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QUALITY ATTRIBUTES AND ANTIOXIDANT PROPERTIES OF PAN BREAD AS AFFECTED BY FORTIFICATION WITH CAPER SEEDS

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ABSTRACT

This study was investigated the effect replacement of wheat flour by caper seeds powder (CSP) at levels (5, 10, 15 and 20%), as sources of fat, protein fiber and antioxidant compounds (polyphenols and flavonoids) for the improving of nutritional quality of pan bread. Also, study the effect of fortified pan bread at different levels on rheological, chemical, physical, sensory characters of pan bread. The CPS have a good source of fat (26.55%), protein (18.03%) and fiber (13.66%) also, considered a good source of unsaturated fatty acids especially oleic and linoleic (44.75 and 27.98%, respectively) from the total fatty acids percentage of oil in CPS, and additionally it contains considerable amounts of polyphenol compounds (6048.2 ppm) and flavonoid compounds (1606.5 ppm). The rheological study by using mixolab measurements of tested pan bread dough's appeared the increasing in stability and better product conservation by addition of CPS. The physical characteristics of pan bread partially substituted of wheat flour with CPS such as specific volume was gradually decreased with increasing CPS. Sample of pan bread substituted with level 15 and 20% CSP led to addition of natural antioxidants, which having a numerous beneficial effect in human health. In addition, substitution of wheat flour with CPS led to supplementation of produced pan bread by considerable amounts of natural antioxidants especially in samples substituted at up to 10% CPS. The organoleptic quality attributes of pan bread showed there was non-significant variation between samples (Crust color, Crumb color, Taste, Odor, Crumb texture, Shape, and overall acceptability). Therefore, it can be recommended that the CPS should be utilized for supplementation and enhancing quality attributes of pan bread which having a numerous beneficial effect in human health.

Key words: Caper seeds, Pan Bread, Mixolab, Flavonoids, Phenols, Fiber, Substitution