

# Antifeedant/Insecticidal Terpenes from Asteraceae and Labiatae Species Native to Argentinean Semi-arid Lands

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To validate the potential as added-value resources of Asteraceae and Labiatae species of Argentinean semi-arid lands, we have selected 13 of their major terpenoids belonging to several chemical classes and tested their insect antifeedant and toxic activity on the herbivorous insects *Spodoptera littoralis* and *Leptinotarsa decemlineata*. The antifeedant effects of the test compounds were structure- and species-dependent. The most active antifeedant to *L. decemlineata* was the eudesmane sesquiterpene  $\gamma$ -costic acid (**13**), followed by the labdane diterpene  $2\alpha,3\alpha$ -dihydroxycativic acid (**8**), the clerodane diterpenes 6-acetylteucjaponin B (**5**), bacchotricuneatin A (**1**), bartemidiolide (**7**), butanolide (**4**), and the sesquiterpenes ilicic acid (**11**) and tessaric acid (**10**) (eudesmane and eremophilane type, respectively). *S. littoralis* was only affected by the clerodanes and showed the strongest response to salviarin (**3**) and **5**, followed by hawtriwaic acid (**6**) and 12-*epi*-bacchotricuneatin A (**2**). Orally injected *S. littoralis* larvae were negatively affected by **5**. Most of the diterpenes had selective cytotoxic effects to insect-derived Sf9 cells with the clerodane **1** being the most active, followed by the eudesmane costic acid (**12**), the only cytotoxic sesquiterpene. None of these compounds was cytotoxic to mammalian CHO cells.

*Key words:* Terpenes, Antifeedant, *Leptinotarsa decemlineata*, *Spodoptera littoralis*