

Larvicidal Activity of *Asiasarum sieboldii* Whole Plant-Derived Compounds against *Lycoriella mali* (Diptera: Sciaridae)

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The larvicidal activity of materials derived from *Asiasarum sieboldii* whole plant against *Lycoriella mali* (Fitch) was examined using direct contact and fumigation bioassays. The biologically active constituents of *A. sieboldii* whole plant were characterized as the monoterpenoids safrole and myristicin, and the saturated unbranched hydrocarbon *n*-pentadecane by GC-MS analysis. In a filter-paper contact bioassay, safrole caused 100, 88, and 65% mortality against *L. mali* larvae at 9, 4, and 2 $\mu\text{g cm}^{-2}$ at 24 hr after treatment. *n*-Pentadecane gave 100% mortality at 18 $\mu\text{g cm}^{-2}$, whereas the larvicidal activity was lower at 9 $\mu\text{g cm}^{-2}$. In fumigation tests with *L. mali* larvae, safrole and myristicin were more effective in closed containers than in open ones, indicating that effect of the monoterpenoids were largely due to action in the vapor phase. *A. sieboldii* extract, particularly safrole, myristicin and *n*-pentadecane, merits further study as potential insect control agents or as lead compounds for the control of *L. mali*.