

Biology and Management of Peanut Burrower Bug in Georgia

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The peanut burrower bug, *Pangaeus bilineatus*, represents a significant threat to Georgia's peanut industry. This research addresses the need for effective, sustainable management tactics for burrower bug and seeks to improve understanding of the pest's biology in peanut production systems. The objectives of our 2018 research efforts were: 1. Evaluate commercially available runner-type peanut varieties for resistance to burrower bug feeding damage; 2. Evaluate effect of insecticide chemistry on burrower bug populations and damage in Georgia; 3. Monitor burrower bug population dynamics with UGA Extension agent maintained light trap network.

Prior to 2016 nothing was known about inherent host plant resistance (HPR) to burrower bug in commercially available peanut cultivars. Nevertheless, HPR could provide an important tool for managing this pest given the lack of effective insecticide and cultural control tactics. Burrower bug injury was low in all three years of on-farm trials. Though no significant differences in injury were detected between any cultivars in any year, GA-12Y did have the least numerical injury in two of three years and very low injury in the third year. Data will ultimately be combined over years. Laboratory bioassay results also suggest that GA-12Y may have some level of resistance to or be less preferred by peanut burrower bug.

Assessing the efficacy of chemical and cultural control tactics is critically important to the development of effective burrower bug management strategies. Two on-farm insecticide efficacy trials were conducted in Brooks County at locations with a history of burrower bug infestation. The trials examined the effect of a liquid formulation of the insecticide chlorpyrifos applied pre-plant incorporated on burrower bug population and injury at harvest. Burrower bug abundance in light traps was relatively low at both study sites. There were no differences in insect injury to peanuts in the insecticide treatment and the untreated check at either location.

The occurrence of burrower bug is sporadic in nature, and there are currently no effective area wide monitoring or field level scouting methods. Because burrower bugs are cryptic, spending most of their lives in the soil, and because populations and damage potential varies significantly from year to year, monitoring populations for pest management decision making and biological studies is difficult. A county agent maintained burrower bug monitoring light trap network was in place in 2018 for the fourth consecutive year. The data generated by this project have provided valuable insight into the population biology of the insect. Fewer bugs were captured in 2018 than in previous years, and burrower bug damage levels across Georgia as measured by tonnage reports of seg 2 peanuts were also low. Light trap data will be an important part of continuing efforts to determine risk factors associated with burrower bug infestation and injury.