ANTIOXIDATIVE ACTIVITY AND CHEMICALS COMPOSITION OF VOLATILE EXTRACTS OF CORNSILKS (*Zea mays* L).

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ABSTRACT

Herbs and plants produce essential nutritional elements including natural phytochemicals and antioxidants. Phytochemicals and natural antioxidants have gained significant interest in recent years for their role in the prevention of auto oxidation of oils, fats and fat containing food products. These natural bioactive compounds confer health benefits which include protection against cardiovascular diseases (CVD), cancer, degenerative diseases, stroke, obesity and diverticulosis. Presently, corn hair or *Zea mays* hairs are discarded due to the lack of knowledge of its nutritional value and possible therapeutic properties. In the present study, it was noted dried corn hair contained 38.4 g/100g total dietary fibre while aqueous extract residue (4hrs) recorded the highest total dietary fibre content of 54.2g/100g followed by Soxhlet residue of the water extract at 41.8 g/100g. Dried corn hair boiled for 30 min recorded the highest concentration of total sugars concentration at 85.40 mg/100g. On the other aspect, total polyphenol concentration of methanol and water extracts were 102.9 mg GAE/100g and 14.2 mg GAE/100g of dry plant respectively. In radical scavenging activity, the methanolic extract scavenged at 81.7% of free radicals at 1000μg/ml while the water extract showed 63.5% of inhibition. Twenty-four volatiles comprising aldehydes, ketones, alcohols, alkane, fatty acids and a furan were identified in all dried cornsilk. 3-methylbutanal, hexanal, heptanal and nonanal was identified as key odorants in dried cornsilk. Besides that, 9, 12-octadecenoic acid and 9, 12, 15-octadecatrienioc acid being the prominent volatile compounds presented in dried cornsilk simultaneously distilled and extracted using SDE techniques. In conclusion, *Zea mays* hair contained important nutritional elements and various pleasant flavor components and thus, it could potentially be an alternative source of dietary components and flavor in food and food products.

KEYWORDS: Cornsilk, volatile components, antioxidant activity, chemical composition