**What to do about Lecanium (black mold / scale) on trees near pond**

Chemical treatment may not directly change cyanobacteria cells, but could disrupt other subtle balances which might give cyanobacteria an advantage.

From Cape Cod Extension:

The Lecanium scale has biological controls that usually control the ever-present populations. While the scale population was high last year, we can rest assured that the boom in scale population will likely be followed by a boom in its biological controllers in the near future, which will bring scale levels back to normal levels. The list of predators and parasites that attack the Lecanium scale is long and includes ladybird beetles, lacewings and other insects that feed heavily on the crawler stage. A parasitic wasp also uses the hardened scale for larval development. And the list goes on.

Chemical treatment of the scale will also treat or kill the biological predators. Therefore, treatment should be carefully considered before executing. If deemed necessary, the crawler stage of the insect may be treated from mid to late summer when the crawlers are actively feeding on the undersides of the leaves. Timing is crucial to be effective. Use a hand lens to be sure crawlers are present prior to treatment. Several insecticides can provide effective control through spray applications to the leaves. Applications may have to be repeated to effectively kill the crawlers. Beneficial insects will also be affected. When the scale is in its overwintering stage, dormant oils can be applied to suffocate the insects."

From Michigan State University Extension:

The oak lecanium scale, Parthenolecanium quercifex, is a common pest of ornamental trees and shrubs in the eastern US. This soft scale insect (Hemiptera: Coccidae) is primarily a pest on oak but has also been recorded on other species including hickory (Carya spp.) and birch (Betula spp).

Beginning in the summer of 2018 and again in the late spring and early summer of 2019, a widespread outbreak of lecanium scale activity on oak was reported on much of Cape Cod and Martha’s Vineyard. Samples in 2019 from Cape Cod (collected by the Elkinton Lab) and Martha’s Vineyard (originally submitted to the UMass Plant Diagnostics Laboratory) were given to Dr. Joseph Elkinton’s Laboratory (UMass) for analysis using DNA and samples from Martha’s Vineyard were sent to the USDA-ARS-Systematic Entomology Lab in Beltsville, MD for further identification. Jeremy Andersen of the Elkinton Lab reported the following: …Both species have a tendency to reach high densities when trees are stressed by other insect pests, droughts, or lack of nutrients, and/or when natural enemies are affected due to non-target effects from insecticides.”

Lecanium scales feed on the phloem of trees and shrubs generally reducing vigor. High populations can result in stunted foliage, chlorosis, twig death, and dieback, particularly due to the feeding female scales from April-May. Their feeding habits result in copious amounts of honeydew (excrement) that can cover plants and structures beneath infested trees. Honeydew, rich in sugar, may provide a substrate for sooty mold to grow. Sooty mold is black in color and it is not a plant pathogen; however, it can reduce the aesthetic value of the plant it covers. Honeydew and sooty mold in large amounts may both also be a significant nuisance on structures including outdoor furniture, patios, cars, etc.

Lecanium scales are known to have a large number of predators, parasitoids, and pathogens which often keep populations under control. Populations of lecanium scale are known to rapidly increase especially on urban trees or trees under stress. Monitoring trees for lecanium scale is an important part of management due to the ability for populations to rapidly increase as well as the likelihood of predators and parasitoids to control populations. (Therefore, management may not be necessary from year to year, but rather occasionally when population outbreaks occur. It is also important to preserve natural enemies.)

An insecticidal oil application may be made as a dormant spray, targeting the overwintering 2nd instar nymphs on the host plant twigs during that time of year, at approximately 35-145 GDD, base 50°F. Such reduced risk active ingredients may help avoid unintended suppression of parasite/predator activity. In July, or August, following egg hatch, crawlers may be targeted on the leaves with a foliar applied insecticide if damage symptoms are seen. (Again, preserving natural enemies is very important, and broad-spectrum active ingredients can kill natural enemies as well as pest insects.) Systemic insecticides applied through the soil or bark are also labelled for this pest, and may be applied after bloom.

Active ingredient options labelled for use against soft scales include, but are not limited to: abamectin, acephate, acetamiprid, bifenthrin, carbaryl, dinotefuran, horticultural oil, imidacloprid, insecticidal soap, neem oil, and pyrethrins. Read and follow label instructions for safety and proper use. Each active ingredient comes with different risks to the applicator and the environment. A summary of some of these risks may be found here, but this does not replace reading and following label instructions.

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Russ Norton, Horticulture Extension Educator, Cape Cod Cooperative Extension and Tawny Simisky, UMass Extension Entomologist