

**Title** Prevention of enzymatic browning of Asian pear (*Pyrus serotina* reh.) by some anti-browning agents

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#### **Abstract**

Mature fruit of the 'KS<sub>13</sub>' Asian pear (*Pyrus serotina* Rehd.) cultivar were harvested from eight-year-old trees grown on European pear seedling rootstocks at Tarbiat Modares University (TMU) research orchard. Water extracts of onion and garlic bulbs were prepared and their effects on polyphenol oxidase activity and browning of Asian pear fruit juice were investigated. The polyphenol oxidase (PPO) of Asian pear was inhibited by onion and garlic extracts, and the inhibitory effect of these extracts on PPO was increased after heating them. The extracts' inhibitory effect increased with increasing heating temperature and time. In addition, results indicated that the inhibitory effect of garlic extract was greater than that of onion extract. The browning of Asian pear juice was retarded by addition of both fresh and heated onion and garlic extracts. The extracts inhibited the PPO activity non-competitively. Therefore, the inhibitory effect of these extracts against juice browning seems to be due to their impact on PPO activity.