Antifeedant and Phytotoxic Activity of Hydroxyperezone and Related Molecules

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Z. Naturforsch. **63c**, 221–225 (2008); received August 3, 2007

The insect antifeedant and toxic activity of hydroxyperezone (**1**), its derivatives **2**–**9**, along with 3-hydroxy- (**10**) and 6-hydroxythymoquinone (**11**) were studied against *Spodoptera littoralis*, *Leptinotarsa decemlineata*, and *Myzus persicae*. The antifeedant tests showed that *L. decemlineata* was the most sensitive insect, followed by *M. persicae*, while *S. littoralis* was not deterred by compounds **1**–**11**. Leucohydroxyperezone tetraacetate (**3**), oxoperezinone (**6**), dihydroleucoperezinone diacetate (**7**), 3-hydroxy- (**10**) and 6-hydroxythymoquinone (**11**) showed strong activity against *L. decemlineata*. **1** and **7** exhibited moderate deterrent activity against *M. persicae*, while **1** and dihydroleucohydroxyperezone tetraacetate (**4**) acted as post-ingestive antifeedants to *S. littoralis*. The phytotoxic activity of compounds **1**–**11** was also evaluated. Hydroxyperezone (**1**) strongly inhibited seed germination at 24 h, while the activity of **3**–**8** and **10** was moderate. The level of radicle growth inhibition obtained with compounds **1**–**5** and **8**–**11** was significant (< 50%).

Key words: Hydroxyperezone Derivatives, Antifeedant, Phytotoxicity