

EFFECTS OF MICROWAVE RADIATION ON HOUSE DUST MITES, *DERMATOPHAGOIDES PTERONYSSINUS* AND *DERMATOPHAGOIDES FARINAE* (ASTIGMATA: PYROGLYPHIDAE)

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Abstract. *Dermatophagoides pteronyssinus* and *Dermatophagoides farinae* mites are commonly found in house dust, and are important sources of allergens affecting humans. Various approaches to killing the mites have been examined. This study investigated the mortalities of adult mites exposed to 2,450 MHz microwave radiation produced by 3 ovens at various exposure times and power settings. The ovens all had 3 power settings. The average maximum water temperatures generated at high, medium and low power settings were 99.4 ± 0.2 , 84.1 ± 0.4 and $44.8 \pm 0.9^\circ\text{C}$, respectively. At high and medium settings, there was 100.0% mortality in both species when exposed for 300 seconds. The mean mortality rates at low power were $10.8 \pm 0.7\%$ for *D. pteronyssinus* and $9.7 \pm 2.6\%$ for *D. farinae*. When mites were exposed in the presence of culture media, the mortality rates decreased with increasing weight of media. The mean mortality with the largest amount of media tested at high power setting was 61.4%.

Key words: *Dermatophagoides pteronyssinus*, *D. farinae*, house dust mites, microwave radiation

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