ABSTRACT

Composition of Polyphenols in Wheat Bread Supplemented with *Pleurotus ostreatus* Mushroom

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Pleurotus ostreatus mushrooms were blanched, milled into flour and incorporated into wheat flour at 5, 10 and 15%. These composite flours, together with composite breads developed from these formulations were evaluated for polyphenols, namely flavones and isoflavones. Wheat flour and wheat bread were used as control samples. Extraction of polyphenols was done using ethanol as a solvent and analyzed using gas chromatographmass spectrometry. It was not possible to make bread with 15% mushrooms. Quantities of different flavones and isoflavones evaluated increased significantly ($p<0.05$) with increasing supplementation of mushroom flour in wheat flour. Composite breads were also observed to have higher contents of flavones and iso flavones as compared to bread prepared from wheat flour only. Composite flour with 15% mushrooms had highest quantities of flavones and isoflavones while composite bread with 10% mushroom flour had significantly higher ($p<0.05$) levels of these compounds. Caffeic acid was the most abundant amongst all the flavones analyzed in wheat mushroom blends while genistein was the most abundant isoflavone. Flavones and isoflavones in human nutrition protect against oxidative stress and also provide medicinal properties such as antimicrobial, antiviral and anticancer benefits. *Pleurotus* mushrooms are a good source of these important compounds hence incorporating them in daily diet like bread would ensure constant supplementation for improved health and nutrition.

Key words: Pleurotus ostreatus, flavones, isoflavones, wheat mushroom composite flour