



# FIELD TRIALS TO INVESTIGATE THE EFFECT OF ENERGETIC SOURCE ADMINISTRATION TO NEWLY EMERGED *Aedes albopictus* STERILE MALES

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## INTRODUCTION

An isolated village (inhabited area of about 11 hectares) in Bologna province was chosen to carry out release trials with sterile male mosquitoes in a Sterile Insect Technique (SIT) research program against *Aedes albopictus*. The released sterile males must be able to fly, to disperse enough from the release station to cover the target area, to survive and be sexually active long enough to cover the time between successive releases, to locate the virgin wild females and successfully compete for mating with the wild males. From mark-recapture studies planned to investigate male dispersion capacity and longevity in urban areas we were able to estimate that during harsh summer months longevity of the males may be a limiting factor for cost/effective SIT application.

## FIELD TESTS

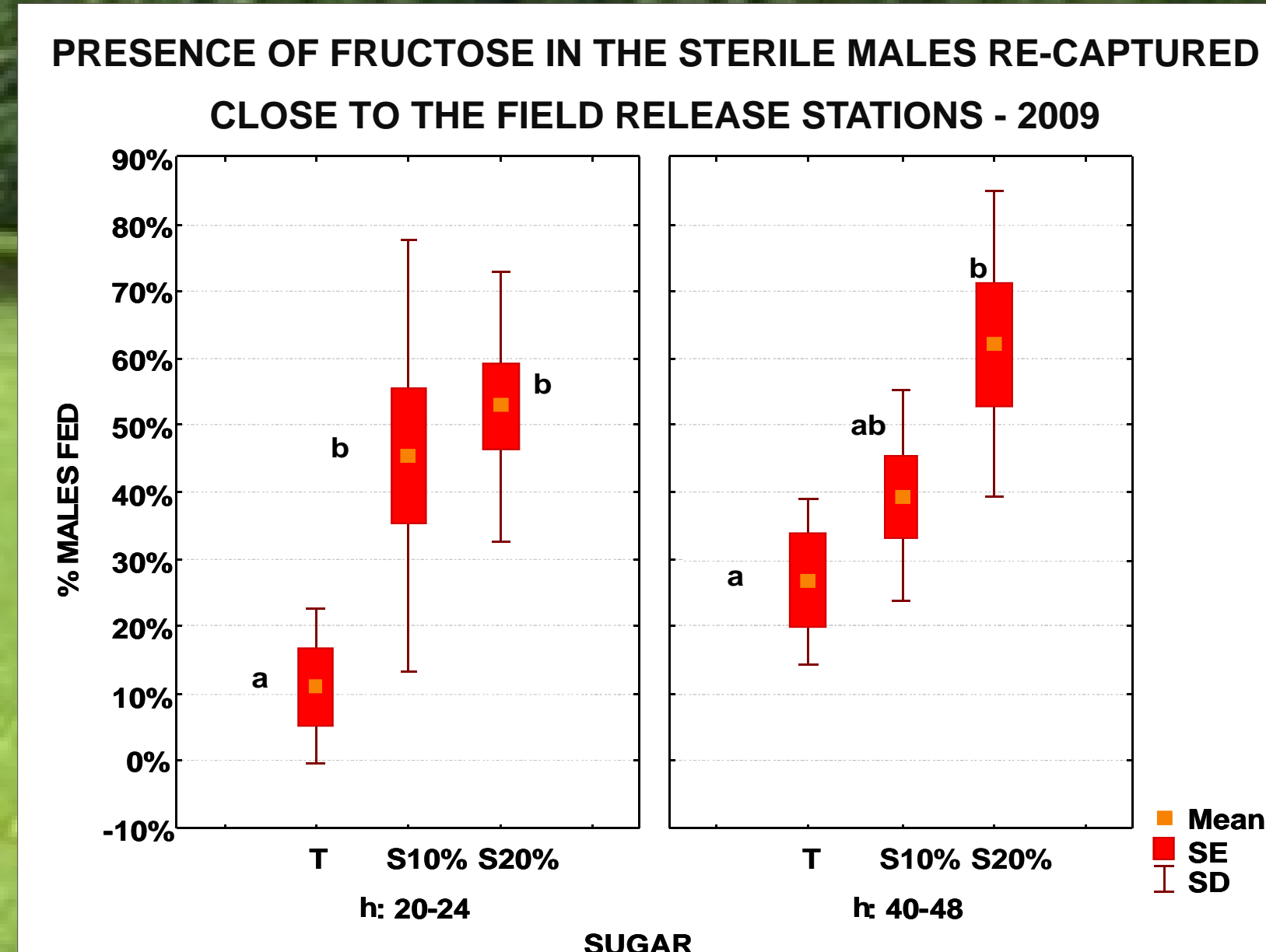
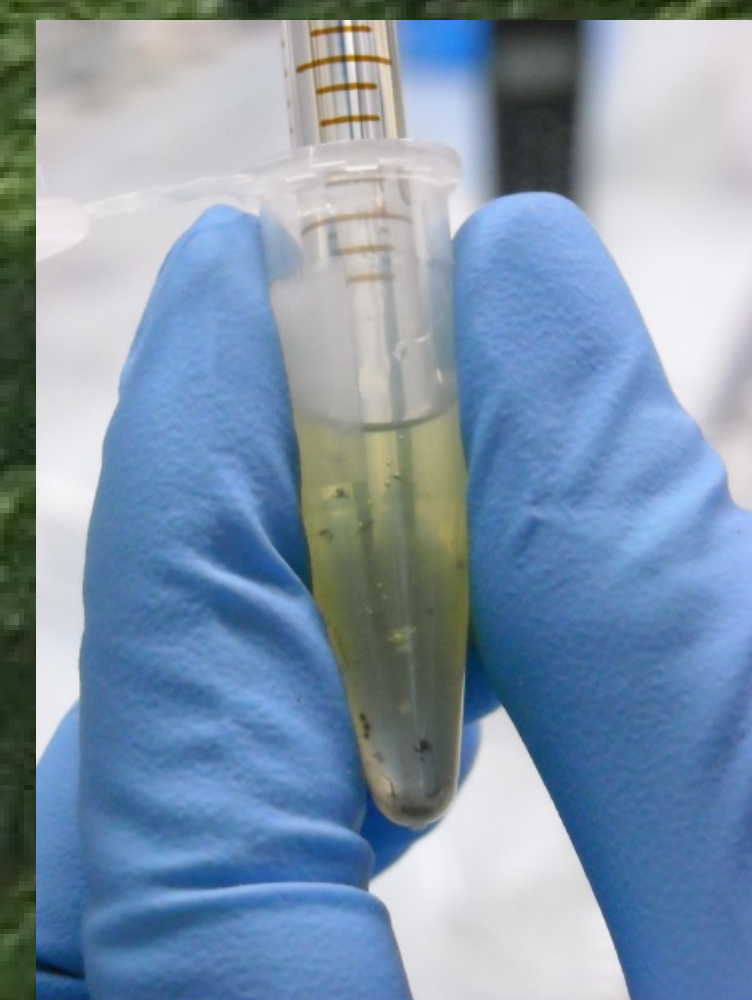
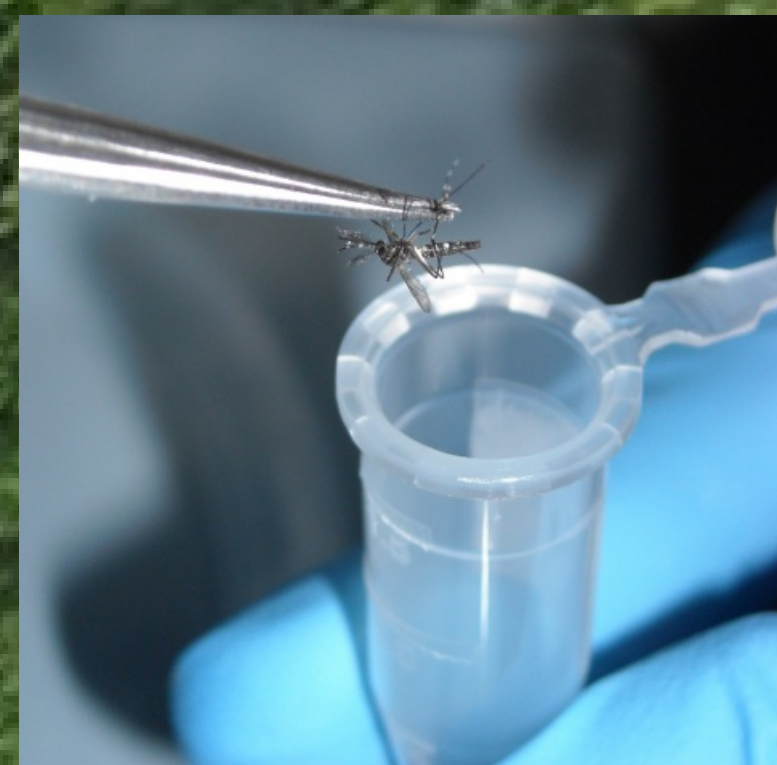


For two consecutive years (2009-2010), from April to September, male pupae were irradiated with Gamma rays and released in fixed stations provided with a special tool consisting of a green sponge for flowers holed and soaked with a sucrose solution. In 2010 a protective funnel was also tested. Ten release stations were positioned in 2009 and four in 2010. Two different concentrations of sugar (10% and 20%) were tested in the field and once a week males were re-captured close to the release stations at 24-48 hours post-release to be analyzed for fructose intake. Two release stations with water only were used as a control in 2009 and one in 2010.



