

MANIPULATION OF ADULT CHIRONOMIDAE (DIPTERA) PHOTOTACTIC BEHAVIOR FOR REDUCING CHIRONOMID NUISANCE IN URBAN FLORIDA

ARSHAD ALI, RICHARD J. LOBINSKE, JULIE L. BORTLES, AND ROBERT J.
LECKEL, JR.

University of Florida, IFAS, Central Florida-REC, 2700 East Celery Avenue,
Sanford, FL 32771-9608 USA

Two Navy surplus barges (each 91 x 20 ft) were equipped with one street lamp at each corner of the barge and with fourteen 60 x 80 inches white cloth panels, each panel illuminated with one 100W spotlight. Adult midge attraction to light on these barges was studied in the summer of 1998 on Lake Monroe, bordering the City of Sanford, central Florida. The barge lights were operated for two hours starting half an hour before sunset. The spotlights on each barge lured adult chironomids to the panels draped with permethrin-treated and non-treated cloth. As many as 30,000 adult chironomids accumulated in a 3 cubic ft plastic storage container placed under each panel during the 2-hr sampling periods. The lake water surface around the barges was covered with adult midges that attracted a lot of fish feeding on the adults. Permethrin-treated cloth did not cause any significantly higher adult midge mortality/capture than the untreated cloth. For reference to nuisance levels, barge collections were analyzed for relevance to nightly NJ light trap collections from lakefront Sanford. Additionally, chironomid adult emergence from within 2 km of each barge area was simultaneously assessed by submerged cone traps used overnight. This study gave encouraging results for reducing chironomid nuisance by diverting or retaining their populations in areas where there are minimal human residential, business, social or recreational activities.