

Cane fly, Saccharosydne saccharivora (Westw.), which originally fed on Andropogon spp., has become a pest of sugar cane in the Caribbean and neighbouring territories and is liable to serious outbreaks, especially in Jamaica. The life cycle is completed in 6½-7 weeks. The eggs are inserted into the midrib, preferably of young leaves, and adults and the five nymphal instars feed on the leaf sap. Fifty-five species of natural enemies are recorded from Jamaica.

In the field successive generations of cane fly were segregated due to sterilisation of females by the Halictophagid Stenocranophilus quadratus Pierce, and development was synchronised over wide areas due to migration of cane fly adults. Populations within fields increased in young cane and declined in old, and were largest on plant cane, well-nurtured cane and on the varieties B4362 and B41227. Outbreaks developed in plant cane and then spread by migration of adults to young cane. Regressions of egg production on leaf nitrogen were highly significant. With five population fixes for each generation, Varley-Gradwell key factor analysis showed the key factor to be the mortality between peak instars 3-5 and reproducing adults. Only Stenocranophilus was density dependent and was therefore the population regulator, while migration, one of the main components of the key factor, was density independent and therefore the means by which outbreaks occur.

Crop loss due to cane fly is serious in poor growing conditions. The most effective control to date has been an integrated scheme based on large-scale application of malathion when (1) only nymphs and adults are present (a few days every six or seven weeks), and (2) natural control has had its maximum effect, i.e. two months before harvest. Unwanted side effects included honeybee poisoning.

"These animals [pests of sugar cane] which the Creator has thought fit to form and preserve for ages, man will not be permitted to exterminate; we may, however, with propriety, strive by all means in our power, to lessen the number of these creatures which injure or destroy our property."

From Rev. L. Guilding (1828) Trans. Soc. Arts, Lond. 46: 143-153.