## LAB TEST FOR FRUCTOSE INTAKE DETECTION

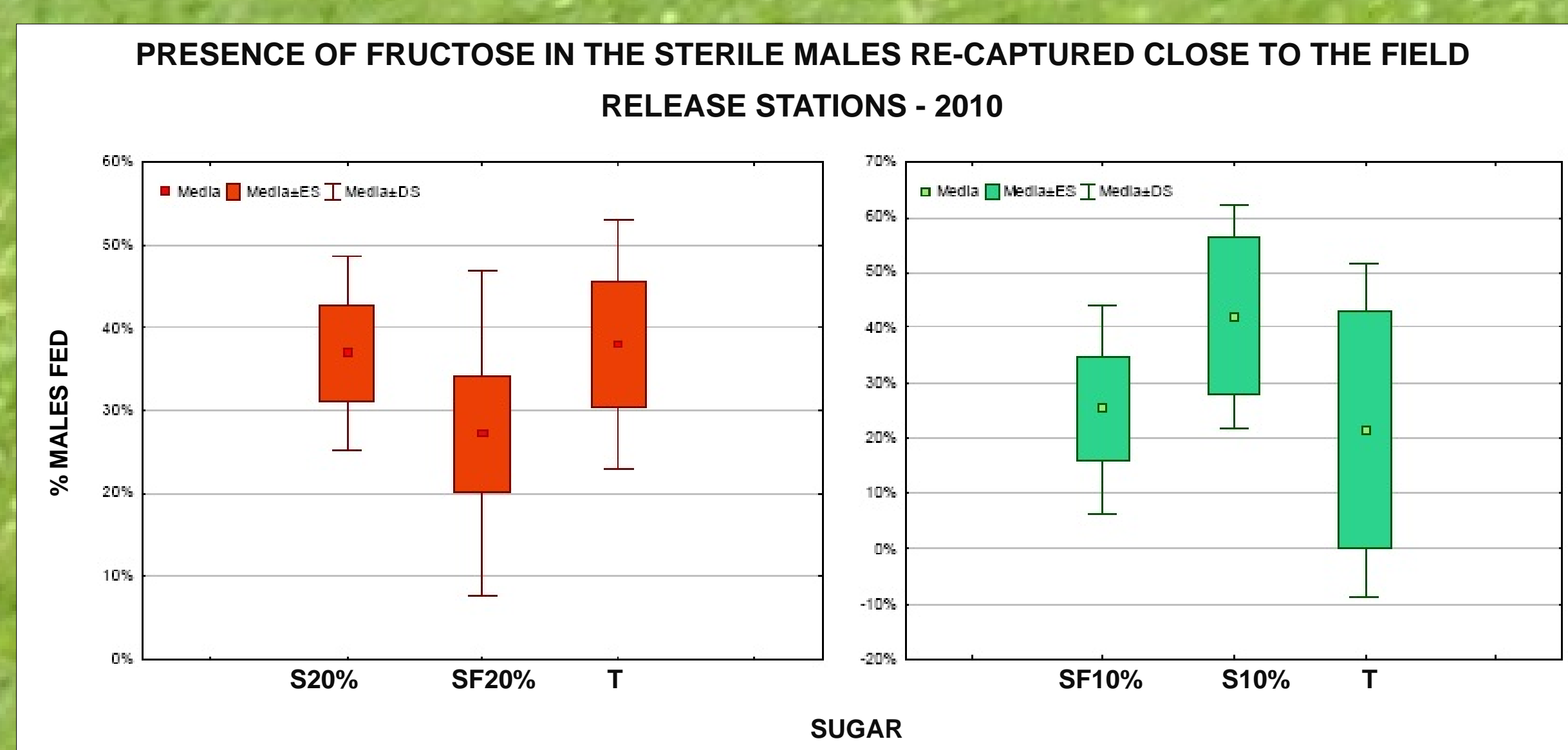
A solution consisting of diluted sulphuric acid and anthrone (fructose reagent) was prepared to perform the Van Handel test. Each recaptured mosquito was crushed into a 1.5 ml eppendorf tube containing 0.5 ml of the fructose reagent to test the fructose intake. If the reagent turned green or blue the sample was considered positive; if the reagent didn't change colour the sample was considered negative.



## RESULTS 2009

It was observed that near the stations with sugar approximately 50% of the males was fructose positive, against 12.6% near control stations.

10% and 20% sucrose solutions produced results not statistically different.



## RESULTS 2010

No statistical difference was observed between the stations with sugar and the control. The fennel didn't positively affect the behaviour of the males in feeding on the sponge soaked with sugar.