Minute Pirate Bug and Big-Eyed Bug Populations in Pyramided Bt Sweet Corn Bordered by Native Perennial and Pasture Border Rows

Hanna Waller, John D. Sedlacek, Karen L. Friley, Jenny Galvin, and Anjana Duwal. College of Agriculture, Community, and the Sciences, Kentucky State University, Frankfort, KY 40601

Sweet corn is an important vegetable crop grown in Kentucky. The major sweet corn ear pests are European corn borer, *Ostrinia nubilalis*, and corn earworm, *Helicoverpa zea*. Ecological control measures have been introduced to manage these pests, reducing use of broad spectrum insecticides. Conservation biological control (CBC) is a component of these approaches. Conservation Biological Control manages pests in agroecosystems using habitat management to enhance populations of natural enemies that are already present in the system. Another important advancement is the cultivation of *Bacillus thuringiensis* (Bt) sweet corn resistant to the Lepidopteran corn ear pests. This study used CBC of corn ear pests using pyramided Bt-protected sweet corn. The research was conducted at the Kentucky State University Harold R. Benson Research and Demonstration farm in Franklin County, Kentucky, during the summers of 2021 and 2022. Sixteen plots were created by splitting each of the eight larger existing plots into 25 m X 10 m plots with an unplanted strip between them and 2 m wide native perennial or pasture border rows. Yellow sticky traps 15 cm X 15 cm were deployed and replaced weekly to trap beneficial insects. The sticky traps were brought to the laboratory for identification and enumeration. Minute pirate bug populations were more abundant than big-eyed bug populations. Both species were slightly more abundant in pasture than native perennial habitats. Similarly, minute pirate bug populations were significantly larger in all four sweet corn habitats. Results will be discussed with respect to border habitat and corn hybrid.