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研究论文

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春尺蠖性信息素活性成分的提取和GC-MS鉴定

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Extraction and GC-MS identification of active components of sex pheromone from *Apocheima cinerarius* Erschoff (Lepidoptera: Geometridae)

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摘要

为了寻求高效无污染的防治害虫春尺蠖 *Apocheima cinerarius* Erschoff 的方法, 本实验对春尺蠖雌蛾性信息素进行了初步研究。本研究采取正己烷溶剂浸提法提取春尺蠖雌蛾性信息素腺体中的性信息素, 运用气相色谱-触角电位联用仪(gas chromatography-electroantennographic detection, GC-EAD) 测定春尺蠖雄蛾触角对雌蛾性信息素腺体提取物中性信息素成分的活性反应, 并运用气相色谱-质谱联用仪(gas chromatograph-mass spectrum, GC-MS) 鉴定信息素成分。GC-EAD结果显示雄蛾触角对雌蛾性信息素腺体提取物中的一种成分有较好的反应。GC-MS分析结果表明能引起雄蛾触角电生理反应的成分为含有十四个碳原子直链结构的不饱和乙酸酯, 但其双键位置有待合成标准化合物进一步分析鉴定。该研究结果为春尺蠖雌蛾性信息素备选化合物的筛选提供了方向, 为其结构的确定奠定了基础。

关键词:

Abstract:

In order to find an efficient and pollution free method to control the *Apocheima cinerarius* Erschoff, a polyphagous defoliator pest, the sex pheromone was extracted from sex pheromone glands of virgin female moth of *A. cinerarius* by n-hexane, the sensitive reaction of male moth antenna to the hexane extracts from sex pheromone glands of virgin female moth was analyzed by GC-EAD, and the components of the pheromone were identified by GC-MS. The GC-EAD results indicated that male moth antenna was detected to have sensitive reaction to one component in the extracts. Based on GC-MS data of authentic standards, an unsaturated acetate with 14 carbons was identified as the active component of sex pheromone, but the position of double bond should be further identified through synthesizing more standard compounds. The results will provide the direction in screening tests of synthetic pheromone candidates and establish the foundation for determining the sex pheromone structure of female *A. cinerarius*.

Key words:

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