The Effect of Fermentation on Corn Silage Nutritional Composition

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By the year 2050, the world population is expected to increase substantially. To meet the needs of the world's growing population, farms need to become more sustainable. The purpose of this experiment was to determine how fermentation affects corn silage nutrients to aid farmers in selecting a corn variety to meet their operational needs. The fermentation process is essential before corn silage is fed to a ruminant animal because it becomes easier for the animal to digest and is better for long term storage. Because of this, many farmers feed their livestock corn silage. It was hypothesised that both the Total Digestible Nutrients (TDN) and the protein will decrease after fermentation. Last spring five corn varieties were planted in a field. After 117 days of maturing, the corn was chopped and samples were pulled. The rest of the five chopped corn varieties were packed in individual 55 gallon drums to ferment. The freshly chopped samples were dried, ground, and tested for nutrients with a Near Infrared Ray spectroscopy machine. 105 days later, the 55 gallon drums were opened and samples were pulled from the fermented corn and tested. The data shows that the TDN decreased in all but the 8614 variety and the protein increased in all but the 8516 variety. Based on the data, the 8614 variety is recommended for farmers because it offers the largest range of TDN and protein nutrient increase after fermentation to benefit livestock production.

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