

ABSTRACT

INVESTIGATION OF ANTIOXIDANT PARAMETERS OF WHEAT GERM AND WHEAT GERM OIL

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In this work, antioxidant parameters of wheat germ flour and supercritical carbon dioxide extracted wheat germ oil were investigated. For this, samples were extracted using appropriate extraction solvents and were investigated thoroughly using various antioxidant capacity measurement methods testing different antioxidant properties. According to total antioxidant activity results, wheat germ flour-ethanol extracts exhibited high activity like standard antioxidants. According to IC₅₀ values wheat germ flour and oil extracts did not exhibit significant DPPH radical scavenging activity. Total phenolic content of wheat germ and wheat germ oil extracts were found to be high. Total flavonoid content of wheat germ flour extracts were found to be high. Total flavonol contents of wheat germ flour extracts exhibited lowest activity whereas wheat germ oil extracts highest. As for the, TEAC_{CUPRAC} results, BHT exhibited the highest activity whereas wheat germ flour-water extract were the lowest. According to TEAC_{ORAC} results BHT exhibited the highest activity whereas wheat germ flour and wheat germ oil extracts were the lowest. According to hydroxyl radical scavenging activity wheat germ flour-methanol, wheat germ flour-ethanol extracts and wheat germ oil extracts have highest activity like standard antioxidants. According to superoxide anion scavenging activity results wheat germ flour-water extracts has the highest activity. The reducing power of wheat germ oil extracts exhibited highest reducing power expressed as % ascorbic acid. According to the results obtained, antioxidant activity of wheat germ flour and wheat germ oil extracts were found to differentiate according to the method used. However, the overall results demonstrate that wheat germ and wheat germ oil have good antioxidant activity.

Key Words: Wheat germ, Wheat germ oil, Antioxidant capacity.