

**CHRONIC TOXICITY OF RYNAXYPYR 20%SC, AN ANTHRANILIC DIAMIDE
INSECTICIDE, ON THE ECTO-LARVAL PARASITOID,
BRACON BREVICORNIS WESMAEL**

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Biological control is an important tool of Integrated Pest Management of agricultural pests. Pesticides can reduce natural enemy effectiveness either by directly causing mortality or by influencing their both different biological and physiological activities. Exposure to lethal doses of pesticides causes direct mortality to natural enemies as well as sub lethal doses of pesticides have different adverse effect on insect biology and physiology. Rynaxypyr 20% SC, an anthranilic diamide, is used on broad range of crops to control a range of pests belonging to the Order Lepidoptera and some Coleoptera, Diptera and Isoptera species. The following programme is proposed to be undertaken to study its chronic toxicity on *B. brevicornis* Wesmael, an important ecto-larval parasitoid of Lepidopteran crop pests.

Newly emerged adults of *B. brevicornis* Wesmael were repeatedly exposed for 48 h (once in each generation) to the recommended field dose (0.008%) and half of recommended field dose (0.004%) of rynaxypyr 20%SC, an anthranilic diamide group of insecticide, up to 10th generation following leaf disc method. Adult mortality was recorded after the exposure period. From the treated population, 10 pairs of adults were separated and each pair was released in a glass tube (5cm dia.) along with honey solution as food and each of the containers was then supplied with 5 full grown larvae of *C. cephalonica*, sandwiched between two facial tissue papers. Remaining adults were used for further multiplication of the bulk culture for the experiment. After each exposure, observations were taken on various biological parameters of the treated population and their off springs.

Effect of insecticidal treatments was compared with the control in each generation and also among different generation. Data were subjected to test of significance following General linear model using SPSS and SAS packages.

The mortality of treated *B. brevicornis* adults, adult longevity, fecundity, egg hatchability, pupation, adult emergence and sex ratio of the off springs were adversely affected due to exposure to insecticidal treatments that intensified gradually with increase in the number of exposures. Duration of life cycle of the off springs was not adversely affected by insecticidal treatments.