

研究论文

高效阴离子交换色谱-脉冲安培检测法测定烤烟中的水溶性葡萄糖、果糖和蔗糖

王荔¹;陈巧珍¹;宋国新¹;沈轶¹;刘百战^{2,3}

复旦大学分析测试中心¹

上海烟草(集团)公司²

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摘要 用高效阴离子交换色谱-脉冲安培检测法(HPAEC-PAD)测定了烤烟中的水溶性葡萄糖、果糖和蔗糖。采用水浸取及膜过滤法处理烤烟样品,以Dionex CarboPac PA-1阴离子交换柱为色谱柱,0.2 mol/L NaOH水溶液为淋洗液进行分离测定。葡萄糖、果糖和蔗糖的含量与其峰面积的线性关系良好,回收率均在97%以上。方法简便易行,灵敏度高,重现性良好,可以实现对烟草中单糖的快速分离和测定。

关键词 [高效阴离子交换色谱](#) [脉冲安培检测法](#) [葡萄糖](#) [果糖](#) [蔗糖](#) [烤烟](#)

分类号

Determination of Water-Soluble Glucose, Fructose and Sucrose in Flue-Cured Tobacco by High Performance Anion Exchange

WANG Li CHEN Qiaozhen SONG Guoxin SHEN Yi LIU Baizhan

Abstract

The quantitative determination of water-soluble sugars such as glucose, fructose and sucrose in flue-cured tobacco by high performance anion exchange chromatography coupled with pulsed amperometric detection (HPAEC-PAD) was developed. The method was used to determine flue-cured tobacco samples containing large amounts of carbohydrates after pretreatment by water-leaching and membrane filtration. The separation was performed on a Dionex CarboPac PA-1 anion exchange column with 0.2 mol/L NaOH solution as the eluent at a flow rate of 1.0 mL/min. The injection volume was 20 μ L. Good linearities were obtained for glucose, fructose and sucrose within the range of 0.5-100 mg/L ($r^2 > 0.997$). The detection limits ($S/N=3$) were 0.1 mg/L, 0.1 mg/L and 0.2 mg/L, and the average recoveries were 97.3%, 101.4% and 98.9% with good reproducibility for glucose, fructose and sucrose, respectively.

Key words [high performance anion exchange chromatography \(HPAEC\)](#) [pulsed amperometric detection \(PAD\)](#) [glucose](#) [fructose](#) [sucrose](#) [flue-cured tobacco](#)

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通讯作者 王荔

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