

SUPERCRITICAL FLUID EXTRACTS FROM TAMARILLO
(*Solanum betaceum* SENDTN) EPICARP AND ITS APPLICATION AS
PROTECTORS AGAINST LIPID OXIDATION OF COOKED BEEF MEAT

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The using of the tamarillo (*Solanum betaceum* (Cav.) Sendtn (syn. *Cyphomandra betacea*)) epicarp as source of compounds with antioxidant activity in cooked beef meat (CBM) was explored. Extracts from tamarillo by supercritical fluid extraction (SFE) and Soxhlet extraction (SE) were obtained. The SFE was performed using pure CO₂ at different temperatures and pressures (40 and 50 °C; 10, 20 and 30 MPa) and CO₂ added with ethanol (CO₂/EtOH) as co-solvent (2, 5 and 8% w/w). EtOH and hexane were used in the SE. The antioxidant activity (AA) of extracts was evaluated in CBM, the protection against lipid oxidation was determined by measuring lipid hydroperoxides (LHP) and thiobarbituric acid reactive species (TBARS). The extract obtained by SFE with CO₂/EtOH (50 °C/30 MPa and 2% of EtOH) showed the highest AA. In SFE, the co-solvent addition improved considerably the AA and the extraction yield. The extracts obtained by SFE with CO₂/EtOH showed a better AA compared with the synthetic antioxidant TBHQ. The highest yield values were achieved by SE with ethanol (7.7 ± 0.4%) and by SFE with 5% EtOH (1.9 ± 0.1%). The results indicate that extracts of tamarillo epicarp are a potential source of antioxidant compounds.

Keywords: Tamarillo epicarp, *Solanum betaceum*, supercritical fluid extraction, antioxidant activity, lipid oxidation.

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