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—Scientific Note—

Abundance and Diversity of Corn Silk Flies (Diptera: Ulidiidae) in Sweet Corn and Surrounding Habitats in the Everglades Agricultural Area and Homestead Regions

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Sweet corn (*Zea mays* L.) is the most valuable specialty crop in Florida after strawberries, tomatoes, and bell peppers. The total value of sweet corn production in Florida approaches $150 million annually. Approximately 20% of US sweet corn for the fresh market is produced in Florida, with much of the acreage in the southern region of the state. A complex of picture-winged flies (Diptera: Ulidiidae), locally referred to as corn silk flies (CSF), threatens the production of sweet corn in Florida. CSF include *Euxesta stigmatias*, *Euxesta eluta*, and *Chaetopsis massyla*. These pests are managed using frequent insecticide applications targeting adults. However, CSF are abundant throughout the year, and their larvae and adults have been documented from non-sweet corn plants including sugarcane, cabbage, radish, pepper, tomato, papaya, banana, orange, amaranth, cattail, and johnsongrass. Thus, we hypothesized that habitats surrounding sweet corn fields might provide habitats for CSF population build up. The goal of this study was to determine the abundance and diversity of CSF in sweet corn and surrounding habitats.

A survey was conducted in the Everglades Agricultural Area (EAA) during Fall 2020, Winter 2021, and Spring 2021. For each season, eight different sites on commercial farms were sampled. During the winter, four additional sites were sampled in the Homestead region (HR). Each site included three habitats, with sweet corn fields, non-crop habitats, and sugarcane fields (EAA) or palm tree nurseries (HR). The non-crop habitats were composed of Brazilian pepper, cabbage palm, lantana, ragweed parthenium, ragweed, and numerous grasses. Sampling in each habitat was conducted using five multi-lure traps baited with ammonium acetate and 1,4 dimethoxybenzene. Trapping was initiated in all habitats at a site when sweet corn was between tassel push and early silking. CSF adults were collected weekly for 2–4 weeks. CSF specimens were identified to species and data were analyzed using analysis of variance.

The three CSF species occurred from fall to spring in all sampled habitats of the EAA. In the fall, there was a trend for higher numbers of CSF adults in non-crop habitats than in sugarcane and sweet corn fields ($P < 0.1$). In the winter, differences in the numbers of CSF adults captured in the three habitats in the EAA were not detected ($P > 0.05$). However, in the HR, the numbers of CSF adults in non-crop habitats were greater than in palm tree nurseries ($P < 0.05$), with intermediate numbers observed in sweet corn fields. In the spring, CSF adults were captured in significantly higher numbers in non-crop habitats and sugarcane fields than in sweet corn fields ($P < 0.05$). CSF were generally captured in higher numbers in non-crop habitats than in sweet corn fields. Hence, avoiding weedy fields and borders that might act as refuges for CSF might improve management. CSF were also present in sugarcane fields surrounding sweet corn fields. These results emphasize the need for frequent insecticide applications to protect sweet corn fields from CSF immigrating from surrounding habitats. Further work is needed to better understand the relationship between CSF abundance and landscape composition.

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