Chemical composition, physicochemical properties and fatty acid profile of Tiger Nut (*Cyperus esculentus* L) seed oil as affected by different preparation methods.

Abstract

A comprehensive lipid profiling has been carried out on the seed oils from different preparation methods (soaking, blanching and roasting) of tiger nut (*Cyperus esculentus* L), in order to evaluate their potential uses. The paper reports the proximate evaluation of tiger nut tubers. The proximate composition was 7.30, 2.64, 22.14, 4.33, 15.47, and 48.12 % for, moisture, ash, crude fat, crude protein, crude fiber, and carbohydrate, respectively. The quality of the extracted oils was assessed in terms of acid value, iodine value, saponification value, peroxide value, refractive index, and unsaponifiable matter. The major fatty acids (FAs) of the tiger nut tuber oil were oleic (69.25%), palmitic (15.19%), linoleic (8.37%), and Stearic (5.07%) acids. These values did not vary significant (P<0.05) after soaking, blanching, and roasting.

This information may indicate that certain soaking, blanching, and roasting conditions applied to tiger nut (*Cyperus esculentus* L) prior to oil extraction may not enhance the fatty acids composition of the obtained oil. In addition, tiger nut oil can replace some common vegetable oils in food products.