

## RECENT PROGRESS IN MATING DISRUPTION USING MSTRS<sup>®</sup> DISPENSERS

Thomas C. Baker

Department of Entomology, Iowa State Univ., Ames, Iowa USA 50011

We have been developing widely spaced, high-emission-rate pheromone dispensers for use on large contiguous acreages of crops such as corn and cranberries. The Metered Semiochemical Timed Release System, or MSTRS<sup>®</sup>, consists of a small bag that passively emits pheromone throughout the growing season. Fewer dispensers are needed for effective disruption due to their higher emission rate; only 12 - 20 dispensers are needed per treated hectare, depending on the size of block. They are retrievable and easily disposed. We have been able to assess the ability of the MSTRS<sup>®</sup> disruptant system to suppress mating by freely flying females. During the first flight of the European corn borer, *Ostrinia nubilalis*, the MSTRS<sup>®</sup> dispensers reduce the percentage of feral females mating in grassy aggregation areas by up to 50% early in the flight. As the flight period progresses, all the females become mated, but the MSTRS<sup>®</sup> treatment suppresses the number of matings that females achieve by ca. 25 % compared with the untreated check plots. We have shown that damage to the corn is reduced by 50% as well. Commercial use of MSTRS<sup>®</sup> BFW and MSTRS<sup>®</sup> SS in cranberry marshes against the blackheaded fireworm, *Rhopobota naevana*, and the cranberry fruitworm, *Sparganothis sulfureana*, has increased in the two years these products have been on the market. We have begun to explore some issues that can potentially affect efficacy and deployment recommendations that relate to plume structure and plume overlap between dispensers targeting two different species on the same crop.

Key Words: *Ostrinia nubilalis*, *Rhopobota naevana*, *Sparganothis sulfureana*, sex pheromones, mating disruption