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HOUSE WASTES DISPOSALS USING PYROLYSIS TECHNIQUES TO RECYCLE IN TO USABLE BIOCHAR AND REDUCE ENVIRONMENTAL POLLUTIONS

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ABSTRACT

The main objective of the research conducted on recycling solid household wastes is to convert rubbishes into biochar through pyrolysis techniques and use as source fuel energy, soil fertilizer and cleanse environmental pollutions.

Pyrolysis technique was used as a method of converting organic solid wastes into biochar a fine charcoal like material with high organic carbon and basic nutrient contents and largely resistant to decomposition. To employ pyrolysis techniques or thermo dynamic methods of partially combusting feedstock of wastes in the absence or limited oxygen barrel kilns were improvised. The feedstock was prepared from solid household and Khat wastes to feed the Barrel Kilns and process pyrolysis and produce two types of biochar with required temperatures. The research was extended to attest the soil amendment capacity of biochar on field based experiment on carrot and salad crops.

As a result, recycling wastes into a multipurpose biochar was effective and successful that the byproduct biochar was found usable for alternate fuel energy, soil fertilizer and reduction of environmental pollutions. It was investigated that biochar added soils have effectively improved the yielding capacity of carrot by 50% and salad by 22%.

Biochar is a simple product usable for fuel energy and as a means of income generation, soil amendment to improve crop productivity and saving money from buying fertilizers while it cleanses the environment by reducing pollutants and mitigate climatic changes.

KEYWORDS*:* Amendment, Biochar, Disposal, Feedstock, Pyrolysis, Wastes and Yields