Grain temperature among treatments was similar during Feb to May (data not shown). From Jun to Oct all of the insecticides, except Diacon IGR Plus and Diacon IGR Plus + PBO (Oct and Nov samples), resulted in lower grain temperature than the untreated control. Only Actellic plus PBO, Diacon IGR Plus + PBO, and Aluminum Phosphide resulted in lower temperatures compared to the non-treated. No differences among treatments were observed for grain moisture during Feb to Aug (data not shown). During Sep through Dec all of the insecticides, except Diacon IGR Plus, resulted in lower grain moisture content compared to the untreated control. Maize/rice weevil densities were low during Feb through Apr (<1 per sample) (Figure 1). During Jun weevil densities exceeded 6 and 19 per sample in the Diacon IGR Plus treated and untreated drums, respectively. All of the other insecticides resulted in <1 weevil per sample. During Jul weevil densities declined in all drums (<3). During Aug weevil densities in the untreated drums and those treated with Diacon IGR Plus exceeded 15 and 29 weevils per sample, respectively. All of the other insecticides resulted in ≤1 weevil per sample, except Sensat. During Sep only Actellic, Actellic + PBO and Sensat plus PBO maintained weevil densities below 1 per sample. During Oct only Actellic + PBO and Sensat + PBO maintained weevil densities below 1 per sample. During Nov and Dec, all of the insecticides, except Diacon IGR Plus, resulted in fewer weevils than in the non-treated. Only Actellic, Actellic + PBO, Sensat + PBO, and Aluminum Phosphide maintained weevil densities below 3.5 per sample. The addition of the insecticide synergist PBO (piperonyl butoxide) to Diacon IGR Plus (deltamethrin + methoprene) substantially improved performance.
These studies demonstrate the performance of stored grain insect management tools under Mississippi conditions. As growers store grain for longer periods of time, information from these studies will be to assist them in managing insect pests to preserve the value of stored grain.

Figure 1. Impact of selected stored grain insect pest management on maize/rice weevil densities during Feb to Dec 2023. This trial was initiated during Dec 2022.

Project Impacts/Benefits

These studies demonstrate the performance of stored grain insect management tools under Mississippi conditions. As growers store grain for longer periods of time, information from these studies will be to assist them in managing insect pests to preserve the value of stored grain.

Project Deliverables

Results have been presented at locally at grower and consultant meetings, regionally and nationally.