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Effects of green tea and grape seed and TBHQ on physicochemical properties of Baladi goat meats

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Abstract: The effect of natural extracts of green tea or commercial grape seed in combination with synthetic tert methyl-butylhydroquinone at different concentrations on lipid oxidation and the redness of goat meats stored at 5?C for 9 days was evaluated. Fresh boneless Baladi goat meats were ground and mixed at varying concentrations of green tea or grape seed extract alone or combined with tert methyl-butylhydroquinone. The color values of raw goat meat and the thiobarbituric acid-reactive substance values of raw and cooked goat meats were determined following 0, 3, 6, and 9 days of storage at 5?C. The antioxidant activity of the plant extracts and the tert methyl-butylhydroquinone ranged from 4.6?10.2 h induction time using an oxidative stability instrument. Thiobarbituric acid-reactive substance values ranged from 0.21 to 1.21 and 0.31 to 4.57 mg malondialdehyde/kg (goat meat) for the raw and cooked goat meats, respectively. Tert methyl-butylhydroquinone and plant extracts significantly decreased lipid oxidation of the goat meats, with a higher level of addition being more effective in minimizing lipid oxidation. Grape seed extract significantly increased the redness, while green tea extract decreased it; no effect of tert methyl-butylhydroquinone on the redness of goat meats was observed. This study has shown that inclusion of natural extracts of green tea and grape seed in goat meat could reduce lipid oxidation during its storage.