

资源环境 生物药物 生物质转化

不同吸附剂对玉米叶片挥发物的吸附效果比较

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摘要:

选择GDX-101、GDX-502、Porapak Q、Tenax-Ta和XAD-2五种吸附剂,采用动态顶空收集法和气相色谱-质谱联用(GC/MS)技术,对机械损伤的玉米叶片挥发物进行分析和鉴定。结果分析得到8种挥发性组分,以顺-3-己烯醛、反-2-己烯醛、顺-3-己烯-1-醇、反-2-己烯-1-醇和顺-3-己烯基乙酸酯这5种绿叶挥发物为主,还有3种未鉴定的挥发物。实验结果表明,GDX101、GDX-502、Porapak Q和Tenax-Ta的吸附效果基本一致,可用于玉米叶片挥发物的收集,但XAD-2对含量少的挥发物吸附效果较差。

关键词: 玉米;机械损伤;绿叶挥发物;顶空吸附;色谱分析

Adsorption Efficiency of Different Adsorbents on Volatiles of Maize Leaves

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Abstract:

Volatiles from mechanical damaged fresh leaves of maize were collected by dynamic head-space sampling with adsorbents GDX-101, GDX-502, Porapak Q, Tenax-Ta and XAD-2, respectively. Components of the volatiles were analyzed and identified by combined gas chromatography-mass spectrometry (GC/MS). Eight volatile compounds, among which 5 were maize green leaf volatile compounds (GLVs), including cis-3-hexenal, trans-2-hexenal, cis-3-hexen-1-ol, trans-2-hexen-1-ol, cis-3-hexenyl acetate and 3 were undefined. The results showed that the adsorption efficiency of GDX-101, GDX-502, Porapak Q and Tenax-Ta were basically consistent. These 4 adsorbents could meet the requirement of adsorption and detection of maize leaves volatile compounds. But the adsorption capability of XAD-2 to the lean content volatile compounds was relatively poor.

Keywords: maize mechanical damage GLVs head-space absorption chromatographic analysis

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