Livestock Emissions and Coconut Waste: Analyzing the Inhibitory Potential of Coconut Waste Products in Cattle Manure Methane Emissions

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Climate change comes in many forms, sometimes from unexpected sources. Manure management facilities are some of the most overlooked, yet consequential facilitators of climate change, contributing nearly 15 million tons of methane waste annually. The manure is generally held in the facilities for 2-4 weeks, until late repurposed as fertilizer, during which the gas accumulates. Coconut oil, a potent inhibitor of ruminal digestion, would be implemented in study if not for its expensive price. To identify a solution feasible in application, waste products of coconut oil processing were implemented to limit the methane output of the manure. 5 treatments, including a control and 2 dosages(25g/L,50g/L) of runoff water and meat press were studied for efficacy. Over the 15-day period, all 4 treatments successfully inhibited the effects of methane waste relative to control with runoff water at 50g/L showing the most promise. In future, longer periods(30-50 days) would be studied, as well as on larger manure samples. The implementation of the solution in real industrial facilities could prevent millions of tons of methane waste, prolonging the longevity of sustainable agriculture.

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