

Pine Tree Decline Research

Funded by Quail Ridge C.C.
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Pine tree decline is a serious problem on golf courses in Central and South Florida. A recent poll of golf course superintendents indicated many had a serious decline incidence with 30% responding they had experienced the problem. Of these, 77% indicated they had a moderate to high incidence of the decline symptoms. The decline begins as a yellowing of the trees, followed by a gradual loss of needles leading to death of the tree. A research project awarded to Drs. Charles H. Peacock and Roger S. Webb, Assistant Professor of Forest Pathology, with the Institute of Food and Agricultural Sciences (IFAS) at the University of Florida, Gainesville, by the Florida Turfgrass Association (FTGA) Scholarship and Research Foundation focused on screening potential causes of the decline syndrome. This work involved sampling on four golf courses. Included were Royal Poinciana C.C. and The Club at Pelican Bay (Naples), Grenelefe (Haines City) and Quail Ridge C.C. (Boynton Beach). Needles from healthy and chlorotic trees and soil samples from the perimeter of the trees were analyzed for pH, soluble salts and nutrient content. Samples were also collected from irrigation water sources to check pH, conductivity for soluble salts, and hardness. This work was completed this past spring.



The Quail Ridge Country Club Greens Committee and Property Owners Association has carried this one step further by funding an applied study to determine if an effective method can be found for treating this problem. This commitment for a three-year study will provide \$25,000 in research money for this project. Quail Ridge is a very tree-oriented landscaped community. Concern over the loss of native trees prompted Superintendent Tim Hiers to spearhead the funding of this project. He and agronomist Sathena Cabler are working in close cooperation with Drs. Peacock and Webb. (Ms. Cabler noted that Quail Ridge has a severe problem, and is continuously having dead trees removed.) Work was initiated at Quail Ridge the week of 31 May - 2 June. Trees were identified and treatments applied based on the results of the initial FTGA project. The Quail Ridge study is designed to ameliorate the decline of pines that is apparently associated with intensive landscape maintenance practices.

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Treatments have focused on correcting nutritional deficiencies associated with the trees by one of two methods: Direct injection of nutrients into tree trunks or soil drenches of nutrients into root zones. Dr. Webb has had success with injection methods on pine trees in South Florida. The soil drench treatment would be favored for a variety of reasons including lower cost, less labor involvement and less wounding of trees, but it has not been field tested as to reliability. The soil drench treatment included 15 combinations of 4 nutrients alone or in combination. This will test which single element or combination is most effective in correcting the problem, providing a soil drench treatment can be effective.



Periodic evaluation will closely monitor progress of the trees and treatment areas. Dr. Peacock is especially interested in monitoring treatment effects on turf surrounding treated trees. This is an exceptional project Quail Ridge has undertaken in joining with the University of Florida to research a persistent and damaging problem.



It is hoped this study will lead to definitive treatment for correcting the decline problem. As research results are evaluated, more information on cause, effect and treatment will be made available. ■

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