NATIONAL PEANUT BOARD/SOUTHEAST PEANUT
RESEARCH INITIATIVE
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INSTITUTION: University of Georgia Research Foundation

PROJECT TITLE: Sources of Burrow Bug Infestation in Peanut

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The objectives of this project were to 1) identify host plants that serve as sources of peanut burrower bug invasions into peanut, and 2) determine the extent of peanut burrower bug movement among peanut fields.

Our project started with a surprise – we found that there were two bugs in our light traps that we could not easily tell apart. The first was the peanut burrower bug, *Pangaeus bilineatus*, but the second was the related species *Dallasiellus lugubris*, not previously known as a peanut pest. So, we separately considered the two species in our subsequent examination of diet and movement.

Our approach for objective 1 was to identify plant species from DNA taken from the guts of burrower bugs captured as they disperse into peanut fields. In collaboration with Randolph and Worth County Extension agents, we collected bugs using light traps from roughly June to October (2020/2021). First, we found that the peanut burrower bug was generally active earlier in the year than its twin *D. lugubris*. The two bugs fed on a similar range of plants that are commonly found near peanut fields in Georgia, including sweetgum, wild radish, cotton, pines, and various grasses, among others. Surprisingly, only 5% of the bugs that we tested were found to have fed on peanut, and only 2 of these were peanut burrower bugs. So, *D. lugubris* may be an under-appreciated peanut pest. More generally, although peanut may be important for early stages of bug development, peanut seems to be a small part of the diet of either pest species in their adult stage.

Our approach for objective 2 was to sequence DNA from burrower bugs of both species spread across five locations in Georgia, and to examine the distance and timing of burrower bug movement in south Georgia. Interestingly, we found that peanut burrow bugs (*P. bilineatus*) from different collection sites were genetically different from one another. This suggests that peanut burrower bugs do not commonly move long distances that would allow them to regularly interbreed. In contrast, bugs of the second species, *D. lugubris*, were not genetically different when collected from different sites. This suggests that *D. lugubris* moves longer distances more often than peanut burrower bug. More generally, we would predict that peanut burrower bug outbreaks would be more localized, but outbreaks of *D. lugubris* could spread more widely as the bugs move more often.