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ANTIOXIDANT ACTIVITIES OF DATE PITS IN A MODEL MEAT SYSTEM

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Abstract. The aim of the current investigation was to investigate the effect of date pits phenolic compounds compared to BHT as synthetic antioxidant on lipid oxidation and quality of ground beef during refrigerated storage at 0.00±0.50°C for up to 10 days. Khalas variety of date pits (*Phoenix dactylifera* L.) phenolic compounds was extracted with 4 solvents (Water, methanol, methanol: water (50:50 v/v) and methanol: water: acetone: formic acid (20:40:40:1). Ferric reducing antioxidant power assay (FRAP) and Folin–Ciocalteu reagent was used for determination of the antioxidant activity and phenolic content of date pits. Results indicated that the highest antioxidant was shown by the date pits extract (Water: methanol: acetone: formic acid), therefore 0.5, 0.75 and 1.00 % of either date pits extract and BHT were added to minced meat and evaluate it's effects on the lipid peroxidation of ground beef during storage process. TBA test as quality assurance test was conducted at the beginning of the experiment and after 2, 4, 6, 8 and 10 days of storage. The results of this study showed that the date pits extract (Water: methanol: acetone: formic acid) had significantly the highest levels of total polyphenols and antioxidant activity. Also, the obtained results indicated that phenolic compounds in date pits of khalas variety had high antioxidative effect in reducing the formation of hydroperoxides during storage.

Keywords: Phenolic compounds, antoxidative activity, date pits, FRAP method, fatty food.