

4. Conclusion

The pH adjusted fermentation mixture gave more biogas than raw pulp. Addition of urea also increased the biogas production and metal ions of Iron, Magnesium, and Calcium have stimulatory effects at optimum concentration. Some metals are inhibitory at very low concentrations (e.g., Zn²⁺) whereas some are not inhibitory at high concentrations (e.g., Fe²⁺). Metal ions also increased the methane content of biogas. When combinations of various metal ions were used as additive, more biogas was produced than to any other individual metal ion containing substrate. Combined form of metal ion with urea also improved methane content of biogas. Monomer sugars present in mango pulp can be fermented for better biogas production. Since mango is grown in tropical climates, the possibility of bacterial contamination and fermentation is high, resulting in decayed and putrefied fruits, which leads to non-acceptance by customers. The damaged and rotten fruit from market as well as mango processing industry wastes can be used for the production of biogas, leading to a cleaner environment and eco-friendly energy production for sustainable development.

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