

研究论文

# 茉莉酸甲酯喷施和光肩星天牛 (*Anoplophora glabripennis* (Motschulsky)) 咬食后五角枫释放的挥发物

张风娟<sup>1</sup>, 金幼菊<sup>2,\*</sup>

<sup>1</sup>河北科技师范学院, 昌黎066600 <sup>2</sup>北京林业大学生物学院, 北京100083

收稿日期 2006-12-8 修回日期 2007-4-27 网络版发布日期: 2007-7-25

**摘要** 茉莉酸甲酯喷施和光肩星天牛 (*Anoplophora glabripennis* (Motschulsky)) 咬食后五角枫 (*Acer mono Maxim.*) 植株均诱导产生了乙酸丁酯、2-壬醇、乙酸己酯、3-甲基-2-丁醇、1-辛烯、里那醇、3-萜烯、1-丁醇、(Z)-2-己烯醛9种正常植株中没有检测到的挥发物。两种处理均诱导或促进了萜烯类、醇类和醛类挥发物的大量释放, 且乙酸-3-己烯酯、乙酸乙酯、己醇、反-2-己烯醇、乙基己醇、1-辛烯、石竹烯、法尼烯等挥发物的时序变化趋势也非常相似。因而推测光肩星天牛咬食五角枫后在植物体内诱导产生了茉莉酸信号传导途径。

**关键词** [茉莉酸甲酯](#); [光肩星天牛](#); [五角枫](#); [挥发物](#)

分类号 [Q948](#)

ZHANG Feng-Juan<sup>1</sup>, JIN You-Ju<sup>2,\*</sup>

<sup>1</sup> Department of Life Science, Hebei Normal University of Science & Technology, Hebei Changli 066600, China

<sup>2</sup> College of Plant Sciences, Beijing Forest University, Beijing 100083, China

**Abstract** Given that the behaviors of *Anoplophora glabripennis* (Motsch.) and methyl jasmonate (MeJA)-applied *Acer mono Maxim.* were similar in their damage of *Acer mono Maxim.* we asked whether the volatiles from the plants after two treatments would be similar. To find out, compounds in the profiles of volatiles from the species were identified and quantified by GC-MS equipped with a CP-4020 TCT device; and nine volatiles that were not found in the undamaged plant (a cetic acid butyl ester, ethyl acetate, 2-Nonanol, hexanol, trans-2-hexenol, ethylhexanol, 1-Octene, caryophyllene and farnesene) were induced. Terpenes, aldehydes and alcohols were also induced or their relative concentrations increased. The results of the effect of the two treatments on the temporal variation of the volatiles showed some compounds such as 3-hexenyl acetate, acetic acid butyl ester, 1-hexanol, (Z)-3-hexenol, ocimene and farnesene were similar too. We concluded that jasmonic acid (JA) was involved in the signal transduction of the defense pathway induced by the feeding damage of *Anoplophora glabripennis*.

**Key words** [methyl jasmonate](#) [Anoplophora glabripennis](#) (Motsch.) [Acer mono Maxim.](#) [volatile](#)

DOI

通讯作者 金幼菊 [youjujin@163.com](mailto:youjujin@163.com)

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