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 nuritents and give it to a cattle group for 30 days. To test the difference, The research seperated 50 cows into two groups, each withsimilar charateristics such as age, gender, strain. We then collected manure data such as ph levels, moisture levels, and tempeture levels. With those factors plus enviroment factors such as wind speed, humidity, tempeture, all of these will be crossed referenced and put into a atmospheric dispersion model to calculate the methance 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 concldued that the correlation between methane production through cow manure and the diet that the cow consume correlate, and that a increase of these nutrients such as fiber and potassium and increase the methane production yeild.

Awards Won: