

MOLECULAR BIOLOGY

CUTICULAR HYDROCARBONS IN CARIBBEAN FRUIT FLIES ^{MAS}

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A population of Caribbean fruit flies, *Anastrepha suspensa*, was accidentally transported to Florida in 1965. They have since been a serious pest of many common tropical and subtropical fruits grown in Florida, including citrus fruits. The flies have become a threat to the production of citrus fruits, and every measure possible is being taken to prevent their reproduction. I propose that a sexual dimorphism exists between the cuticular hydrocarbon makeup of males and females. If there is such a dimorphism, then it is likely the result of the existence of sex-pheromones or sex-pheromone components. This would lead to the possibility of controlling *A. suspensa* via a pheromone-synthesis inhibitory compound. The cuticular hydrocarbons of *A. suspensa* males and females were analyzed using simple gas chromatography, mass spectrometry, and dimethyl disulfide derivatives. Possible sex-pheromone compounds were identified as alkadienes from this data in conjunction with bioassays of courtship behavior. Their biosynthetic pathway will be examined to better understand how alkadienes are formed in fruit flies.