

Investigating the Synergistic Effects of High-Fiber and Potassium-Enriched Diets on Anaerobic Decomposition and Methane Emissions in Cow Manure

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The project targeted two specific nutrients types, fiber and potassium and see if it has a correlation with methane productivity in cow manure. The goal was to increase the targeted nutrients by making a special diet to target those nutrients and give it to a cattle group for 30 days. To test the difference, The research separated 50 cows into two groups, each with similar characteristics such as age, gender, strain. We then collected manure data such as pH levels, moisture levels, and temperature levels. With those factors plus environment factors such as wind speed, humidity, temperature, all of these will be cross referenced and put into an atmospheric dispersion model to calculate the methane production from a specific source or in this case, manure. This will also be replicated with the controlled group and then after the 30 days, collected data will be compared. After comparison, the researcher concluded that the special diet produced a 10% increase in methane production in cow manure compared to the controlled variable with a standard diet. The experiment concluded that the correlation between methane production through cow manure and the diet that the cow consume correlate, and that an increase of these nutrients such as fiber and potassium and increase the methane production yield.

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