

Insecticidal Activity of Isobutylamides Identified in *Piper nigrum* Fruits against *Culex* *pipiens pallens* Adults

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The adulticidal activity of materials derived from the fruits of *Piper nigrum* against adult of *Culex pipiens pallens* was examined and compared with that of commercial pesticides such as pyrethrum and chlorpyrifos. The four compounds isolated from *P. nigrum* fruit were characterized as pellitorine, guineensine, pipericide and retrofractamide A by spectroscopic analysis. Based on 24-h LD₅₀ values, the compound most toxic to *C. pipiens pallens* adult was pellitorine (0.4 µg) followed by guineensine (1.9 µg), retrofractamide A (2.4 µg), and pipericide (3.2 µg). LD₅₀ values of pyrethrum and chlorpyrifos were 0.16 and 0.03 µg, respectively. Naturally occurring *P. nigrum* fruit-derived compounds merit further study as potential mosquito adult control agents or as lead compounds.