**Extraction and Characterization of Drilling Fluid from Castor Oil**

**Abstract**

Drilling fluid is an essential component in drilling operations. It is used to prevent blowouts by creating adequate hydrostatic pressure, lubricating the walls of a well and the drill string, flushing to the surface of cuttings, and keeping the drill bit clean and cool. Extraction, characterization and formation of drilling fluid from castor seed oil were investigated. The castor seeds used were obtained from a local market and the extraction of the oil was done mechanically. The extracted oil characteristics such as specific gravity, pH, acid value, iodine value, saponification value, refractive index and viscosity were within the standard range before before formulating it to drilling fluid by the addition of additives. The result of the formulation obtained showed that the formulated drilling fluid had an electrical stability of 222 V, High Pressure/High Temperature of 8.8, mass funnel viscosity at 30 and 50 oC were 26.5 and 25 s, respectively; chemical alkalinity was 0.3 and excess lime of 0.39 Ib/bbI. The findings in this research have shown that formulated drilling fluid from castor seed oil is safe as drilling fluid and has characteristics close to that of the standard drilling mud equivalent circulating density 99. The formulated drilling fluid can adequately serve as an alternative to the commercial products.