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## **Control of *Cimex lectularius* using heat combined with dichlorvos resin strips.**

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### **Abstract**

Successful management of the bed bug, *Cimex lectularius* L. (Hemiptera: Cimicidae), is difficult because of its pesticide resistance, which can allow a reduction in population, but not elimination. We evaluated the effect of heat and/or air circulation on the efficacy of dichlorvos resin strips in the control of bed bugs. Treatments were performed in unoccupied dormitory rooms and consisted of dichlorvos resin strips containing 18.6% active ingredient, the same strips + fan, and strips + fan + heat. The mortality of recently fed bed bugs and weight loss of the dichlorvos strips were evaluated over 7 days. Dichlorvos resin strips killed bed bugs and eggs in just over 7 days. The addition of a fan or a fan + heat decreased time to 100% mortality to 3 days and 36 h, respectively. Eggs located in treated rooms did not hatch. Resin strips in the strips + fan treatment and the strips + fan + heat treatment volatilized 10 and 70 times, respectively, faster than strips in the strips-only treatment. The addition of heat in treatments with dichlorvos resin strips enhances the overall efficacy of the volatile insecticide and reduces the time required to eliminate live bed bugs and eggs.

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