

The potential bio-energy crops in the renewable energy thrust for the Caribbean

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The fluctuating and high price of fossil fuels have challenged sugar producing countries to pursue co-generation and ethanol production as alternative sources of energy. However, there several Small Island Developing States [SIDS] that have already exited the industry and who face similar economic challenges. Indigenous bio-energy crops have been demonstrated in the tropics as sustainable and alternative source of energy. This paper presents an agro-energy evaluation of three (3) bio-energy crops in the Caribbean, viz . drumstick vegetable (*moringa oliefera*), physics nut (*jatropha curcas*), and castor oil (*rincinus communis*). These crops were established using zero or marginal management *practices* and inputs. Agronomic, morphological, and phenological assessments were conducted and proximate analysis performed to determine the crude fat and oil yield potential as a bio-diesel. The results indicated that the seed yield potential for *moringa*, *jatropha*, and *rincinus* were 13.1, 0.94 and 3.15 $t.ha^{-1}$, respectively. The oil yield based on crude fat (%CF) showed that *moringa* (38.8%CF) produced significantly the highest oil yield (5.01 $t.ha^{-1}$), compared to *rincinus* (40%CF) and *jatropha* (49%CF) which produced 2.52, and 0.68 $t.ha^{-1}$, respectively.

Palabras Claves/Key Words: bio-energy, *moringa oliefera*, *jatropha curcas*, *rincinus communis*, bio-diesel, co-generation.