# PHYTOCHEMICAL PROFILING AND IN VITRO ANTIOXIDANT ACTIVITY OF *DACRYODES EDULIS* SEED FLOUR METHANOL EXTRACT

Emmanuel Nnamdi Ifedi [a]*, Olayombo Margaret Banwo [b], Olakunle Alex Akinsanoye [a], Oluwadurotimi Akintade [c]

[a.]*Industrial unit, Department of Chemistry, University of Ibadan, Ibadan, Nigeria*
[b]*Department of Industrial Chemistry, Abiola Ajimobi Technical University, Ibadan,200255 Nigeria*
[c]*Department of Chemical Sciences, KolaDaisi University, Ibadan, Nigeria*
** e-mail: ifedi79@yahoo.com*

**Abstract:** The growing interest in naturally derived bioactive compounds with health promoting properties has intensified the study on *Dacryodes edulis* seed flour methanol extract (DESME). DESME obtained by cold extraction method using methanol was characterized by gas chromatography - mass spectrometry (GC-MS) and fourier transform - infrared (FT-IR) spectroscopy. Antioxidant activity was assessed by 1,1-diphenyl-2-picrylhydrazyl radical and ferric reducing antioxidant power assays. Phytochemical analyses, conducted through established standard methods, identified a wide class of compounds, including saponins, alkaloids, flavonoids, tannins, phenolic compounds, coumarins, terpenoids, cardiac glycosides, carbohydrates, and free amino acids. Among the identified compounds by GC-MS, fatty acids and fatty acid esters were abundant class, with 9-octadecenoic acid being the most dominant compound. FT-IR showed major absorption peaks at 1709.15 $cm^{-1}$, 1611.56 $cm^{-1}$ and 3276.3 $cm^{-1}$, confirming the presence of carbonyl, aromatic, hydroxyl and nitrogen-containing functional groups, respectively. DESME demonstrated a total phenolic content of 320.68±0.33 GAE mg/g and exhibited strong antioxidant inhibition (92.52%). Hence, DESME is rich in phenolics, fatty acids, and fatty acid esters bioactive compounds, all of which contribute to its significant antioxidant activity.

**Keywords:** phytochemical, *Dacryodes edulis*, 9-Octadecenoic acid, GC-MS, antioxidant activity.