**Biodiesel generation from *parinari curatellifolia* (hacha) nuts. *A green energy resource alternative***

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**Abstract:**

Conventional fuels have been used for quite long time without taking into consideration the amount of emissions they had produced so far. This drastically changed the raining seasons, produced unpredictable yields, pests have become more and severe and all the other problems which were not mentioned. All the stated problems have been talked of by the researchers of which some of their discoveries which were made, have been seen successful but in the long run of the solution it had turned also to be a greatest carbon emitter source. The balances of the carbon dioxide needed by plants and the carbon dioxide which is being taken as oxygen by animals including human beings as a whole is shown to be imbalanced which have resulted in global warming which is caused by high greenhouse gas emissions. The amount of carbon emissions in the atmosphere has been also increased by the activities which being carried out by our own industries which spans from food, chemical, electrical, mining, petroleum and cement industries. Due to the effects caused by those industries, the environmental management authority (EMA) of each state have introduced certain charges against the carbon emissions they produce. As part of the green economy, the researcher asked certain institutions and boards on the use of the charges of carbon emitters are tasked to pay for which the researcher got that these fines will be used to do surveys at companies and set a budget to fund green energy project which seems to be promising. In Zimbabwe, a variety of indigenous trees are found and have gone for years without maximum utilization of their seeds, leaves and kernel. According to the biological innovation of Zimbabwe, almost 10 species of indigenous trees have gone underutilized of which their value can be more advantageous than the exotic trees which are taken from other countries such as the jatropha plant in Zimbabwe. This research finding is focusing on biodiesel generation from locally and indigenous trees found in almost all countries in Africa, *parinari curatellifolia* (hacha) nuts.

**What will audience learn from your presentation?**

1. Inadequate resources of setting up of exotic plantation such as the case in Zimbabwe for jatropha have caused high emissions to be exposed to the atmosphere from the use of conventional fuels which are seriously emitting large amount of greenhouse gas which had led to increased death of infants, lung diseases and global warming which affects the raining season thereby causing poor yields which cause poverty and hunger to affect the nation, therefore to prevent such problems, it is of significance to unlock the value of underutilized indigenous trees which can substitute the use of exotic trees which might find it difficult to start adapting to unpredictable rainfall. Biodiesel produced from *parinari curatellifolia nuts* can be used as a blend with conventional fuels as a way to reduce emissions and improving its use in energy.
2. The physiochemical properties showed that the oil was highly unsaturated and had semi-drying properties. The semi-drying nature of the oil and its saponification value made it fit for the production of hair shampoo and shoe polish. The oil is quite edible and preferred for good health due to the presence of monounsaturated fatty acids and essential fatty acids. It can also be employed in the cosmetics industries for beauty soaps, hair and skin oil products.

**Biography of presenting author**

Tinemi Douglas Hondo studied Chemical engineering at the Harare Institute of Technology, Harare. He then joined the Central African Forge Private Limited as a Quality Assurance Engineer for 3years. I’m an adaptable and innovative aspiring Chemical and Process Systems Engineer capable of working and associating with dynamic service organizations and developing world class solutions to real world challenges.

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