

Physico-Chemical, GC-MS Analysis and Cold Saponification of Onion (*Allium cepa* L) Seed Oil

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Abstract : The experimental investigation revealed that the hexane extract of onion seed oil has acid value, iodine value, peroxide value, saponification value, relative density and refractive index of 0.03 ± 0.01 mgKOH/g, 129.80 ± 0.21 gI₂/100g, 3.00 ± 0.00 meq H₂O₂ 203.00 \pm 0.71 mgKOH/g, 0.82 ± 0.01 and 1.44 ± 0.00 respectively. The percentage yield was $50.28 \pm 0.01\%$. The colour of the oil was light green. We restricted our GC-MS spectra interpretation to compounds identification, particularly fatty acids and they are identified as palmitic acid, linoleic acid, oleic acid, stearic acid, behenic acid, linolenic acid and eicosatetraenoic acid. The pH, foam ability (cm³), total fatty matter, total alkali and percentage chloride of the onion oil soap were 11.03 ± 0.02 , 75.13 ± 0.15 (cm³), $36.66 \pm 0.02\%$, $0.92 \pm 0.02\%$ and $0.53 \pm 0.15\%$ respectively. The texture was soft and the colour was lighter green. The results indicated that the hexane extract of the onion seed oil has potential for cosmetic industries.

Keywords : onion seeds, soxhlet extraction, physicochemical, GC-MS, cold saponification

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