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Fatty acid composition, physico-chemical and antibacterial activities of oil extracted from bitter-cola

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Garcinia kola (Bitter cola) is a medicinal plant which is exclusively tropical in distribution. Traditionally, African medicine regards the plant in high esteem. Oil extract from *Garcinia kola* had a deep brown color, percentage yield of 3.3522 ± 0.01 , specific gravity of 0.9158 ± 0.01 , refractive index of 1.5400 ± 0.01 and viscosity (30°C)(Pas/sec) of 74.4383 ± 0.02 as its physical parameters respectively. All the physical parameters observed were very high compared with normal conventional oil. The chemical parameters were Acid value $17.3910 \pm 0.20\text{mg/g}$, free fatty acid $1.2174 \pm 0.20\text{mg/g}$, iodine value $26.9028 \pm 0.10\text{g}/100\text{g}$, saponification value $33.6600 \pm 0.2\text{ mmol/kg}$ and peroxide value $24.000 \pm 0.2\text{mg/g}$ respectively. The saponification value which is inversely proportional to the mean molecular weight of the glycerides in the oil was very low. The antibacterial activities were *Klebsiella pneumoniae* 0.20 ± 0.01 , *Streptococcus cereus* 0.60 ± 0.01 , *Staphylococcus aureus* 0.50 ± 0.02 and *Salmonella typhii* 0.30 ± 0.01 respectively. The fatty acid composition of the oil were palmitic acid (C16:0) 22.3528 as the only highest saturated fatty acid, oleic acid (C18:1) 26.2410 as the only highest monounsaturated fatty acid, Linoleic acid (C18:2) 42.9273 and linolenic acid (C18:3) as the only polyunsaturated fatty acids present. The oil extracted from this seed showed that the seed had a low yield and the oil is a non-drying oil and very viscous. It can be effectively used for a variety of domestic and pharmaceutical applications for curative purpose and fatty acid composition of this oil, suggest some industrial potentials.

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