Mating Incidence of Feral *Heliothis virescens* (Lepidoptera: Noctuidae) Males Confined with Laboratory-Reared Females

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Testing insecticide susceptibility on moths captured in the field has facilitated research through access to ample samples of feral insects. Traps baited with pheromones can provide numerous males, but to conduct further testing these moths need to mate with females and produce offspring. Daily assessment of mating incidence, offspring production, and mortality of laboratory-confined moths, if they are used in experiments, can aid in understanding the effective gene pool of their offspring. This study compared these basic parameters when laboratory-reared female moths of *Heliothis virescens* Fabricius were confined with either feral or laboratory-reared males for 1 to 5 d. Overall, feral moths copulated less frequently than laboratory males (68.6% versus 98.2%). The copulation frequency of laboratory males, determined by a spermatophore marker, indicated that every male had equal access to copulate with females. Higher mortality (≥65%) was observed in laboratory males and females in the presence of the opposite sex than under same-sex confinement conditions (≤35%) at the same crowding ratio, indicating that copulation carries important consequences in longevity. The significantly highest mating incidence, fertile egg production, and lowest moth mortality occurred when females were confined with feral males for only 2 d. Female fertility was 28 to 56% when copulated by feral males, and 22 to 83% when copulated by laboratory males. This information suggests that peak genetic diversity of feral male offspring is reduced by approximately 30% when accounting for copulation frequency and female fertility. Studies using the progeny of moths (feral or laboratory-reared) confined for 2 d offer the possibility of obtaining the greatest female and male genetic representation and the most abundant number of fertile eggs.

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