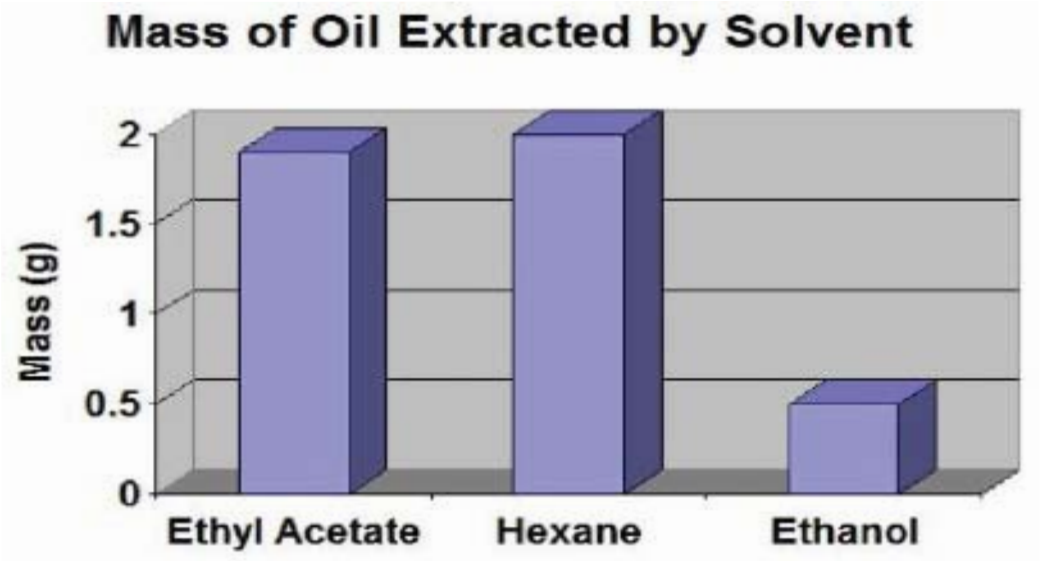
TBK BIODIESEL PROCESS HAS NO GLYCERINE BY PRODUCT. GIVES 10% MORE BIODIESEL FUEL THAN FAEE.

TBK BIODIESEL PROCESS	**ALGAE OIL**	**+**	**ETHYL ACETATE**	**>**	**MODIFIED AcTAGS OXYGENATED MOLECULE**	**+**	**FATTY ACID ETHYL ESTER FUEL**
TRADITIONAL BIODIESEL PROCESS	**ALGAE OIL**	**+**	**ETHANOL**	**>**	**GLYCERINE 10% BY-PRODUCT**	**+**	**FATTY ACID ETHYL ESTER 90% FUEL**

Jatropha Oil Extraction

tbkbiodiesel.com



Ethyl Acetate (EA), our interesterifying agent in the TBK BioDiesel reaction, can be used instead of hexane for oil extraction for plant and algae oils.

So with properly chosen EA volumes, this extract (Oil + EA) upon addition of catalyst, can be used straight for the TBK Biodiesel reaction, greatly improving on our economics.

So introducing this method at an oil mills, the EA + oil mixture is to be transported to TBK plants. And if we could do this with green Bio - EA and thus replacing petroleum-derived hexane, we would gain still more.

Jatropha Oil Extraction Procedure using Ethyl Acetate, Hexane, & Ethanol

High School Chemistry Laboratory Project

Of the three solvents, ethyl acetate and hexane were the easiest to evaporate following extraction, and ethanol was the hardest to remove. Ethanol 0.5 gms performed poorly following extraction, due to its non-polar and polar ends, and is not a good alternative to hexane.

Ethyl acetate 1.9 gms is an acceptable alternative to hexane 2.0 gms as it yielded a comparable amount of oil, and is possibly a more natural and sustainable method of jatropha oil extraction. Ethyl Acetate has low toxicity. Most Coffee beans and tea leaves are decaffeinated with Ethyl Acetate.

An alternative to hexane in extraction should be considered for two main reasons: first, hexane is a fossil fuel, the second largest component of natural gas next to methane. Secondly, the United States Environmental Protection Agency (EPA) now considers hexane a hazardous air pollutant (HAP). It is monitored and regulated under the Toxic Release Inventory (TRI) Program of the EPA.