Pulsing Electromagnetic Radiation at 50/60 Hz as a Pest Repellent in Insects

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In response to ultrasonic pest control devices spouting unsupported claims, between 1985 and 1997 the Federal Trade Commission pursued legal action against six companies falsely marketing such devices. In spite of this, some devices are still sold commercially, claiming to not only use the disproven method of ultrasonic pest control, but also the untested method of electromagnetic pest control. This study investigated the effectiveness of pulsing electromagnetic radiation at 50/60Hz as a pest repellent in German cockroaches (Blattella Germanica) in three experiments: a group choice with shielded vs. radiation exposed zones, and a four quadrant full-factorial setup (1-electromagnetic coil and insecticide, 2-insecticide alone, 3-electromagnetic coil alone, 4-neither) tested in groups and individually (single). While differences in locations of cockroaches in the choice experiment were marginally non-significant (P=0.358 to 0.477), differences between locations in the full-factorial group experiment were significant, with the insects favoring quadrant 3 containing only the activated coil (observed F-value=32.4298, F-critical=3.24 at a=0.05; P=0.0001). However, no differences were observed between locations in the full-factorial single experiment (P=1.000). Though cockroaches were not significantly affected by electromagnetic radiation, providing evidence disproving the claims of manufacturers, more replication is needed to conclusively determine its viability as a method of pest control.

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