

- Experimental study on FT-IR shows KCDL as a high free fatty acid ester of long carbon chain (C18:2) with two strong carbon-carbon double bonds.
- FT-IR spectra of KCDL shows almost 80% similar trends of Linoleic acid methyl ester (unsaturated fatty acid).
- At constant load and increasing sliding speed, coefficient of friction increases and specific wear rate decreases 8.16 % and 2.23 % respectively for every 50rpm increase in speed under lubricated condition.
- At constant speed and increasing load both coefficient of friction and specific wear rate increases. As load increases from 20 N to 30 N specific wear rate increases 10.88 %.
- The low values of specific wear rate are only because of the presence of triglyceride in KCDL which helps to form a thin tribo-layer in contact region.
- There is no such change in specific wear rate with varying load and varying speed due to the tribo-film formation during the moving of contact surface with the help of KCDL.

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ABBREVIATION

KCDL	Kitchen chimney dump lard
FTIR	Fourier transform infra-red
COF	Coefficient of friction
WVO	Waste vegetable oil
SAE	Society of automotive engineers
AISI	American iron and steel institute