Title Effect of 1-MCP on the changes of apple polyphenols content during the cold storage

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Abstract

Introduction: 1-Methylcyclopropene is low molecular compounds of cyclopropene. As a new ethylene receptor inhibitor, 1-MCP and inhibit ethylene responses effectively in many fruits, and it has a attractive future for utilization in storage and preservation of fruit especially climacteric fruit. Apple polyphenol is important antioxidant. How is the content of different part apple polyphenol influenced by 1-MCP during storage. **Materials and Methods:** Red fuji apple were obtained fom Lingbao of Sanmenxia in China. Huaniu apple were obtained from Tianshui of Gansu in China. Anylytical grade 1MCP obtained from Signa Chemical Company were used directly, without further purification. Red fuji apple and Huaniu apple were treated by using 1-MCP (200, 500, 1000nLL-1) for 24 hour at 0~4°C. Apple polyphenol were extracted by microwave assisted extraction and determined by high performance liquid chromatograph. **Results and discussion:** The changes of apple phlyphenols content of different parts of the apples were investigated by adding different contents 1-Methylcyclopropene (1-MCP). At room temperature, two kinds of apple (Red Fuji apples, Huaniu apples) were treated by 1-MCP of 200, 500, 1000 nl/l. Polyphenols content of flesh, peel and core in apple were investigated during 0~4°C cold storage. The results showed that 1000nL/L 1-MCP can significantly inhibit the decrease of polyphenols content such as gallic acid, chlorogenic acid, rutin, phloridzin etc in apple. Bit the effect of 200nLL-1, 500 nLL-1 1-MCP was not significant. It was obvious that the polyphenols content of the control group reduced in the whole cold storage.