A LANDSCAPE PERSPECTIVE ON STINK BUGS IN COTTON

J. J. Herbert
M. D. Toews
University of Georgia
Tifton, GA

Abstract

Understanding the biology and reproductive physiology of stink bugs may lead to the development of management strategies that are targeted at reducing landscape wide populations as opposed to preserving fiber quality and yield in a single field. Stink bugs are an economically important pest of southeastern cotton production. Currently, stink bugs are managed using whole field applications of organophosphate insecticides. We studied the reproductive biology of the brown stink bug, *Euschistus servus,* in unsprayed pilot scale farmscapes comprised of cotton, corn, peanut, and soybean to determine the role of these common agricultural hosts in population development. Four to seven acre pilot scale farmscapes were replicated at University of Georgia research stations located at Tifton, Midville, and Plains. In 2009 and 2010, stink bug populations were sampled weekly using whole plant sampling in corn and sweep net sampling in cotton, peanut, and soybean. Captured insects were brought to the laboratory where they were enumerated and classified by species, sex, and life stage. Adults from samples collected in 2010 were subsequently dissected and their reproductive organs were visually rated as non-reproductive, intermediate, or reproductive. Nymphs sampled in 2010 were classified according to instar. Regardless of year, adults were first observed in corn during late June and early July; these individuals were an even mixture of all three reproductive stages. Overall numbers of both adults and nymphs were relatively small, regardless of agronomic host, from mid-July through early September. Adults captured during that time period were predominantly classified as intermediate or reproductive. In soybean only, the population of nymphs increased sharply during the third week in September followed by an abrupt peak in adults. That adult population consisted almost entirely of individuals that were sexually immature or non-reproductive, strongly suggesting that those adults were a result of new adult emergence as opposed to immigrating to the soybeans from another host. These data suggest that late season soybean was the key developmental host for brown stink bugs. Soybean harbored the most stink bugs and was the most suitable reproductive host. By comparison, corn, cotton, and peanut did not harbor large immature populations nor marked peaks of newly emerged adults. Pest management professionals will be able to utilize these data to develop novel IPM programs that utilize spatially and temporally targeted approaches to reducing landscape wide stink bug populations.