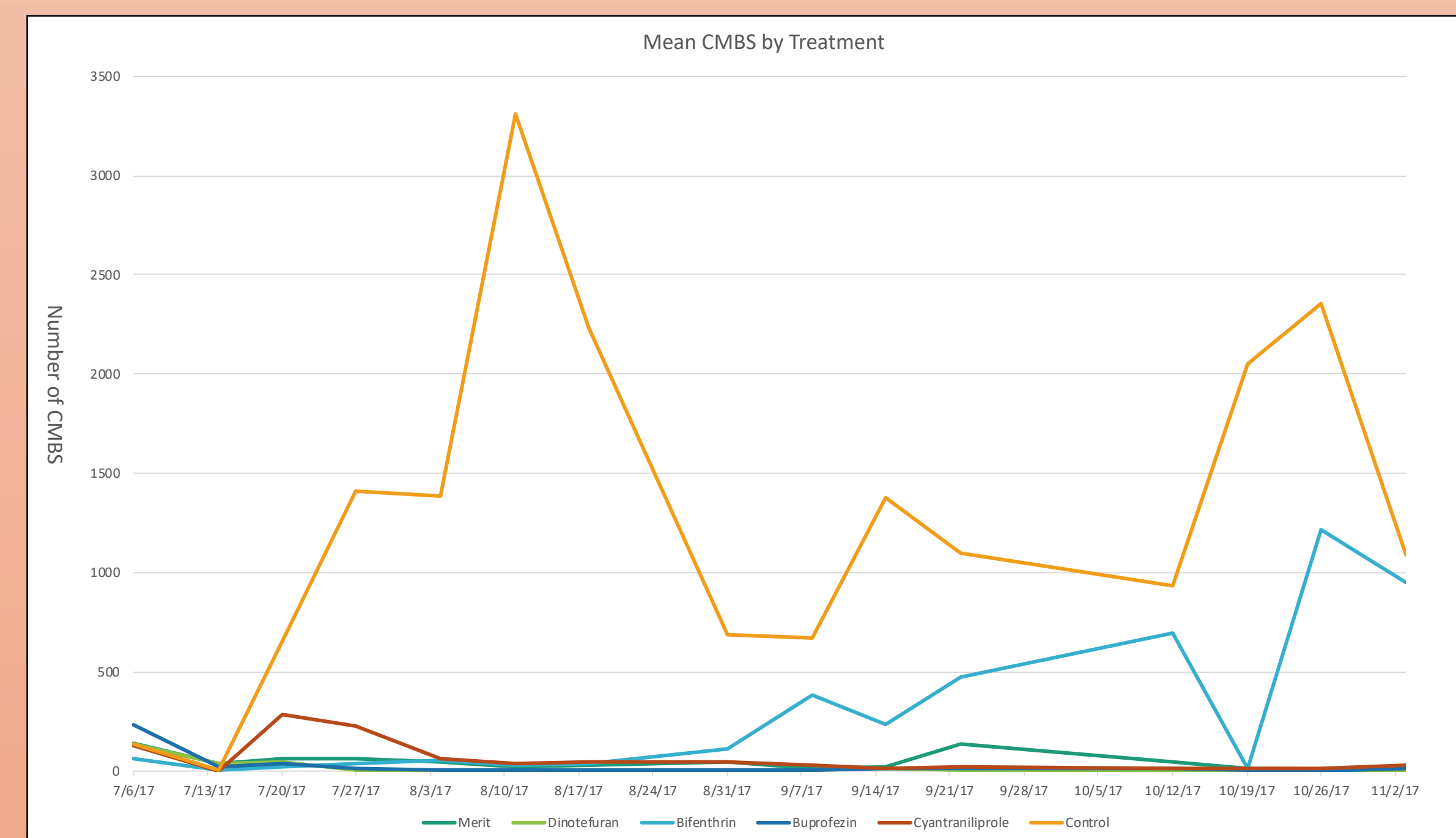


Table 1. Mean Crape Myrtle Bark Scale Population by Treatment.



Research Results

- All trees had similar populations before treatment.
- All treatments except Mainspring (Cyantraniliprole) were equally effective and significantly different than control trees from mid July to late August.
- Mainspring (Cyantraniliprole) took a few weeks to become active in the trees but after that it was significantly different from control trees.
- Bifenthrin treatment (contact insecticide) lost effectiveness and was not significantly different than the control due to it needing a reapplication.
- Populations dropped significantly in late October due to a storm and drop in temperature.
- There was natural variability in populations due to weather and multiple generations of insects.

Educational Outreach Results (2019)

Five workshops were given to 205 green industry professionals (landscape and nursery). Results from end of workshop surveys indicated:

- 66% (n=136) intend to start or increase applying recommended chemicals for bark scale control.
- 80% (n=165) intend to apply treatments at the correct time of year.
- 78% (n=159) will begin or increase identifying “good bugs” to avoid spraying them.
- 76% (n=156) intend to use recommended irrigation and/or proper cultural practices (IPM).
- 84% (n=172) will be able to correctly identify bark scale and symptoms correctly before treatments.
- 85% (n=174) intend to avoid transporting any plant material that may have crape myrtle bark scale.



Conclusions

- Nymphs overwintered and females matured in March.
- Control crawlers in late winter before maturing and reproducing.
- Talus (Buprofezin) an insect growth regulator was effective and is safe on beneficial.
- Non-neonicotinoid systemic product Mainspring (Cyantraniliprole) was effective but is very expensive.
- Many beneficial insects were found feeding on CMBS.
- Some heavily populated trees had severe dieback but generally not death.