园艺学报 » 2014, Vol. 41 » Issue (2) :319-328 DOI:

研究简报

桃3种颜色果肉中10种酚类物质的测定及比较

严 娟，蔡志翔，沈志军，张斌斌，钱 巍，俞明亮*

（江苏省农业科学院园艺研究所，南京 210014）

Determination and Comparison of 10 Phenolic Compounds in Peach with Three Types of Flesh Color

YAN Juan, CAI Zhi-xiang, SHEN Zhi-jun, ZHANG Bin-bin, QIAN Wei, and YU Ming-liang*

（Institute of Horticulture, Jiangsu Academy of Agricultural Sciences, Nanjing 210014, China）

- 摘要
- 参考文献
- 相关文章

摘要 优化了桃酚类物质分析的高效液相色谱法（HPLC），并测定和比较了红、黄、白色类型桃果肉酚类物质组分。以甲醇（0.1% H_3PO_4）为提取剂，采用C_{18}柱（4.6 mm × 250 mm，5 μm），以甲醇（0.1% H_3PO_4）和水（0.1% H_3PO_4）为流动相梯度冲洗，流速1.0 mL • min^{-1}，温度30 ℃，检测波长280 nm，适于桃果肉酚类组分分析。在桃果肉中检出了绿原酸、新绿原酸、儿茶素、表儿茶素、芦丁、槲皮素、没食子酸、阿魏酸、根皮苷和根皮素。不同肉色类型桃的主要酚类组成和含量存在差异，红肉桃主要成分为表儿茶素、绿原酸、儿茶素和新绿原酸，黄肉桃为新绿原酸、绿原酸和儿茶素，白肉桃为新绿原酸、儿茶素和芦丁；红肉桃含量最高的酚类为表儿茶素最高（78.91 ~ 673.90 mg • kg^{-1}FW），黄肉桃为新绿原酸（7.28 ~ 25.57 mg • kg^{-1}FW），白肉桃中含量最高的酚类因品种而异，规律不明显，以新绿原酸（3.17 ~ 6.16 mg • kg^{-1}FW）和儿茶素（4.21 ~ 14.55 mg • kg^{-1}FW）较高；各酚类含量差异显著，对于绿原酸、新绿原酸、儿茶素、表儿茶素和芦丁等桃果肉中的主要组分而言，红肉桃的含量均显著高于白肉和黄肉桃。同一肉色不同品种间一些酚类物质的含量差异显著，可用于筛选桃特异种质。

关键词： 桃 肉色 酚类物质 高效液相色谱法

Abstract： In this study，we optimized the High-performance liquid chromatography（HPLC）determination system for phenolic compounds in peach，and determined and compared phenolic compounds in three types of color peach flesh，i.e. blood，yellow and white. The phenolic compounds of peach flesh were extracted with ethanol（0.1% H3PO4）via ZORBAX SB-C18 column（4.6 mm × 250 mm，5 μm），by using ethanol（0.1% H3PO4）and water（0.1% H3PO4）as solvents at the flow rate of 1.0 mL • min-1 under the temperature of 30 ℃ and UV of 280 nm. This method was particularly suitable for the determination of phenolic compounds of peach flesh. The results showed that chlorogenic acid，neochlorogenic acid，catechin，epicatechin，rutin，quercetin，gallic acid，ferulic acid，phlorizin and phloretin were detected in peach flesh. The main components and content of phenolic compounds were different in the three types of flesh color peaches. In details，epicatechin，chlorogenic acid，catechin and neochlorogenic acid were the main components in blood flesh peach. Neochlorogenic acid，chlorogenic acid and catechin were the first most components in yellow flesh peach，while neochlorogenic acid，catechin and rutin in white flesh peach. Epicatechin and neochlorogenic acid were the highest phenolic compounds in blood flesh peach and yellow flesh peach，respectively，with the content of 78.91–673.90 mg • kg-1FW and 7.28–25.57 mg • kg-1FW. However，the phenolic compounds in white flesh peach was distinct among cultivars，and neochlorogenic acid（3.17–6.16 mg • kg-1FW）and catechin（4.21–14.55 mg • kg-1FW）contents were higher than the other components. In particular，the contents of phenolic compounds varied significantly in different color flesh peaches. As the main phenolic compounds in peach flesh，chlorogenic acid，neochlorogenic acid，catechin，epicatechin and rutin were significant higher in blood flesh peach than that of white and yellow flesh peach. In addition，the content of some phenolic compounds was significantly different among cultivars within the same color flesh，which may be favorably used to screen specific germplasms in peach.

