

Orangestriped Oakworm

Anisota senatoria (J. E. Smith)

Lepidoptera: Saturniidae

Coffelt, M. A.; Schultz, P. B. 1990. Development of an aesthetic injury level to decrease pesticide use against orangestriped oakworm (Lepidoptera: Saturniidae) in an urban pest management project. *Journal of Economic Entomology* 83: 2044-2049.

Objective: To determine if a monitoring program coupled with the establishment of an aesthetic injury level (AIL) could be used to manage *A. senatoria* with minimal insecticide inputs.

Abstract: The orangestriped oakworm is a native defoliator of various oaks, *Quercus* spp., in the eastern USA and Canada. In the 1980's, this species became a major pest of urban oak plantings along city streets in Norfolk, Virginia. Insecticide sprays were applied by city employees at the request of citizens to control this pest. In >50% of the citizen requests, trees had <5% defoliation. Justification for an urban pest management program for *A. senatoria* was based on the economic value of urban oak trees (\$5,131 per tree), and the large insecticide volumes sprayed for control.

The authors established an AIL based on a citizens survey to measure defoliation levels that were acceptable to homeowners. Additionally, the effects of different levels of defoliation on tree vigor were measured by root starch content. Based on the citizens survey and root starch analyses, a 25% AIL threshold was used to determine if insecticide applications were required. Monitoring and establishment of the AIL resulted in a decrease in pesticide usage by 80% at a cost savings of 55%.

Sampling Procedure: Monitor trees during peak larval periods (mid-August through September), and estimate visually the defoliation by dividing the tree into four quadrants and summing the estimated percent defoliation in each quadrant. Apply insecticides only when trees have >25% defoliation at the time of monitoring. This simple monitoring technique results in an 80.3% decrease in pesticide usage, and a 55% cost reduction in materials and labor.

Note: The results are applicable to high-value oak stands.