Quality Characteristics of Hydrotreated Biodiesel(HBD) as alternative diesel fuel

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Hydro-treated biodiesel(HBD) is a paraffinic bio-based liquid, with the chemical structure C_nH_{2n+2}, originating from vegetable oil(the process can also be applied to animal fat). The oil or fat is treated in a number of process, the most important being hydrogenation, in order to create a bio-based liquid diesel fuel. During the hydrogenation, oxygen is removed from the triglyceride and converted into water. Propane is formed as a by product and can be combusted and used for energy production. HBD can be used in conventional diesel engines, pure or blended with conventional diesel, due to its similar physical properties to diesel. This study reports the quality characteristics with chemical and physical properties as an alternative diesel fuel. Especially, HBD showed higher cetane value and number than FAME, and it is consisted of C15-C18 n-paraffinic compounds. Also, it has better oxidation stability than FAME, as FAME has double bonds but HBD has single bonds.