Keywords： peach， flesh color， phenolic compounds， high-performance liquid chromatography

收稿日期: 2013-08-16; 出版日期: 2014-01-10

引用本文:

严娟, 蔡志翔, 沈志军等 .桃3种颜色果肉中10种酚类物质的测定及比较[J] 园艺学报, 2014,V41(2): 319-328

YAN Juan, CAI Zhi-Xiang, SHEN Zhi-Jun etc .Determination and Comparison of 10 Phenolic Compounds in Peach with Three Types of Flesh Color[J] ACTA HORTICULTURAE SINICA, 2014,V41(2): 319-328

Service

把本文推荐给朋友
加入我的书架
加入引用管理器
Email Alert
RSS

作者相关文章

严娟
蔡志翔
沈志军
张斌斌
钱巍
俞明亮

没有本文参考文献

[1] 谢 玥, 王丽华, 董官勇, 郑晓琴, 庄启国, 李明章.软枣猕猴桃新品种‘宝贝星’[J]. 园艺学报, 2014,41(1): 189-190

[2] 金银春, 向荣华, 肖千文, 姚盛兵, 孙 亮, 侯银堂, 赵志满.核桃新品种‘硕星’[J]. 园艺学报, 2014,41(1): 191-192

[3] 席万鹏, 郁松林, 周志钦.桃果实香气物质生物合成研究进展[J]. 园艺学报, 2013,40(9): 1679-1690

[4] 沈燕琳, 董文轩, 李 鲜, 孙崇德, 陈昆松.山楂酚类物质及其生物活性研究进展[J]. 园艺学报, 2013,40(9): 1691-1700

[5] 李佩艳，周 刚，周巧丽，赵 静，郑小林*.草酸钾处理对‘华特’毛花猕猴桃果实后熟软化的影响[J]. 园艺学报, 2013,40(8): 1553-1559

[6] 赵远征，刘志恒*，李俞涛，周 思，黄欣阳.大樱桃黑斑病病原鉴定及其致病性研究[J]. 园艺学报, 2013,40(8): 1560-1566

[7] 高正辉1，徐义流1,*，张金云1，潘海发1，束 冰1，岳兰菊2.黄桃新品种‘徽黄’[J]. 园艺学报, 2013,40(8): 1609-1610

[8] 张威远, 陈锦永, 方金豹, 顾 红, 赵长竹, 林苗苗.多效唑在桃果实中的残留量评估[J]. 园艺学报, 2013,40(7): 1369-1374

[9] 郭 磊，蔡志翔，张斌斌，许建兰，宋宏峰，马瑞娟*.5－氨基乙酰丙酸促进桃果皮提前着色机制研究[J]. 园艺学报, 2013,40(6): 1043-

[10] 田景花1，王红霞2，高 仪1，张志华2,*.核桃属植物休眠期的抗寒性鉴定[J]. 园艺学报, 2013,40(6): 1051-

[11] 许建兰，马瑞娟*，俞明亮，沈志军，张斌斌，蔡志翔，杜 平.中熟蟠桃新品种‘玉霞蟠桃’[J]. 园艺学报, 2013,40(6): 1205-

[12] 赵书岗1，王红霞2，高 仪3，褚发朝4，张志华2,*，郭建朝4，雷 玲4.早实核桃新品种‘赞美’[J]. 园艺学报, 2013,40(6): 1207-

[13] 刘 磊1,2，姚小洪1，黄宏文3,*.猕猴桃EPIC标记开发及其在猕猴桃属植物系统发育分析中的应用[J]. 园艺学报, 2013,40(6): 1162-

[14] 岁立云, 刘义飞, 黄宏文.红肉猕猴桃种质资源果实性状及AFLP 遗传多样性分析[J]. 园艺学报, 2013,40(5): 859-

[15] 鲁振华, 李钰婷, 王志强*, 牛 良, 崔国朝, 王玉兰.半矮生型桃节间长度相关基因的筛选和鉴定[J]. 园艺学报, 2013,40(5): 943-