

PERSISTENCE OF ATTRACT & KILL FORMULATIONS OF *ANASTREPHA FRATERCULUS*: GREENHOUSE AND RAIN-FAST EXPERIMENTS.

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Background: Food attractants associated with pesticides have been used as a strategy for management of fruit flies in fruit growing areas of Southern Brazil. Commercial formulations require frequent applications due to environmental factors like sunlight and rain. Anarosa, developed by ISCA Technologies, was evaluated for persistence after exposure to solar radiation and rainfall in laboratory tests on mortality of adult *Anastrepha fraterculus*.

Material and Methods: Experiments were conducted to evaluate the persistence of two attract and kill (A&K) formulations of Anarosa containing 0.1 or 0.2% Spinosad, compared to two standard treatments, GF 120 (0.02% Success® CB) and hydrolyzed protein (Biofruit®) + malathion on adult *A. fraterculus*. Experiments were conducted on *Vitis vinifera* in a greenhouse setting. Five plants were used per treatment. Treatments were applied as droplets (4mm diameter, 20 droplets) to upper leaves using disposable syringes (5ml). After 1, 7, 14, 21, 28 and 35 days after application, leaves with treatments were collected for rain-fast testing. Each treatment was exposed to 20 and 50mm of artificial rain; then leaf samples were collected and presented to flies in the laboratory to measure mortality. Each treatment was composed of 13 replicates consisting of a cage (300ml plastic cup without bottom, containing a circular floor paper, a 2ml container for water and 0.8g of solid diet) with two pairs of adult insects. For each evaluation, leaves with treatment droplets were cut in a circular shape (3cm diameter) and presented to the insects. Measurements were taken every two hours for the first 24 hours, followed by every four hours until the completion of assessments after 96 hours.

Results: Samples exposed to 20 mm of simulated rainfall resulted in 75 and 83% mortality after 96 hours for Anarosa 0.1 and 0.2% Spinosad treatments, respectively whereas GF 120 + malathion and Biofruit + malathion each resulted in only 39 and 18% mortality after 96 hours. The control sample resulted in 4% mortality. Samples exposed to 50 mm of simulated rainfall resulted in 59 and 83% mortality for Anarosa 0.1 and 0.2% spinosad treatments, 9 and 4% for the GF 120 + malathion and Biofruit + malathion treatments and 4% for the control treatment. Samples exposed to solar radiation showed no significant differences in mortality after 1 to 21 days with all resulting in 100% mortality.

Conclusions: The persistence of both the Anarosa and GF 120 formulations was similar after exposure to solar radiation, however the Anarosa formulation proved highly persistent with respect to rain, maintaining efficiency after considerable rainfall volumes.