**Screening of antioxidant activity of some essential oils**

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**Abstract:**

The essential oils that possess antioxidant activity have been the subject of many investigations resulting in the screening of many medical plants and have revealed structurally unique biologically active compounds. An antioxidant is a substance that retard oxidation by inhibiting initial free radical formation or by preventing them from producing more free radicals which can perpetuate the reaction. The essential oils of cumin, black seeds, marjoram, rosemary and sage was subjected to the antioxidant activity using the 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging assay at 10, 25, 50,100, 250, 500, 750 and 1000 µg and compared with synthetic antioxidant butylated hydroxyl toluene (BHT) under level 10 µg. From the results it could be seen that the high concentration of essential oils (1000 µg) recorded the significantly (p≥ 0.05) difference higher inhibition percentage of radical DPPH among all the concentrations of essential oils of cumin (69.23), black seeds (74.69), marjoram (79.35), rosemary (81.66) and sage (83.76) %. Results showed that the inhibition percentage decreased with the decreasing of essential oils concentration. The inhibition percentage of radical DPPH were lowered up to 13.26, 10.45, 11.74, 20.60 and 36.22% with the concentrations of cumin, black seeds, marjoram, rosemary and sage essential oil under level 10 µg. On the other hand, the inhibition percentage of BHT at 10 µg was recorded 89.63%. Also, from the results it can be observed that sage essential oil had higher activities than other essential oils (83.76 %) under level 1000 µg, while, cumin essential oil had significantly (p ≥ 0.05)difference the lower (69.23 %) under level the same concentration, and all essential oils had significantly (p≥ 0.05)difference lower activities than BHT (89.63%) under level 10 µg. Antioxidant activity of different essential oils and BHT exhibited the effectiveness followed the sequence; BHT > sage > rosemary > marjoram > black seeds > cumin essential oil. The application of these essential oils as natural compounds useful in improvement shelf- life of food products and health supplements.

**Keywords:** Antioxidant activity, DPPH, essential oils, cumin, black seeds, marjoram, rosemary and sage