

Title Effect of the hot-water treatment in the mortality the fruit fly eggs

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Abstract

Today, Brazil has the third largest fruit culture region in the world, and an immense potential to improve this position in the international market. The Ministry of Agriculture, Cattle Farming and Supplying, and also the producers of this sector have invested in the fruit culture system of high standard of quality and health. In an attempt to minimize the use of chemical control, promote a longer period of use for the product, and increase exports, research with the use of methods for physical treatment is being carried through. This work was carried out to verify hot water treatment efficiency on the *Ceratitidis capitata* eggs. The following treatments were performed with temperature variations of 42; 44; 46; 48, and 50°C, and immersion times of 0; 20; 30; 40; 50, and 90 minutes. Eight replicates were evaluated for each treatment, each one containing twenty eggs, with a maximum of 24 hours of age, immersed in 10 ml of distilled water, and placed in porcelain crucibles with a capacity of 50 ml. After this treatment, the eggs were removed, stored in plates of petri and in B.O.D to the temperature of 25°C. After 24 hours of the process, the plates were evaluated on the mortality of eggs. Data analysis was done by analysis of variance (ANOVA), using a bi-factorial design and when significantly different ($P = 0.05$), were compared using the least significant difference test. The analysis was done using the statistical software Infostat version 1.0. According to the results obtained, we concluded that *C. capitata* eggs were tolerant to hot water temperatures below 46°C for twenty minutes. Therefore, the use of temperatures equal or above 46°C promoted 100% of mortality. The mortality of *C. capitata* eggs increased with the increase of the temperature and exposition time.