

Antifeedant and Phytotoxic Activity of Cacalolides and Eremophilanolides

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The antifeedant effect of six cacalolides and six eremophilanolides was tested against the herbivorous insects *Spodoptera littoralis*, *Leptinotarsa decemlineata*, and *Myzus persicae*. The test compounds included several natural products isolated from *Senecio madagascariensis* (14-isovaleryloxy-1,2-dehydrocacalol methyl ether, **4**), *S. barba-johannis* (13-hydroxy-14-oxo-cacalohastine, **5**; 13-acetyloxy-14-oxocacalohastine, **6**) and *S. toluccanus* [6-hydroxyeurypsins, **7**; 1(10)-epoxy-6-hydroxyeurypsins, **9**; toluccanolide A, **11**] and the derivatives cacalol methyl ether (**1**); cacalol acetate (**2**); 1-acetyloxy-2-methyloxy-1,2,3,4-tetrahydrocacalol acetate (**3**); 6-acetyloxyeurypsins (**8**); 6-acetyloxy-1(10)-epoxyeurypsins (**10**), and toluccanolide A acetate (**12**). Compound **11** and its derivative **12** exhibited moderate antifeedant activity against *S. littoralis*; **2**, **7–10**, and **12** showed strong activity against *L. decemlineata*, while the aphid *M. persicae* was moderately deterred in the presence of compounds **1**, **4**, **8**, **10**, and **12**. The phytotoxic activity of **1–12** on *Lactuca sativa* was also evaluated. Compounds **2** and **4–12** moderately inhibited seed germination at 24 h, while compounds **1–4**, **6**, **9**, and **10** had a significant inhibition effect on *L. sativa* radicle length (over 50%).

Key words: Cacalolides, Eremophilanolides, Antifeedant, Phytotoxic