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蔬菜

彩色马铃薯块茎形成和贮藏过程中花色苷变化及抗氧化活性分析

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Variation of Anthocyanin of Colored-flesh Potato Tubers and Measurement of Their Antioxidant Activity During the Tuber Development and Storage

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摘要 以不同彩色马铃薯基因型为材料，对块茎形成和贮藏过程中花色苷的种类及含量变化进行了研究。结果表明，在块茎发育过程中，不同马铃薯基因型块茎中花色苷出现的时间与含量多少各有差异，颜色较深的基因型花色苷达到最高含量的时间先于颜色浅的基因型，且不同组分的出现与累积变化规律基本上与花色苷合成的先后顺序一致；在常温和低温贮藏过程中，花色苷含量均呈下降趋势，但下降比例并无明显差异。抗氧化活性测定表明，几种彩色马铃薯基因型块茎均有一定的清除DPPH· 和$ABTS^+$能力以及Fe^{3+} 还原能力，但不同基因型间抗氧化能力存在差异。

关键词： 彩色马铃薯 花色苷 块茎发育阶段 花色苷含量变化 抗氧化活性

Abstract： Abstract：The accumulation and variation of anthocyanins components of colored-flesh potato tubers were investigated during tuber development and storage conditions. The results showed that content of anthocyanins and the time points of anthocyanin synthesis were varied in different genotypes during the tuber development. The time points of anthocyanin syntheses beginning and reaching the highest concentration were earlier in genotypes with dark color flesh than that of light color flesh potatoes，and the variation of anthocyanin components was mainly corresponding to the pathway of anthocyanin synthesis in all genotypes. The anthocyanin content showed decreased trend during storage process and no significantly differences were found when tubers were stored under normal and low temperature condition. In addition，the determination of activity of antioxidant indicated that anthocyanins of all colored-flesh potatogenotypes had certain ability to eliminate DPPH· and $ABTS^+$ as well as the ability to reduce Fe^{3+}，but theantioxidant ability of anthocyanins was significantly varied among genotypes.

Keywords： colored-flesh potato, anthocyanin, tuber development stage, anthocyanin content variation, antioxidant activity

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