

Laboratory Evaluation of Natural Pyrethrins, Pymetrozine and Triflumuron as Alternatives to Control *Ceratitis capitata* Adults

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Three insecticides, pyrethrins + piperonyl butoxide (PBO), pymetrozine and triflumuron, were tested as potential alternatives for controlling the Mediterranean fruit fly *Ceratitis capitata* (Wiedemann) (Diptera: Tephritidae). The compounds were administered to adult flies in the laboratory by different uptake methods at the recommended rates currently used in fruit crops in Spain. Pyrethrins + PBO (80 + 320 ppm a.i.) exhibited a comparable knock-down effect to malathion (1,500 ppm a.i.) in the laboratory, irrespective of the method of application used. After these results were obtained, the number of concentrations tested was increased to carry out a dose-response analysis. Pymetrozine (300 ppm a.i.) and triflumuron (150 ppm a.i.) did not kill adults at the concentrations tested. However, pymetrozine diminished the fecundity, especially when adults were fed the insecticide; egg hatch was decreased by 59.3% compared with controls. Further experiments showed that increased period of ingestion and higher concentrations had a clear effect in reducing both fecundity and fertility. The possible use of pyrethrins + PBO and pymetrozine to reduce populations of *C. capitata* is discussed. **KEY WORDS:** *Ceratitis capitata*; Mediterranean fruit fly; medfly; pymetrozine; natural pyrethrins; piperonyl butoxide; triflumuron; malathion.

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