

C. ORALES1-15 :

EFFECT OF ULTRAFILTRATION PROCESS AND TEMPERATURE CONCENTRATION ON SOME MRPS CONTENTS AND ANTIOXIDANT, ANTIMICROBIAL AND CYTOTOXIC PROPERTIES OF DATE PALM SAP SYRUPS (PHOENIX DACTYLIFERA L.)

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Keywords :sap syrups, Antioxydant, Antimicrobial,Cytotoxicity

Abstract: In this study, we investigate the effect of ultrafiltration process and temperature concentration on MRPs content and antioxidant, antimicrobial and cytotoxic properties of date palm sap syrups. MRPs were analyzed by HPLC. Antioxidant activity was evaluated by reducing power and DPPH free radical and H₂O₂ scavenging activities. Antimicrobial activity was evaluated by the agar disk diffusion method. In vitro cytotoxic activity was examined by cell proliferation assay. Compared to maple syrup, date sap syrups displayed strong antioxidant activities which are correlated with total phenolic compounds, 5HMF and 2F contents. In addition, concentration at 100 °C, unlike ultrafiltration process, enhanced significantly the antioxidant activities and total phenolic contents of sap syrups. The antimicrobial activities showed marked activity against *S. enteric*, *P.aeruginosa*, *S aureus*, *L. monocytogenes* with an inhibition zone of 21, 34, 27 and 34 mm respectively. Cytotoxicity assays showed that sap syrups can inhibit the proliferation of HeLa cell lines at high concentration.