

Title            Inhibition of polyphenoloxidase in mango puree with 4-hexylresorcinol, cysteine and ascorbic acid  
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### Abstract

Mango puree, at three pH (3.5, 4.0, or 4.4) was mixed with 4-hexylresorcinol (4-HR) (40, 60, or 80 mg/kg), cysteine (Cys) (100, 200, or 300 mg/kg), or ascorbic acid (AA) (250, 500, or 1000 mg/kg) to assess their effect on polyphenoloxidase (PPO) activity. Combinations of 4-HR/Cys and 4-HR/AA at pH 3.5 were also studied. PPO activity was analysed spectrophotometrically at 30 °C. Mango purees were stored for at least three weeks at  $3\pm 1$  °C.  $L^*$ ,  $a^*$ , and  $b^*$  color parameters were analysed to evaluate mango color stability. The PPO activity in fresh mango puree at pH 3.5, 4.0, and 4.4 exhibited 11.7, 23.1, and 259.2 PPO activity units, respectively. This means there was a reduction in 95.5 and 91.1% of PPO activity for pH 3.5 and 4.0 respectively. No significant differences ( $P>0.05$ ) were observed for PPO activity among anti-browning agents and concentrations used separately, but PPO activity at pH 4.4 was significantly different ( $P<0.05$ ). All concentrations at of AA and 300 mg/kg of Cys at pH 3.5 and 4.0 exhibited less darkening during storage. No significant differences in PPO activity were observed for combinations of AA or 4-HR. The darkening effect of puree was slowed down as Cys and AA concentrations were increased in combination with 4-HR.