

# Criteria for optimization of mass rearing of the parasitoid *Cotesia flavipes* in the laboratory

**Authors:**

Ramalho DG<sup>1</sup>, Viel SR<sup>2</sup>,  
Vacari AM<sup>1</sup>, De Bortoli SA<sup>1</sup>,  
Lopes MM<sup>3</sup>, Laurentis VL<sup>1</sup>  
and Veiga ACP<sup>1</sup>.

**Institution:**

1. laboratory of Biology and  
Insect Rearing (LBRI),  
Department of Crop  
Protection, College of  
Agricultural and Veterinary  
Sciences, Sao Paulo State Uni-  
versity, 14884-900 Jaboticabal,  
Sao Paulo,  
Brazil.

2. Louis Dreyfus Commodities  
(Sugarcane Mill), 14870-904  
Jaboticabal, Sao Paulo,  
Brazil.

3. College of Education Sao  
Luis, 14870-37, Jaboticabal,  
Sao Paulo, Brazil.

**Corresponding author:**  
Vacari AM.

**ABSTRACT:**

In this study, we aimed to evaluate criteria that serve to optimize the mass rearing of the parasitoid *Cotesia flavipes* in the laboratory. The following studies were conducted: (1) Optimal density of the third instar larvae of *Diatraea saccharalis* was parasitized using a rearing unit, (2) Parasitism capacity during the lifespan of *C. flavipes* was examined, (3) Pupae of *C. flavipes* were weighed, and (4) Adult *C. flavipes* were fed with different diets. We found that a density of five larvae of *D. saccharalis* parasitized using a rearing unit is most suitable for the mass production of *C. flavipes*. A female *C. flavipes* may parasitize three larvae of *D. saccharalis* for up to 4 h after copulation, generating quality individuals for mass rearing. It is impractical to mass market the parasitoid *C. flavipes* by weight, the correct is to count the number of masses to form the release unit. A diet of 2.5% honey and 5% sucrose is most suitable for adults during the mass rearing of *C. flavipes*.

**Keywords:**

Quality control, larval parasitoid, mass rearing, biological control, sugarcane.